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GARDENER'S AND BOTA

DICTIONA

CONTAINING

THE BEST AND NEWEST METHODS OF CULTIVATIN

KITCHEN, FRUIT, AND FLOWER GA

OF PERFORMING THE

PRACTICAL PARTS OF AGRICU

OF MANAGING VINEYARDS,

AND

OF PROPAGATING ALL SORTS OF TIMBER TREES.

BY THE LATE

PHILIP MILLER, F.R.S.

GARDENER TO THE WORSHIPFUL COMPANY OF APOTHECARIES AT THEIR BOTANIC GARDEN IN
AND MEMBER OF THE BOTANIC ACADEMY AT FLORENCE.

TO WHICH ARE NOW FIRST ADDED,

A COMPLETE

ENUMERATION AND DESCRIPTION OF ALL PLANTS HITHERTO KNOW

WITH THEIR

GENERIC AND SPECIFIC CHARACTERS,

PLACES OF GROWTH, TIMES OF FLOWERING, AND USES BOTH MEDICINA
AND ECONOMICAL.

THE WHOLE CORRECTED AND NEWLY ARRANGED,

WITH THE ADDITION OF ALL THE MODERN IMPROVEMENTS IN LANDSCAPE GARDENING,
CULTURE OF TREES, PLANTS, AND FRUITS,

PARTICULARLY IN THE VARIOUS KINDS OF HOT HOUSES AND FORCING FRAMES.

WITH PLATES EXPLANATORY BOTH OF THEM, AND THE PRINCIPLES OF BOTANY.

BY

THOMAS MARTYN, B.D. F.R.S.

REGIUS PROFESSOR OF BOTANY IN THE UNIVERSITY OF CAMBRIDGE.

IN TWO VOLUMES.

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BY LAW AND GILBERT, ST. JOHN'S SQUARE, CLERKENWELL.

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THE

GARDENER's AND BO

DICTIONARY

KADALI. See Musa.
KAKIMARA. See Ficus.
KAKOSPERMA. See Genista.
KÆMPFERIA. (So named by Linnæus from Engelbert Kæmpfer, a celebrated traveller; he published Amœnitates exoticæ, Lemgo and Travels into Japan, 1727.)
Gen. pl. 2. Ed. 1. 1. Schreb. 2. Juss. 6.
Class 1. 1. Monandria Monogynia.
Nat. order of Scitamineæ.—Linn. Juss.

GENERIC CHARACTER.

Cal. Perianth superior, obscure.
Cor. one-petalled: Tube long: Border. Berries two-parted: the three alternate segments lanceolate, obtuse, small: the other two opposite, ovate, acute, concave, petal-like, the two from above less, all equal in length.
Stam. Filament five, awl-shaped, shorter than the corolla: Antheræ oblong, erect, double, converging, furrowed, emerging from the tube of the corolla.
Pist. Germ roundish, under the length of the tube: Stigma two-plated, roundish.
Per. Capsule roundish, three-lobed, three-celled, three-valved.
Seeds several.

Obs. It rarely bears fruit. The germ is found near the root.

ESSENTIAL CHARACTER.

Cor. Ex-parted, three of the parts larger, spreading, one two-parted. Stigma two-plated.

SPECIES.

1. Kæmpferia Galanga. Galangale.
Lin. Spec. 3. Willd. 1. Reich. 1. Jacq. 1. Bot. Mag. 1. Curt. Mag. 2. Ait. Kew. 1. Roxb. 1.
Sonnerat. Raleigh. Smith. Jacq. Obs. 1. Bot. Rep. 1.
Wasbom. Kæmpf. amœn. 911. t. 906.
Kæmpferia Galanga. Roxb. Hort. Beng. 1. Flor. Ind. 1.
Calocalus Galanga. Rumph. Amb. 5. t. 1.
Costus Arabicus. Rumph. Amb. 5. t. 2. f. 1.
Zerumbet. Rumph. Amb. 5. t. 3. f. 1.
Kæmpferia rotunda.
Lin. Spec. 3. Reich. 1. Jacq. 1. Bot. Mag. 1. Curt. Mag. 2. Ait. Kew. 1. Roxb. 1.
Sloane. Jamaic. 1. t. 93. f. 1.
Plukn. Phyt. t. 93. f. 5.

Zerumbet rotunda. Rumph. Amb. 5. t. 3. f. 2.
Malacensis. Rheed. Mal. 11. t. 47. f. 59. Raj. Hist. 1. 418.
Costus foliis ovatis petiolis brevissimis. Sloane. Jamaic. 1. 93. t. 1. f. 1.

[This is an annual, fleshy plant, with a palmate, creeping, white root, and tall shaped stalk. Simple leaves. Leaves growing from the ground, oval, obtuse, with many longitudinal grooves. Flowers membranaceous, gibbous, spreading, having the tube white. Flowers radical, oblong, erect, with a large white spathe. Corolla blue, lower petal purple, petals many, awl-shaped, the two upper purplish. Corolla silver-coloured, long, slender, curved; border spread out, four-parted, three segments lanceolate-linear, curved towards a side, equal, longer, two alternate, ovate, the lowest broader, very blunt, shorter, purplish. Stamens fifteen, with a white

fort has roots somewhat like those
growing in large clusters, co-
coloured skin, but within white;
leaves, which fold over each
of an eight inches long,
gradually ending in
immediately from the
cut into two
Petals; they
incline down-
are divided
four petals,
ed colours,
but odour:
ot produce
ed by Mr.

hot-houses, will
end require a warm
ings the winter; but as
seasons, the plants should not
quite inactive then.
Kalmia.

Bastia, Cunnedrum, Galeria, Gyph-
Plantago, Ranunculus, Scil-

Linnæus in honour of Peter
Author of Travels

Schreb. 743. Gærtn.

Decandria Monogynia.

Kalmia. Juss.

small, permanent, five-

form. Petals cohering
with a flat limb, the
five-cleft, inclosing the five
externally from the stamens and pis-
the border of it is hipped.

upright capsules, ra-
the cells, inverted
Seeds simple.

with five thread-form stamens longer than
the down. Stigma obtuse.

globular, depressed, five-celled, five-
ever-green.

Kalm.

(Amelan-
(Chinese spurge)

Plat.

(Cistus)

Narrow-leaved Kalmia.

Kalm. n. 288. tab.
Mill.

illustr. Curt. magaz. 331. Gron. virg. 21. (Azalea) Catesb. car. 3. t. 17. f. 1. (Chamædaphne) Trew ehret. t. 38. f. 2. (Ledum) Pluk. mant. Trew ehret. t. 38. f. 2. (Ledum) Pluk. mant. 139. f. 10. (Cistus) Cal. week. 100. (Andromeda).

2. Kalmia. Red-flowered narrow-leaved Kalmia.
3. Carnea. Pale-flowered narrow-leaved Kalmia.

Leaves lanceolate, ternate: lateral.

[3. Kalmia glauca. Glaucous Kalmia.
Ait. hort. kew. 2. 64. t. 8. L'Herit. stirp. nov. 2.
t. 6. Curt. magaz. 177.
Leaves opposite oblong lanceolate, glaucous underneath revolute, entirely entire, petioled. Corymbs terminating, branches compact.

4. Kalmia hirsuta. Hairy Kalmia.
Curt. magaz. 178.
Leaves ovate, alternated to both ends, peduncles axillary two-flowered.]

DESCRIPTION, &c.

1. Broad-leaved Kalmia rises with a branching stalk to the height of ten to twelve feet, with very little, which are two inches long and one broad, of a dark green on the upper side, and of a pale green on the under; they have short foot-stalks, and stand alternate; they have short foot-stalks, and stand alternate; they have short foot-stalks, and stand alternate

Rumphius observes that the leaves when bruised have a smell like violets; effects of the same kind.

Native of Java, Amboina, and the Philippines; where it flowers frequently in the year, and has commonly fruit and a ripe nut, shaped like the nutmeg of colour.

KLEISIA. See *Dillenia* and *Papaya*.

KNAWEL. See *Corrigiola*.

KNAUTIA. (*Dedicated by Linnæus, from Christopher Knaut, physician at Halle in Saxony, author of a Flora Halensis.*)

Gen. pl. 6. *Reich.* 1212. *Juss. Genera Plant.* 195.

Class and order. *Tetrandria Monogynia.*

Nat. order of the *Aggregate—Dipsaceæ.* Juss.

Gen. char. Common calyx contains two florules; proper calyx of each florule double; outer calyx, upright, quinquedentate; inner calyx, quinquefid. Corolla of the florule of the disk one-petalled, funnel-shaped, tube very small, scarcely the length of the calyx, quinquefid, regular; of the florule of the radius one-petalled, funnel-shaped, tube very small, scarcely the length of the calyx, quinquefid, irregular. Stamens four, inserted into the tube of the corolla, filiform, very short. Anthers oblong, incumbent. Pistil: germen inferior, ovate. Style filiform, length of the stamens. Stigma bifid, obtuse. Pericarp none. Seed solitary, invested, crowned with the calyx, and covered with the proper involucre of the florule. Receptacle common, chaffy, bristly.

Ess. char. Common calyx contains two florules; proper calyx of each florule double; outer calyx, upright, quinquedentate; inner calyx, quinquefid. Corolla of the florule of the disk one-petalled, funnel-shaped, tube very small, scarcely the length of the calyx, quinquefid, regular; of the florule of the radius one-petalled, funnel-shaped, tube very small, scarcely the length of the calyx, quinquefid, irregular. Stamens four, inserted into the tube of the corolla, filiform, very short. Anthers oblong, incumbent. Pistil: germen inferior, ovate. Style filiform, length of the stamens. Stigma bifid, obtuse. Seed solitary, invested, crowned with the calyx, and covered with the proper involucre of the florule. Receptacle common, chaffy, bristly.

Obs. The genus is differenced from *Scabiosa* by the indented calyx, and the bifid stigma of the flower.

SPECIFICAL CHARACTERS.

Cal. common oblong, simple, quinquedentate. Florules proper double, superior, *Corollæ* irregular. *Receptacle* chaffy.

SPECIES.

1. *Knautia arvensis.*

Lin. Sp. Pl. 146. *Gmel.* 1. 287. *Scop. Carn.* 1. 160. *Jacq. Austr.* 4. 40. *Reich. Ingol.* 1. 132. (*Scabiosa Scabiosa*) *Pall. It.* 3. 737. *Fl. Dan.* 1. 178. (*Scabiosa*).

Leaves pinnated, *segments* of *leaves* longer than the upper.

2. *Knautia grandiflora.*

Lin. Sp. 146. *Gmel.* 1. 286. *Scop. Carn.* 1. 159. *Jacq. Austr.* 4. 39. *Reich. Ingol.* 1. 132. (*Scabiosa Scabiosa*) *Pall. It.* 3. 737. *Fl. Dan.* 1. 178. (*Scabiosa*).

Upper leaves lanceolate, *quite entire, serrulate, or deeply toothed.*

3. *Knautia ambigua.*

Lin. Sp. 146. *Gmel.* 1. 286. *Reich.* 1. 286. *Jacq. Austr.* 4. 39.

Leaves pinnated, *segments* of *leaves* lanceolate.

4. *Knautia integrifolia.*

Lin. Sp. 147. *Reich.* 1. 287. *Jacq. Austr.* 4. 40.

Upper leaves pinnate, *segments* lanceolate, *quite entire*, *serrulate*, *or deeply toothed.*

5. *Knautia hybrida.*

Lin. Sp. 147. *Reich.* 1. 287. *Jacq. Austr.* 4. 41.

Upper leaves pinnate, *segments* lanceolate, *quite entire*, *serrulate*, *or deeply toothed.*

6. *Knautia silvatica.*

Lin. Sp. 147. *Reich.* 1. 287. *Jacq. Austr.* 4. 41.

Upper leaves pinnate, *segments* lanceolate, *quite entire*, *serrulate*, *or deeply toothed.*

7. *Knautia orientalis.*

Lin. Sp. 147. *Reich.* 1. 287. *Jacq. Austr.* 4. 41.

Upper leaves pinnate, *segments* lanceolate, *quite entire*, *serrulate*, *or deeply toothed.*

8. *Knautia dipsacifolia.*

Lin. Sp. 147. *Reich.* 1. 287. *Jacq. Austr.* 4. 41.

Upper leaves pinnate, *segments* lanceolate, *quite entire*, *serrulate*, *or deeply toothed.*

9. *Knautia tatarica.*

Lin. Sp. 147. *Reich.* 1. 287. *Jacq. Austr.* 4. 41.

Upper leaves pinnate, *segments* lanceolate, *quite entire*, *serrulate*, *or deeply toothed.*

10. *Knautia montana.*

Lin. Sp. 147. *Reich.* 1. 287. *Jacq. Austr.* 4. 41.

Upper leaves pinnate, *segments* lanceolate, *quite entire*, *serrulate*, *or deeply toothed.*

11. *Knautia pannonica.*

Lin. Sp. 147. *Reich.* 1. 287. *Jacq. Austr.* 4. 41.

Upper leaves pinnate, *segments* lanceolate, *quite entire*, *serrulate*, *or deeply toothed.*

12. *Knautia carpatica.*

Lin. Sp. 147. *Reich.* 1. 287. *Jacq. Austr.* 4. 41.

Upper leaves pinnate, *segments* lanceolate, *quite entire*, *serrulate*, *or deeply toothed.*

13. *Knautia hispanica.*

Lin. Sp. 147. *Reich.* 1. 287. *Jacq. Austr.* 4. 41.

Upper leaves pinnate, *segments* lanceolate, *quite entire*, *serrulate*, *or deeply toothed.*

14. *Knautia gallica.*

Lin. Sp. 147. *Reich.* 1. 287. *Jacq. Austr.* 4. 41.

Upper leaves pinnate, *segments* lanceolate, *quite entire*, *serrulate*, *or deeply toothed.*

15. *Knautia lusitanica.*

Lin. Sp. 147. *Reich.* 1. 287. *Jacq. Austr.* 4. 41.

Upper leaves pinnate, *segments* lanceolate, *quite entire*, *serrulate*, *or deeply toothed.*

16. *Knautia hispanica.*

Lin. Sp. 147. *Reich.* 1. 287. *Jacq. Austr.* 4. 41.

Upper leaves pinnate, *segments* lanceolate, *quite entire*, *serrulate*, *or deeply toothed.*

17. *Knautia gallica.*

Lin. Sp. 147. *Reich.* 1. 287. *Jacq. Austr.* 4. 41.

Upper leaves pinnate, *segments* lanceolate, *quite entire*, *serrulate*, *or deeply toothed.*

18. *Knautia lusitanica.*

Lin. Sp. 147. *Reich.* 1. 287. *Jacq. Austr.* 4. 41.

Upper leaves pinnate, *segments* lanceolate, *quite entire*, *serrulate*, *or deeply toothed.*

flower. *Corn.* three-lobed, fixed to the same column. *Cap.* three-celled, with two cells in each cell.

SPECIES.

* Kuntzeria pauliniodes.
L'Hér. Sert. 18.
K. pauciflora. *Lour. Flor. Cochin. 326. t. 91. f. 18.*
Spiraea chinensis. *Lin. Syst. Veg. 703.*

SPECIFIC CHARACTER.

Trunk arborescent, upright, round, smooth, branched, exceeding the height of a man. *Branches* scattered, spreading, smooth, when young they are covered with glands. *Leaves* four from the same point, very numerous, cone-shaped with innumerable folds. *Petioles* scattered, spreading, smooth, club-shaped at the base, channelled towards the top, very long. *Leaves* unequally pinnate, with six pairs of leaflets, which are ovate, lanceolate, acute, smooth, flat. *Pedicels* scattered, spreading, branched into many pedicels. *Flowers* united, three or more on each pedicel.

Native of China.

Kuntzeria pauciflora. Lour. Flor. Cochin. 326. t. 91. f. 18.

Class 13. Icosandria Trigynia.
Nat. order of *Rosaceæ*. Polygamia, Juss.

GENERIC CHARACTER.

Cal. Perianth three-leaved: *leaflets* ovate, concave, permanent.
Cor. none.
Stam. *Filaments* three, awl-shaped, shorter than the calyx. *Anthers* roundish.
Pist. *Germ* ovate. *Styles* three. *Stigmas* three (often two), approximated, ovate, obtuse.
Per. none: but the calyx covers the seed, without closely covering it.
Seed single, ovate, naked, length of the calyx, terminated by the permanent stigmas.

ESSENTIAL CHARACTER.

Cal. three-leaved. *Cor.* none. *Seed* one, ovate, naked.

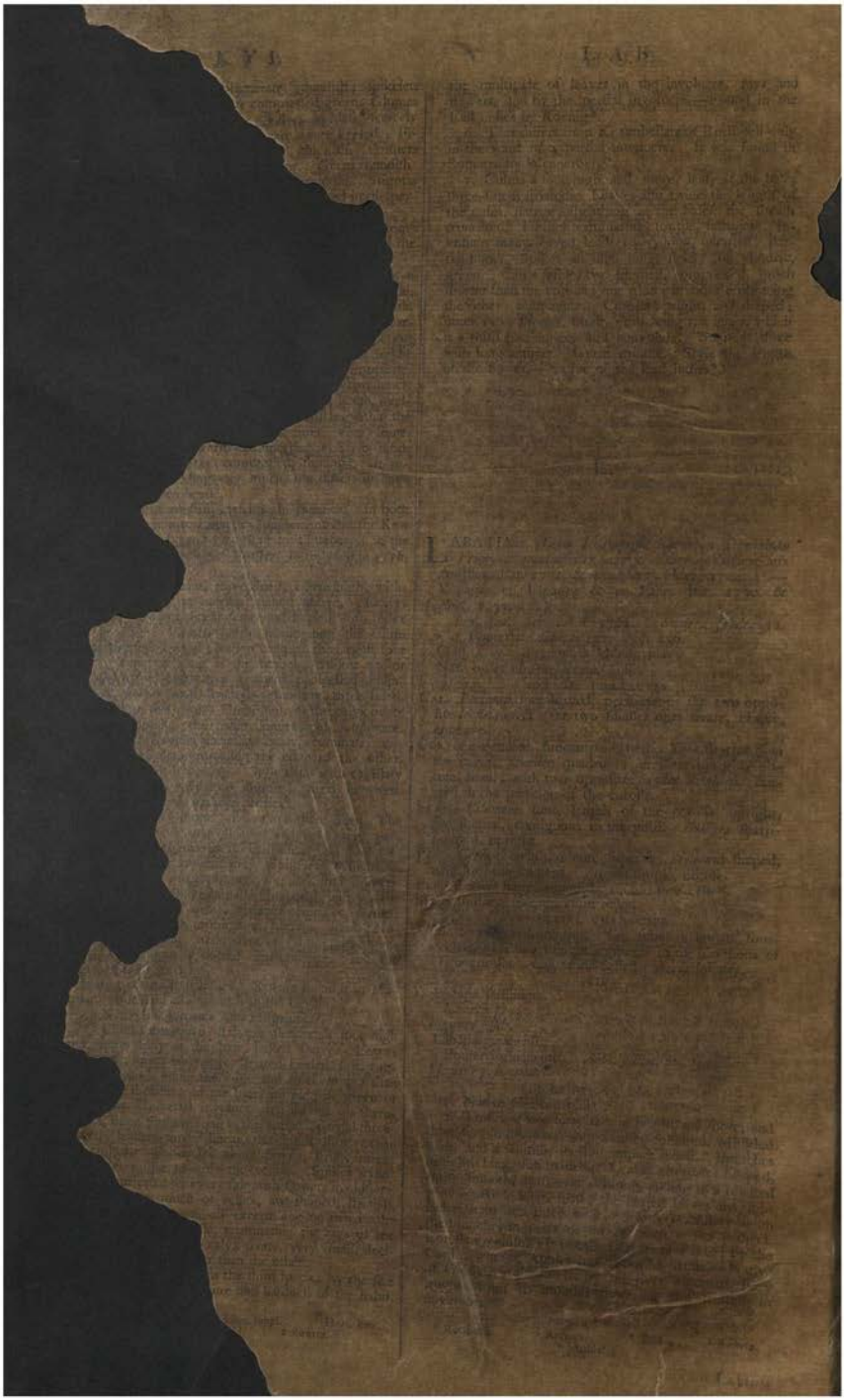
SPECIES.

* Spiraea chinensis.
Lin. Sp. Pl. 489. Retz. Obs. 4. 37. Willd. Sp. Pl. 2. 1188. Gærtn. Fruct. 2. 22. Pl. Asiat. Rar. 2. 18.

SPECIFIC CHARACTER.

The whole plant is smooth. The stem has the appearance of being jointed, about a cubit's length, somewhat angular, with very few branches, opposite to the leaves, and purplish when young. *Leaves* alternate, [illegible] from three to nine, [illegible] pinnate, [illegible] the pinnæ of Pellitory), quadrifarious, [illegible] serrated. *Petioles* [illegible] channelled, very short. *Stipulæ* [illegible] subulate, very many, [illegible] pedicelled, [illegible] with one and three flowers. Native of Tartary, where it was found by Koenig in 1787; it closely resembles Spiraea Aruncus, but the [illegible] Introduced in 1779 by Sir Joseph Banks. Flowers in April.

* Spiraea Filipendula.
*Lin. Sp. Pl. 489. Willd. Sp. Pl. 2. 1188. Fl. Dan. t. 1. Engl. Bot. t. 1. Fl. Brit. 563. Fl. Dan. t. 1. Fl. Brit. 563. Engl. Bot. t. 1. Fl. Dan. t. 1. Engl. Bot. t. 1. Fl. Brit. 563



LILIUM VENERIL. See *Digitalis*.
LIMEUM. See *Daphne*.
LIMONIUM. See *Statice*.
LINARIA. See *Antirrhinum*.
LINARIA VENERIS. See *Digitalis*.
LINDERNIA. See *Vitex*.
LINGUA. See *Ruscus*.
LINOCNEMA. See *Knightia*.
LISE or GOOD LUCK. See *Gratia*.
LOCCA HERBA. See *Impatiens*.
LOCK-BARK. See *Daphne*.
LOCK-WOOD. See *Daphne*.
LOGANIA. See *Buddleia*.
LOMATIA. See *Embothrium*.
LONICERA. See *Caprifolium*.
LOPEZIA. See *Lopezia*.
LOPHIOLA. See *Conostylis*.
LOPHOSPERMUM. See *Maurandia*.
LOTUS. See *Anthyllis*.
LOTUS CORNICULATUS. See *Tetragonolobus*.
LOTUS SILIQUOSA. See *Tetragonolobus*.
LOTUS TETRAGONOLOBUS. See *Tetragonolobus*.
LOTUS URENS. See *Cytisus*.
LOTUS VESICARIA. See *Colutea*.
LOTUS VULNERARIA. See *Anthyllis*.
LOXOSTEMON. See *Cheiranthus*.
LUCERNA. See *Medicago*.
LUCERNA MARINA. See *Euphorbia*.
LUCERNA MARIS. See *Euphorbia*.
LUCERNA MARIS. See *Tithymalus*.
LUCERNA MARIS. See *Tithymalus*.
LUCERNA MARIS. See *Tithymalus

LAC

Chondrilla alcera. *Ded. prodr.* 637.—canulea. *Tabern. icon.* 178. *Bauh. hist.* 2. 1019. *Raii hist.* 327. *Ger.* 322. *emac.* 386. *Park. theat.* 785. *f.* cancellata Cicharo folio, & latifolia laciniata. *Bauh. pin.*

Leaves three-lobed, fingered, toothed upwards.

11. Lactuca sterilis.

Alliz. parad. 1. 623. *t.* 62. *f.* 1.

L. 100.8 is valde angulo folio. *Bauh. hist.* 2. 999.

L. folio oblongo acuto. *Bauh. pin.* 123.

Leaves oblong, halbed, sharp, toothed, the upper ones pinnatifid.

12. Lactuca muralis. *Fr.*

1. Rose pendulous, & hyp. [illegible] upright, retrorse usually more or less rose in bright sun [illegible] & free light, cylindrical, attenuated by its upper narrow end [illegible] Lower leaves [illegible] upper ones [illegible] [illegible] [illegible]

feed on its green leaves with impunity, yet when cattle and sheep, by accidentally devoured of better food, eat the leaves, many die suddenly. I shall not, may, and continues to flower a great part of the summer.

The wood, being very hard, is very useful in smaller works. The Indians are said to make small dishes, spoons and other domestic utensils out of the excrescences, or knots, of a tree, excavated and gently wrought over a gentle heat, which become hard and smooth. After several unsuccessful attempts to propagate it in England, Mr. Catesby procured plants of it in Jamaica, which arrived safe, and with little further success, till the year 1726, Captain Cornwall, then Governor of Providence, sent a number of plants to Mr. Collinson, which have since flowered in England, some smaller, and others with larger flowers, in July 1740, in Mr. Collinson's garden at Mill-hill.

According to the Rev. Dr. Dickson, it was introduced by Mr. Peter Collinson in 1736.

A specimen raised from seeds, sown in the open ground, flowered in the garden of Mr. Robert Barclay, at Bury Hill, Surrey, in July 1796. The flowers are produced in large terminal corymbs, and are of a pale purple colour. The leaves are opposite, ovate, entire, and smooth on both surfaces, on footstalks. Flowers in lateral or axillary corymbs, not accompanied, as those of the preceding are, by small and deeper coloured.

The varieties with pale and deep red flowers differ in their native state, the small humble of the two, not only produce the small brilliant flowers, but in greater abundance.

This also is reputed poisonous to sheep and cattle in North America, of which it is a native. Introduced in 1736, by Mr. Collinson?. Catesby says, it flowered at Peel, June 1743.

2. Glaucum Kalmia is much inferior in size to *latifolia*, rarely exceeding two feet in height. It is a native of Newfoundland, where it was discovered by Sir Joseph Banks. Cultivated in the Botanic Garden, Chelsea, in 1767. Flowers in June and July.

3. Hirta, Kalmia with the general appearance of *latifolia*, but differs in having the leaves, stalks, and flower-stalks hairy. The flowers are about the same size with those of the preceding, but of a deeper colour, and grow in corymbs. Native of Carolina. The sole specimen known, the stalk, leaves and calyx closely covered with hairy bristles. It was presented from Carolina to the botanic garden, by Mr. Watson, entirely void of blossom, and Kalmias several plants of it flowered about the middle of September.

KALMIA, *wood laurel.*

Wood flowers are the most charming ornaments in North America, and adorn upon the whole, if the plants are not removed. The seeds seldom germ in England, and those which are sent from America fail in the account a whole year before the plants appear, and are rarely more than a few plants. The late Mr. James Gordon was the first who succeeded in raising the plant from seeds. The plants that come from the seeds are more hardy to produce others, and come to flower much sooner.

The proper soil and culture of this shrub not being well understood in Mr. Miller's time, they were then but seldom in England.

They succeed best in a northern aspect, well sheltered, in a soil composed of loam and bog earth, in a

* Cassia. † Cassia is more erect. ‡ Cassia. § Half hardy. ‖ Dwarf Hardy. ¶ Cassia.

situation moderately moist and where the [illegible] perfectly pure.

The first sort, being very [illegible] flowers, [illegible] or green, is much [illegible] than the rest.

The mountain evergreen [illegible] cattle, and is poisonous [illegible]

The third is [illegible] requires [illegible]

The [illegible]

[illegible]

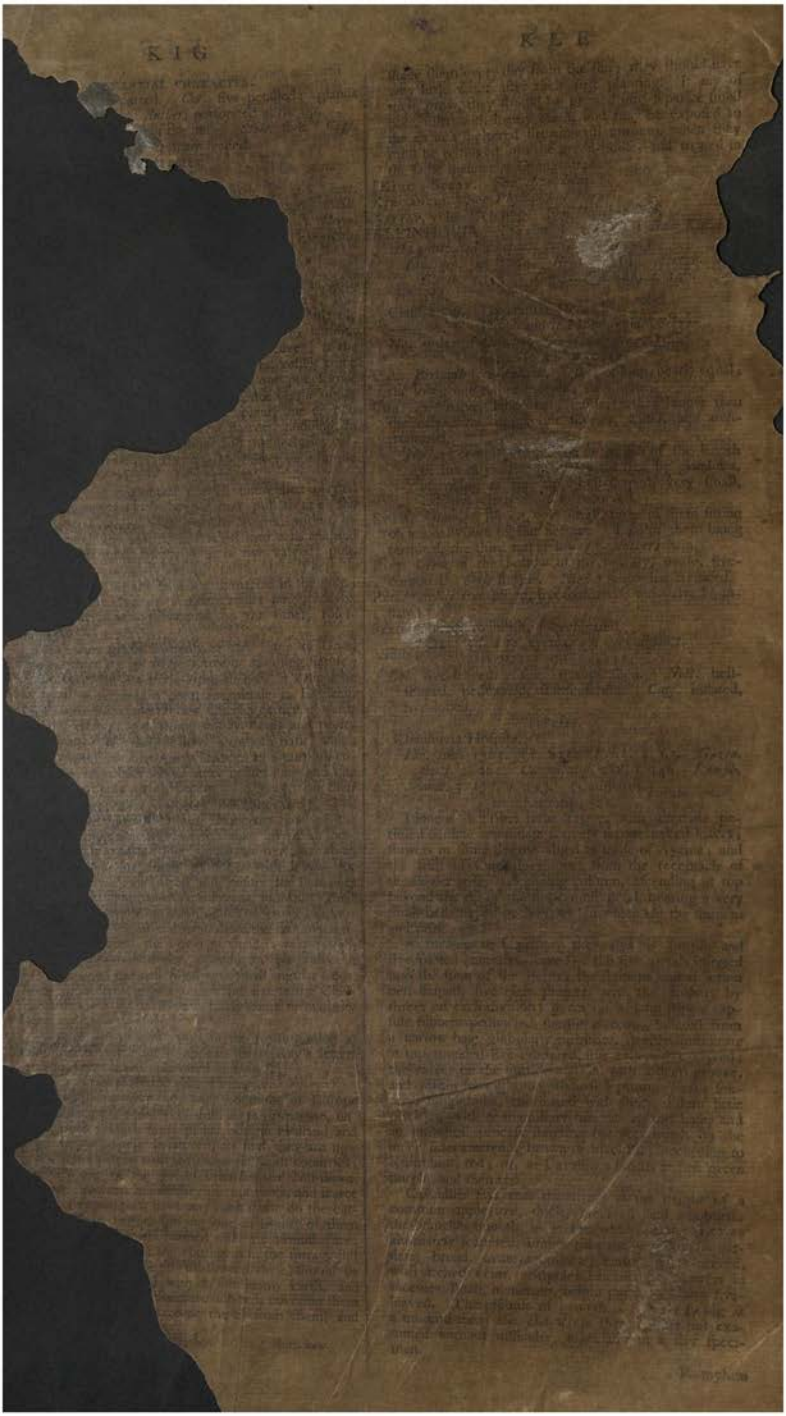
KALMIA [illegible]

KIGGELARIA. *Linn. Gen. Plant.* [illegible] Class and Order. Decandria Decagynia. Nat. order of Columniferæ [illegible] of Linné [illegible]

Gen. *Perianth* [illegible] five-leaved [illegible] Cor. *Petals* five, [illegible] claws, [illegible] the calyx, and forming [illegible] Nectary [illegible] Stamens [illegible] Pist. [illegible] Peric. [illegible] Seeds [illegible]

Spec. [illegible]

Cal. [illegible] Cor. [illegible] Pist. [illegible] Peric. [illegible] Seeds [illegible]



10. Red Canadian. 11. Roman. 12. Prince. 13. Royal. 14. Egyptian Cos.

(Garden) Lettuce is named in German *Gartensalat*. In Dutch *Tuinsla*. In French *La Laitue ordinaire*. In Italian *Lattuca*. In Spanish *Lechuga*. In Portuguese *Lactuca*.

3. Root biennial, very full of milky juice, as is every part of the plant. Stem upright, two cubits high, round, prickly, leafy, branched at the top into a single, close, prickly, leafy, terminating tuft of pale flowers. Leaves alternate, sessile, oval, prickly on the margin and the rib on the back, numerous, pale spines about an inch long, the uppermost deeply lobed and finned, those on the stem ranged perpendicularly, and not horizontally as in both others. Calyx smooth. Flowers small. Receptacle naked, pale, tow-coloured, smooth. Seeds ovate, somewhat flattened, oval, compressed, more or less brown, striated, crowned with a pale brown pappus, consisting of numerous, capillary, unequal bristles, and supported by a long, slender, pale, brown, striated footstalk.

The remotest leaves, gradually nearer and nearer to the stem, are more and more deeply lobed, and the lobes more and more pointed, till the uppermost are entire, lanceolate, and pointed. The flowers are small, and the plant is annual.

Native of the southern parts of Europe, with us in the Isle of Ely, on the borders of fields, as near Denny Abbey, &c.

4. Root biennial. Stem four or five feet high, prickly below. Root-leaves oblong, wedge-shaped, undivided, marked with prickles, embracing, obtuse, somewhat sinuated, finely toothed; floral-leaves sagittate, half embracing, most of the ear, terminating in a long point, and the base of each flowering branch. Flowers numerous, small, and pale yellow. Seeds flattened, and ribbed; very like those of L. sativa in all respects, except that the edges and keels near the top of the seed are rendered rough by very minute prickles.

According to Gerard and Hudson, this is a variety of the preceding, which though large, acrid and bitter in every organ, is scarcely much taller than, and not easily to be distinguished from L. virosa by its paler colour, its less spreading branches, and its narrower leaves.

Native of the meadows parts of Europe, by hedges, waste places, and borders of fields. In England, about Wrotham in Kent, Kingsland near the Bankside, Hackney between Bow and Walthamstow, Barnsbury and other places in Cambridgeshire, Old Ford, Bunhill, Tothill Fields, Marylebone, Oxfordshire, in a stone quarry at Tramp Arch in Yorkshire.

5. Scarious. Head as a variety of this.

Lettuce-vine, or the great Wall Lettuce, remains with a woody stock, of which the oldest parts are of very considerable strength, insomuch that the stem exhibited by Mr. Miller in the museum of the Chelsea Physic Garden was cut into planks, and used for the purpose of making a floor to a small room. When dried, the juice of this plant is said to be a powerful opiate, and is sometimes given in the form of extract in the quantity of a few grains, but it is not often employed for the purposes of medicine.

Dr. Cullen tried extensively the effects of this and of other species of lettuce, which were found by him to possess the virtues of opium, though in a much weaker degree. It is certainly a powerful narcotic, and may be used with advantage in many cases where opium is improper.

6. Leaves sinuate at the base, the lower pinnatifid, segments lanceolate, obtuse, sinuate, finely toothed, with a sharp point at the end. Stem upright, terminating one long, the upper ones many-flowered panicle. Flowers small, yellow. Seeds ovate, compressed, striated, crowned with a pale brown pappus, consisting of numerous, capillary, unequal bristles, and supported by a long, slender, pale, brown, striated footstalk.

Native of Canada. It was cultivated by Mr. Miller in 1759, and probably earlier at Chelsea Physic Garden. This bears a great resemblance to the preceding species with this in its lobby narrow leaves, but the leaves are [illegible] Indian Lettuce, the seeds are [illegible] more branched and [illegible].

Observed in the island of Java by Osbeck, [illegible] of other parts of the East Indies. [illegible] Sw. by Sir Joseph Banks, Bart.

7. Root perennial, composed of many [illegible] fibres, which abound with a milky juice, [illegible] partly to the ground. Stems several, [illegible] rising toward the top into several [illegible] leaves nine or ten inches long, nearly [illegible] pinnatifid to the middle, toothed on [illegible] the ends acuminate. Stem-leaves few, [illegible] Axe, clasp immediately below the [illegible] alternate entire. Flowers terminating [illegible] in pedunculus, [illegible] from two to [illegible] flower cathedra. Seeds [illegible] Clusius very [illegible].

Native of Germany, Italy, and France [illegible] 1683.

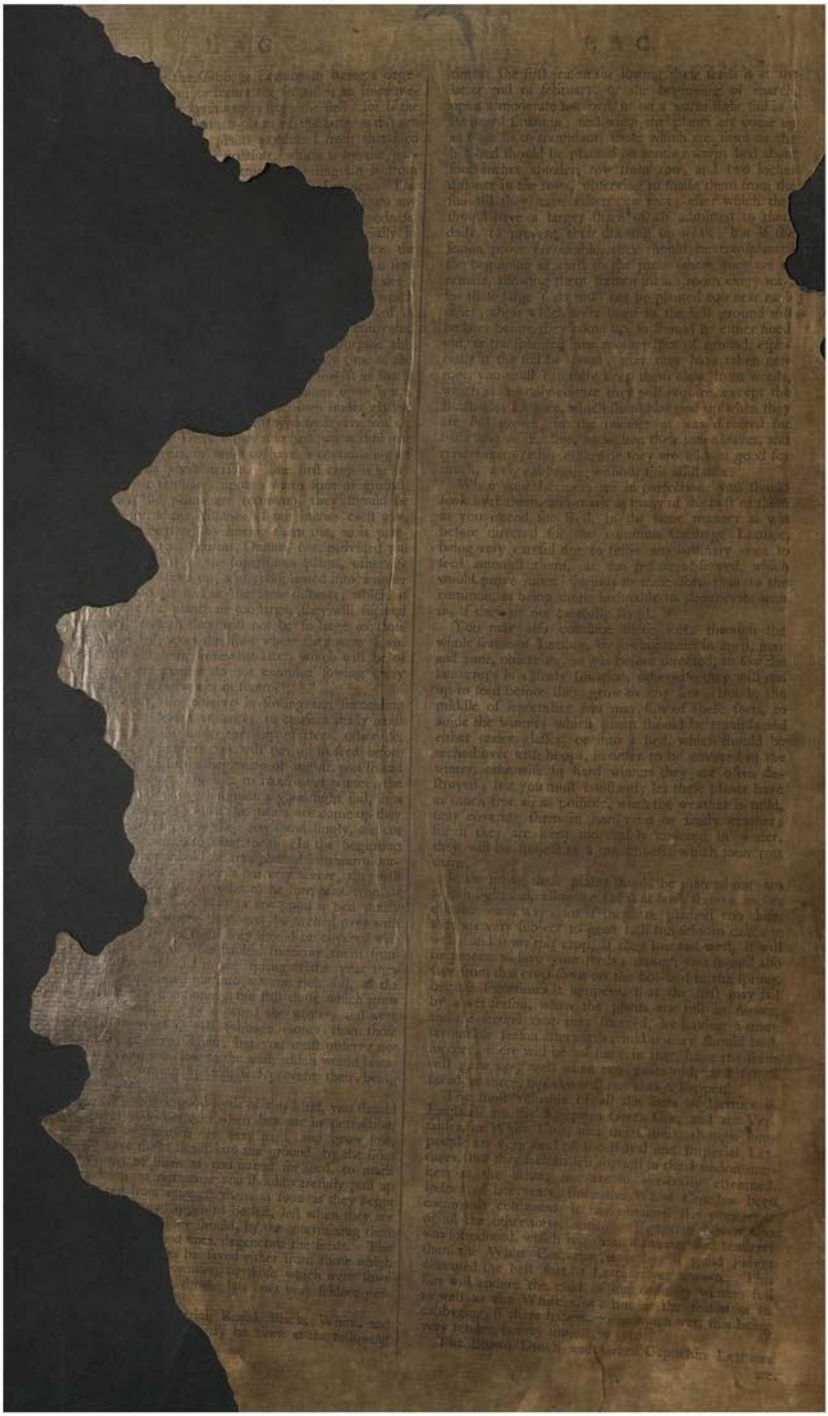
8. Root annual, fusiform. Stem [illegible] smooth, straight, very brittle [illegible] about the middle, branches [illegible] Leaves half-embracing, ear[illegible] very [illegible] base, the [illegible] with smaller [illegible] the lowest [illegible] deeply green colour, the upper ones [illegible] border, and some [illegible] toothed. Flowers [illegible] pedunculi and panicled. Petals [illegible] Seed dirty white. The whole plant [illegible] one valley, without any [illegible].

In sandy places by the sides of [illegible] the Great St. Bernard, and in the valley of Aosta [illegible] St. Pierre and Villeneuve.

Mont Villars has another species, which he [illegible] L'Chaix, because it was discovered by [illegible] According to him it is distinct from [illegible] Cichorium quadrangulare minus [illegible] some affinity to it. The leaves are [illegible] L. [illegible] sickings acuta, from [illegible] appear [illegible] but it is distinct from [illegible] at length.]

PROPAGATION AND [illegible]

The common Lettuce is [illegible] raising, to mix with other small [illegible]



as very hardy, and may be sown at the same season as was directed for the common Cabbage Lettuce, and are very proper to plant under a wall, or hedge, to stand the winter, where many times they will abide when most of the other lettuce are destroyed, and therefore they will prove very acceptable at this time when few other sorts are to be had; they will also endure the heat and drought in the most other sorts of Lettuce which renders them very proper for low sowing; for very often happens in very hot weather, that the other sorts of Lettuce will run up to seed in a few days after they are come up, whereas these will abide a month or more in good order, especially if care be taken to cut the forwardest only leaving those that are not half grown to be left.

If these plants of these two last sorts are planted under frames, so as to receive but little or no cherry, they will be fit for use in April, which will prove acceptable to those curious lovers of Lettuces, and bring a very good price, will render them tender to resist those frosts, the same care should be taken to preserve only such as are very large and well cabbaged, otherwise the pests will be in danger and be good for little.

The Red Capuchin, Roman, and Perpignan Lettuce are very proper sorts, and cabbage very much, so that a few of them may be preserved as may also some of the Aleppo, for the beauty of its spotted leaves; though very few people care for any of these last as table, when the other more valuable ones are to be obtained; but as a rarity, these may supply the place pretty well, and these sorts are very proper for sallad. The seeds of these must also be saved from such as cabbage well, otherwise they will degenerate, and be good for little.

In saving seeds of all these sorts of Lettuce, you should observe never to let the plants stand near each other, for by their large spreading they will both vary from their proper kind and partake of each other's and there should be a space allowed by the like of each, to which the plants should be allowed, to prevent their being broken, or blown out of the ground by wind, to which the Cabbage, Cos, and the other large growing Lettuces are very subject when they are in flower. You must also observe to cut such branches of the large growing Lettuce as open first, and not wait to have the seed of one whole plant ripe together, which never happens; but, on the contrary, some branches will be ripe a fortnight or three weeks before others, and when you cut them, they must be spread upon a paper, cloth, or any place, that the seeds may dry, after which you should beat them out, and dry them again, and clean them for use, being careful to keep them from mice and other vermin, who love these seeds as well as they do, they will soon devour them.

(The wild sorts are usually raised from seed. Propagated [illegible] parted at the roots, and may be increased by cuttings.)

LACTUCA. *Sea Lettuce, Purslane, Sow-thistle, Wall-lettuce.*] [*Lactuca Agrestis. Sea Lettuce.*]

[*Lactuca marina. Sea Grass. Gagea, or Lenten Rose.*]

[*Lactuca Marina. Sea Lettuce.*]

[*Lactuca Pinea. See Cornelia.*]

[*Lactuca Porcina. See Hedypnois.*]

[*Lactuca Tuberosa. See Arnica.*]

[*Lactuca Virosa. See Thridace.*]

[*Lactuca Vulgaris. See Lactuca.*]

[*Lactuca Zeylanica. See Lactuca.*]

LACTIS. *Cheese. Curd. Whey, from Yoke to Last. Of Astringent Quality.* Notion Orig. 1670.

Lac genus. Raii hist. n. 713. Tabern. p. 895. Lact. Dr. 167. Jam. mus. 167. Juss. 93.

Class. 12. *Polygamia Monœcia.*

Nat. order of *Floscules*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, lanceolate, oblong, erective, reflex, coloured, withering.

COR. *None*, or else five-petalled.

STAM. *Filaments* numerous, capillary, scarcely longer than the calyx. *Antheræ* roundish.

PIST. *Germ* oblong, ending in a [illegible] than the filament. *Stigma* headed, [illegible]

PER. *Berry* globular, [illegible] [illegible] linear, [illegible] [illegible] [illegible]

COR. *Petals* five, two-horned, shorter than the calyx.
STAM. *Filaments* five, capillary, length of the corolla. *Anthers* roundish.
PIST. *Germ* roundish, below the receptacle of the perianth. *Style* length of stamens. *Stigmas* two: the one truncated.
PER. none.
SEEDS solitary, ovate-oblong, crowned by the perianth.
OBS. *The alternate seeds is abortive.*

ESSENTIAL CHARACTER.

Involucrum universal and partial. *Perianthium* bifid. *Seeds* solitary, inferior.

SPECIES.

1. Lagoecia cuminoides. *Wild* or *Bastard Cumin.*
Lin. spec. 294. *syst.* 244. *Reich.* 1. 571. *hort. cliff.* 73. *upl.* 52. *mat. med.* 70. *Mayr. prodr.* 146. *Sabb. hort.* 4. *t.* 53. *Gærtn. fruct.* 1. 103. *Pluck. ic.* 153.
Cuminum sylvestre. *Dod. pempt.* 300. *Lob. adv.* 330. *Ger.* 908. *emac.* 1067. 1. *Park. theat.* 372. 3. *Raii hist.* 402. *Camer. epit.* 519. *Gesn. epist.* 50.
—capitulis globosis. *Bauh. pin.* 146.—primum valde odoratum globosum. *Bauh. hist.* 3. 23.
Umbelliferis affinis. *Mor. hist.* 3. *s.* 9. *t.* 13. *f.* ult. *Umb. t.* 1. *f.* 13.

DESCRIPTION, *&c.*

This is an annual plant, about a foot high. The leaves resemble those of Honeywort (Cerinthe). The flowers are collected into spherical heads at the extremity of the stalks, and are of a greenish yellow colour.
[The fruit is small, pedicelled, ovate-acuminate, crowned with a ciliate calyx, villose, one seed only ripening, the other abortive and fixed laterally to the apex of the other, like a withered scalelet. The fertile seed is of a dusky black colour, sprinkled all over with hoary villose hairs, convex on one side, with five capillary raised whitish streaks, flattish on the other, with three very slender streaks, marking out the place of the abortive seed; which is constantly and easily found, when the fruit is well softened in water*.
Native of the Levant. Cultivated in 1708, by the Dutchess of Beaufort. It flowers in june and july*.]

PROPAGATION AND CULTURE.

Sow the seeds in autumn on a warm border, soon after they are ripe; or if they be permitted to scatter they will come up of themselves. When the seeds are sown in the spring, they commonly remain in the ground a year, and sometimes two or three years before they grow.

LAGOPUS. See *Trifolium.*

[LAGUNÆA. (*From Andreas Laguna, a Spanish physician and botanist in the fourteenth century. He translated Dioscorides into Spanish with comment, and wrote several treatises on plants and medicine.*)
Lin. gen. Schreb. n. 1128.
Lagunea. *Cavan. diff.* 3. 173. *t.* 71. *f.* 1. *Juss.* 272.
Solandra. *Murr. in comm. gott.* 1784. *p.* 21. *t.* 1. *Cavan diff.* 2. 55.
Triguera. *Cavan. diff.* 1. 41.
Class. 16. 6. Monadelphia Polyandria.
Nat. order of *Columniferæ—Malvaceæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-shaped, somewhat cornered, half-five-cleft, permanent. (deciduous, *Cav.*)
COR. *Petals* five, ovate-oblong, outside spreading, affixed to the base of the tube of the stamens.
STAM. *Filaments* several, (25—30), conjoined into a tube below, in the top and sides of the tube receding from it and free. *Anthers* roundish.
PIST. *Germ* ovate-oblong. *Style* thread-shaped, longer than the stamens, five-cleft at the tip: *divisions* spreading; (or undivided.) *Stigmas* headed.
PER. *Capsule* ovate-oblong, somewhat five-cornered, five-celled, five-valved: *partitions* contrary.
SEEDS some, roundish-three-sided.
OBS. Solandra. *Murr. Cal. five-cleft. Stigmas five.*
Lagunea. *Cav. Cal. five-toothed, bursting on one side. Stigma one to five-rayed or five-toothed.*

The genus Hibiscus *shews that folia and bractea be conjoined when separated.*

ESSENTIAL CHARACTER.

Cal. simple, five-cuped. *Style* [illegible]. *Stigma* pel-tated. *Capsule* five-celled, five-

SPECIES.

1. Lagunæa aculeata. *Prickly La*
Cavan. diff. 3. 173. *t.* 71. *f.*
Stem prickly-tomentose, leaves deeply an
axillary, solitary.
2. Lagunæa Solandra. *Maple-leaved Lag*
Solandra lobata. *Murr. in comm. gott.*
t. 1. *Cavan. diff.* 2. 55. & 5. 279.
Triguera acerifolia. *Cavan. diff.* 1. 41.
Hibiscus Solandra. *Ait. hort. kew.* 2. 4
Forsk. descr. 103. *t.* 49.
Leaves subcordate three-cuped serrate, fl
bed.
3. Lagunæa ternata. *Three-leaved Lagunæa.*
Solandra ternata. *Cavan. diff.* 5. 279. *t.* 130.
Stem herbaceous villose, lower leaves ternate,
middle leaflet very long, upper leaves fi
flowers axillary, solitary.

DESCRIPTIONS, *&c.*

1. Stem round, tomentose, armed with small
prickles, somewhat branched, a foot and
Leaves alternate, shorter than the petioles,
divided into three or more serrate-toothed
the middle one more lengthened than the others
ing to be curled. Flowers on short peduncles.
tomentose, oblong-ovate, terminating in five very
awl-shaped points, bursting on one side to the
when the corolla expands, and deciduous.
yellow, twice as long as the calyx, spreading.
ments short, scattered over the whole surface of
tube. Stigma red, peltate, scarcely standing out
Capsule oblong-acuminate, five-cornered, tomentos
Seeds kidney-form, black. Native of Coromandel
near Pondicheri, where it is called *Cattacatheree* b
the inhabitants*.
2. This plant is about two feet high, and hi
Stem upright, round, stiff, the thickness of a
quill, hirsute with horizontal hairs, where the bra
spring knobbed. Branches many, from top to b
tom, alternate, spreading, subflexuose, red towa
the base on the inside, the lower about a hand
length, and more remote, the upper about
nearer, the internodes being scarcely an
Stipules in pairs, linear-awl-shaped, h
much, permanent, at the base of the p
ducles. Leaves roundish-cordate, und
five-nerved, convex, acuminate, three-lobed
the lowest leaves of the branches, which are u
vided, they are hirsute, hanging down
the apexes of the lobes recurved and entire, alternate
petioled: the uppermost very much wrinkled, an
sinuated between the lobes, those below the axils o
the stem very large. Petioles round, flatted a little
above, gibbous at the base, hirsute, spreading, as long
as the leaves. Flowers corymb-racemed at the ends
of the stem and branches. Peduncles at first close,
forming a sort of umbel and short, but afterwards
separating, and becoming in each in length
round, ending in a joint thicker at top. C
the length of the corolla, obscurely ten-angle
bescent, permanent, segments lanceolate, spr
bent in at top. Corolla purplish-white, truly
petalled, with a short cylindrical tube, limb five
parted, spreading, the parts ovate-oblong, blunt, so
what concave, marked with lines, obliquely co
at the base. Stamens somewhat shorter than
rolla. Stigma composed of five small
threads, and as many white villose
sule oblong, swelling with five fle
cled, smooth at the base, tomen
a point, five-celled, the valves
to the very base, lanceolate, acu
inside with the partition, the
echinate at the base and perm
a double row, black, and sub

* Gærtner. * Hort. kew. * Cavanilles.

According to Monf. L'Heritier, it has the habit of Napæa, and the root is annual. He joins it with Hibiſcus, becauſe it agrees in all points with that genus, eſpecially in the pericarp, and the ſimplicity of the calyx, not of itſelf ſufficient to make it of a diſtinct genus. See his deſcription, &c. under Hibiſcus Solandra.

Murray contrary makes it a *Solandra*, and has deſcribed it under the name of *Trigueria*, from Heros a Spaniſh botaniſt.

Found in the Iſle of Bourbon by Commerſon, introduced into the Paris garden about the year 1778, and into Kew garden in 1786 by Mr. Zier[t].

Linnæus Solandra, which is the ſame plant.

Root round, not very fibrous. Stems branched [illegible], herbaceous, a foot high, villoſe, as is the whole plant. Leaves diſtant, alternate, on filiform petioles, ſhorter than the leaf: lower ternate, with ovate-lanceolate unequal leaflets, the middle one very long: upper cordate, ſubhaſtate-lanceolate, longer, quite entire. Stipules ſhort, deciduous. Flowers lateral, ſolitary, pedunculed; peduncles longer than the petiole, ſlender, bright, jointed near the flower, thickened. Calyx deeply cut into five lanceolate very acute ſegments, [illegible] permanent. Capſule within the calyx, ovate-acuminate, with three ſeeds in each of the five cells. Seeds black, kidney-form, rugged, with very ſmall tubercles. Native of Senegal, where it was found by Adanſon[t].

PROPAGATION AND CULTURE.

The ſame with thoſe ſpecies of Hibiſcus which require hot houſe from hot countries. The ſecond ſort ripens the ſeeds in England, and may be increaſed by them.

LAGURUS. (*From λαγως, a hare, and ουρα, a tail.*)

Lin. gen. n. 92. *Reich. n.* 98. *Schreb. n.* 123. *Gaertn. t.* 1. *Juſſ.* 30.

Claſſ. 3. 2. Triandria Digynia.

Nat. order of *Gramina, Graminea* or *Groſſes.*

GENERIC CHARACTER.

Cal. *Glume* one-flowered, bivalve: *valves* long, linear, ſpreading, very thin, each ending in a villoſe *awn.*

Cor. bivalve, thicker than the calyx: *valve* exterior longer, terminated by *two* ſmall upright *awns*: *a third awn* from the middle of the back of the ſame valve, reflex-twiſted. *Valve interior* ſmall, ſharp.

Nectary two-leaved: *leaflets* lanceolate, obtuſe, gibboſe at the baſe. *S.*

Stamens three, capillary. *Anthers* oblong.

Piſt. *Germen* top-ſhaped. *Styles* two, ſetaceous, villoſe. *Stigmas* ſimple.

Per. *Corolla* grows to the ſeed.

Seed ſolitary, oblong, covered, awned.

ESSENTIAL CHARACTER.

Calyx two-valved, with a villoſe awn. *Cor.* having on the outer petal two terminating awns, and a third dorſal one twiſted back.

SPECIES.

1. Lagurus ovatus.

Lin. ſpec. 119. *Juſſ.* 23. *Reich. t.* 226. *hort. cliff.* 25. *muſ.* 20. *Gaertn. fruct.* 3. *t.* 1. *Schreb. gram.* 143. *t.* 19. *f.* 3. *Barr. ic.* 116. *f.* 1, 2. Alopecuros. *Ger.* 81. *emac.* 87.—genuina. *Park. theat.* 1166. *n.* 1.

Linnæan alopecuroides, ſpica rotundiore. *Bauh. pin.* 4. *theat.* 56. *Raii hiſt.* 1265. *n.* 6.

Spicatum tomentoſum longiſſimis ariſtis donatum. *Scheuch. gram.* 52.

DESCRIPTION, *&c.*

This is an annual graſs, growing to the height of a foot or eighteen inches, and even more, very ſoft and downy, as are alſo the leaves and ſpikes. Theſe are about two inches long and almoſt round, beſet with down of a pale ſtraw colour.—The corolla when ripe is ſhorter than the calyx, and proceeds the awns. Seed ovate, acuminate at both ends, on one ſide convex, ſmooth, on the other concave, with a longitudinal middle, bay-coloured[*].

A native of the ſouth of Europe, France, Italy, Sicily, Spain. Obſerved it in Narbonne, Italy about Naples, ſandy grounds, lower and ſmaller than is deſcribed above.—It was cultivated here in 1640, according to Parkinſon[†].

LAGURUS. See *Andropogon.*

Lagurus cylindricus. Imperata *Cyrill.* Arundo *Forſk.* See *Saccharum ſericeum.*

LAMB'S LETTUCE. See *Valeriana.*

LAMIUM (*of Pliny*: q. lamia larvata. *Lin.* *The flowers being ſhaped like a maſk.*—Quod ad lamas naſcatur. Diet. *from its growing in ſloughs.*)

Lin. gen. n. 716. *Reich. n.* 774. *Schreb. n.* 971. *Tournef. t.* 85. *Juſſ.* 113.

Orvala. *Lin. gen. n.* 715. Papia. *Mich.* 47.

Claſſ. 14. 1. Didynamia Gymnoſpermia.

Nat. order of *Verticillatæ.*—*Labiatæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, tubular, wider above, five-toothed, awned, nearly equal, permanent.

Cor. one-petalled, ringent. *Tube* cylindric, very ſhort. *Border* gaping. *Throat* inflated, compreſſed, gibbous, marked on each edge with a reflex toothlet.

Upper lip arched, roundiſh, obtuſe, entire. *Lower lip* ſhorter, obcordate, emarginate, reflex.

Stam. *Filaments* four, awl-ſhaped, covered beneath the upper lip, two of them longer. *Anthers* oblong, hairy.

Piſt. *Germ* four-cleft. *Style* filiform, length and ſituation of the ſtamens. *Stigma* two-cleft, ſharp.

Per. none. *Calyx* open, and bearing in its boſom the ſeeds, which are flat at top.

Seeds four, ſhort, three-ſided, convex on one ſide, truncated on both ſides.

ESSENTIAL CHARACTER.

Cor. upper lip entire, vaulted; lower two-lobed: throat with a reflex toothlet on each ſide.

SPECIES.

1. Lamium Orvala. *Beam-leaved Archangel.*

Lin. ſpec. 808. *Juſſ.* 534. *Reich.* 3. 48. *Allion. pedem. n.* 99. *Curt. magaz.* 172. *Krock. ſilef. n.* 924. *Mill. fig. t.* 158.

L. meliſſæfolium. *Mill. dict. n.* 5.

L. pannonicum. *Scop. carn. n.* 699. *t.* 27. *Ger. emac.* 793. *f.* 4.

L. maximum ſylvaticum alterum. *Bauh. pin.* 231. *Raii hiſt.* 561. *Mor. hiſt. ſ.* 11. *t.* 11. *f.* 7.

L. montanum faxatile ferme glabrum, flore amplo purpureo, labio inferiore crenulato. *Till. piſ.* 92. *t.* 34. *f.* 1.

Galeopſis maxima pannonica. *Clus. hiſt.* 2. 35. *t.* 36. *Park. parad.* 387. *f.* 7.

G. max. flore magno rubro. *Bauh. hiſt.* 3. 583.

β. Orvala garganica. *Lin. ſpec.* 807.

Papia garganica. *Mich. gen.* 20. *t.* 17.

Leaves cordate, unequally and ſharply ſerrate, corollas inflated at the throat, calyx coloured.

[2. Lamium levigatum. *Smooth Archangel.*

Lin. ſyſt. 534. *Reich.* 3. 48. *Hull. belg. n.* 270. *Krock. ſilef. n.* 926. *Pallas itin.* 3. 34. *Sabb. hort.* 3. *t.* 34. *Flak. phyt. t.* 198. *f.* 1.

L. purpureum non foetens, folio oblongo. *Bauh. pin.* 231.

L. rubrum. *Blackw. t.* 283.

Galeopſis flore purpurafcente majore, folio non maculato. *Bauh. hiſt.* 3. 721. *Raii hiſt.* 559. 2.

Leaves cordate ſerrated, ſtem even, calyxes ſmooth, the length of the tube of the corolla.

3. Lamium rugoſum. *Wrinkled Archangel.*

Ait. hort. kew. 2. 297.

L. ſubrotundo rugoſo folio, flore rubro. *Boec. muſ.* 35. *t.* 23.

Leaves cordate acute wrinkled, hairy with the ſtem, whorls many-flowered, a ſingle briſtle-ſhaped tooth at the throat.]

4. Lamium garganicum. *Woolly Archangel.*

Lin. ſpec. 808. *Juſſ.* 534. *Reich.* 3. 49. *Till. piſ.* 93. *t.* 34. *f.* 2. *Act. ſuec.* 1717. 272. *t.* 9. *Tourn. jap.* 246. *Lour. cochinch.* 365. *Krock. ſilef. n.* 925.

Leaves cordate pubeſcent, throat of the corolla inflated, tube ſtraight, a double tooth on each ſide.

[5. Lamium

[illegible] vanilles. * Gærtner. † Hort. kew.

[5. Lamium maculatum. *Spotted Archangel.*
Lin. ſpec. 809. *ſuſt.* 534. *Reich.* 3. 49. *mant.* 411. *Leers herborn. n.* 448. *Villars dauph.* 2. 382. *Krock. ſileſ. n.* 927.
L. alba linea notatum. *Bauh. pin.* 231. *Raii hiſt.* 560.—& maculatum. *Bauh. pin.* 231.
L. Plinii montanum Campoclarenſium. *Col. ecphr.* 1. 190. *t.* 192. *Park. theat.* 606. *n.* 6.
Leaves cordate acuminate, whorls ten-flowered.]
6. Lamium album. *White Archangel*, or Dead Nettle.
Lin. ſpec. 809. *ſuſt.* 534. *Reich.* 3. 50. *hort. cliff.* 314. *fl. ſuec. n.* 520. *mat. med.* 149. *Hudſ. angl.* 255. *Wither. arr. ed.* 3. 526. *Lightf. ſcot.* 308. *Curt. lond.* 2. 45. 115. *Relh. cant. n.* 430. *Hall. helv. n.* 271. *Scop. carn. n.* 700. *Pollich. pal. n.* 555. *Neck. gallob.* 252. *Fl. dan. t.* 594. *Allion. pedem. n.* 103. *Villars dauph.* 2. 384. *Krock. ſileſ. n.* 928. *Blackw. t.* 33. *Zorn. ic.* 80. *Berg. phyt.* 161. *Fl. ruſſ. t.* 26. *Ger.* 566. *emac.* 702. 1. *Raii hiſt.* 559. *ſyn.* 240.
L. alb. non foetens, fol. oblongo. *Bauh. pin.* 231.
L. vulgare alb. ſ. Archangelicum flore albo. *Park. theat.* 605 3.
Galeopſis. *Cam. epit.* 865. *Riv. mon. t.* 62. *f.* 1.—ſ. Urtica iners, floribus albis. *Bauh. hiſt.* 3. 322.
Urtica iners, ſ. L. primum. *Dod. pempt.* 153. 1.
Leaves cordate acuminate ſerrate petioled, whorls twenty-flowered.
[7. Lamium biſidum.
Cyrill. neap. 1. 22. *t.* 7.
L. parvum, flore albo, cum labio ſuperiori biſido. *Till. piſ.*
Leaves cordate acuminate, upper lip of the corolla biſid, ſegments divaricated.]
8. Lamium purpureum. *Purple Archangel.*
Lin. ſpec. 809. *ſuſt.* 534. *Reich.* 3. 50. *hort. cliff.* 314. *fl. ſuec. n.* 521. *Hudſ. angl.* 255. *Wither. arr. ed.* 3. 527. *Lightf. ſcot.* 309. *Curt. lond.* 2. 42. *Relh. cant. n.* 431. *Hall. helv. n.* 272. *Scop. carn. n.* 701. *Pollich. pal. n.* 556. *Neck. gallob.* 252. *Fl. dan. t.* 523. *Allion. pedem. n.* 104. *Villars dauph.* 2. 385. *Krock. ſileſ. n.* 929. *Berg. phyt. t.* 119. *Fl. ruſſ. t.* 25.
L. purp. foetidum, fol. ſubrotundo. *Bauh. pin.* 230. *Mor. hiſt. ſ.* 11. *t.* 11. *f.* 9.
L. rubrum. *Ger.* 568. 4. *emac.* 703. 3. *Raii hiſt.* 559. *ſyn.* 240.
L. vulgare folio ſubrotundo flore rubro. *Park. theat.* 605. 1. & 587. 11.
Galeopſis minor. *Riv. mon. t.* 62. *f.* 2.
G. 2. *Tabern.* 545.
Urtica iners altera. *Dod. pempt.* 153. 2.
Leaves cordate blunt petioled.
[9. Lamium diſſectum. *Cut-leaved Archangel.*
Wither. arr. ed. 3. 527.
L. purpureum β. *Hudſ. angl.* 255.
L. hybridum. *Villars dauph.* 1. 251. 2. 383.
L. rubrum minus foliis profunde inciſis. *Raii ſyn.* 240. *hiſt.* 560. *Pativ. brit. t.* 33. *f.* 3. *Pluk. phyt. t.* 41. *f.* 3.
Leaves deeply and irregularly cut, ſtem-leaves decurrent.
10. Lamium molle. *Pellitory-leaved Archangel.*
Ait. hort. kew. 2. 297.
L. parietariæ facie. *Mor. hiſt.* 378.
Leaves petioled, ſlightly toothed, lower cordate, upper ovate.
11. Lamium amplexicaule. *Perfoliate Archangel.*
Lin. ſpec. 809. *ſuſt.* 534. *Reich.* 3. 51. *hort. cliff.* 314. *fl. ſuec. n.* 522. *Hudſ. angl.* 255. *Wither. arr. ed.* 3. 527. *Lightf. ſcot.* 309. *Curt. lond.* 2. 46. 109. *Relh. cant. n.* 432. *Hall. helv. n.* 273. *Scop. carn. n.* 702. *Gron. virg.* 66. 89. *Neck. gallob.* 252. *Fl. dan. t.* 752. *Pollich. pal. n.* 557. *Allion. pedem. n.* 105. *Villars dauph.* 2. 384. *Krock. ſileſ. n.* 930. *Berg. phyt.* 163.
L. folio caulem ambiente majus & minus. *Bauh. pin.* 231. *Raii hiſt.* 560. *ſyn.* 240. *Mor. hiſt. ſ.* 11. *t.* 11. *f.* 12. *Pativ. brit. t.* 33. *f.* 4.
Galeopſis fol. caulem ambiente. *Rivin. mon. t.* 63.
Morſus gallinæ fol. hederulæ alterum. *Lob. ic.* 1. 463. 2.
Aſſine hederula altera. *Ger.* 493. 4. *emac.* 616. 4.
A. hed. folio major. *Park. theat.* 762. 2.
Floral leaves ſeſſile embracing blunt.
12. Lamium multifidum.
Lin. ſpec. 809. *Reich.* 3. 51. *hort. cliff.* 315. *Pallas. itin.* 1. 168.
L. orientale, fol. eleganter laciniatis. *Tournef. cor.* 11. *Comm. rare t.* 26.
Leaves many-parted.]
13. Lamium moſchatum. *Muſky Archangel.*
Mill. dict. n. 4.
L. orientale, nunc moſchatum, nunc foetidum, magno flore. *Tournef. cor.*
Leaves cordate blunt ſmooth, floral leaves ſeſſile, calyx deeply goſhed.

DESCRIPTION, *&c.*

1. [Root perennial. Stem from half a yard to almoſt a yard in height, hiſpid, branched, hollow, upright, frequently tinged with red towards the bottom. Leaves petioled, acuminate, veined, often red underneath, ſmooth and ſhining above. Whorls diſtant, from ſix to twelve or fourteen-flowered. Calyx ſeſſile, much wider than the tube of the corolla, ſmooth except at the edge and along the nerves, where it is villoſe. Corolla an inch long, of a deep red colour: tube ſtraight, cylindric, pale: upper lip obſcurely ſerrate or entire, ciliate: throat wide, marked with purple lines: lower lip trifid or rather biſid, emarginate, ſpotted, ſerrulate; the lateral ſegments bent down and dotted. The ſmell of the plant is very ſtrong and unpleaſant[a]: but the ſize and brilliant colour of the flowers have ſecured it a place in the garden, which no other ſpecies of this genus has a claim to.
Native of Italy, Sileſia, Hungary.—Cultivated in 1629[b], according to Parkinſon, who names it Hungary Dead-Nettle, or Dragon Flower.
β. Orvala garganica is a mere variety of this, owing its apparent difference to having grown in a moiſt ſhady place[c].
2. Root perennial, ſomewhat creeping. Stems purple, a foot high and more, almoſt upright, brittle, little if at all hirſute, branched. Root-leaves on very long petioles, floral leaves on very ſhort ones or none, petioles of the ſtem-leaves of a middling length, all ſerrate, ſcarcely pubeſcent, acuminate, not ſpotted. Whorls of flowers ſeparated by leaves, ten in a whorl at moſt. Calyxes ſmooth or very ſlightly pubeſcent, veined, the teeth ending in an awn or briſtle, the upper one more upright, the lower ones bent down, the middle ones ſtraight, all double the length of the belly. Corollas more than half an inch long, three lines wide, upright: upper lip blunt, ſlightly pubeſcent, bright purple and convex on the outſide; concave, white and ſmooth on the inſide: tube ſhort, curved inwards: throat wide, frequently ſprinkled with red dots: lower lip purple, round, ſpreading, ſerrate, ſmall, ſeldom bent back at the ſides[d]. Linnæus obſerves that the calyx reſembles that of the preceding.
Native of Italy, Sileſia, Siberia.—Introduced in 1775 by Drs. Pitcairn and Fothergill[e].
3. This plant is about a foot high. The flowers are larger than thoſe of the common ſort, and of a deep roſe-colour. Sometimes in cold ſituations it produces curled leaves, round like thoſe of the Lime-tree[f]. Native of Italy. Cultivated 1766, in the botanic garden at Oxford[g].]
4. Root perennial, creeping. Stems many, thick, a foot high. Leaves on long petioles. Flowers in whorls from the upper joints, large, of a pale purpliſh colour, continuing in ſucceſſion moſt part of the ſummer.
[Stems pubeſcent. Leaves bluntiſh, ſublobate and ſerrate, pubeſcent, but not rugged. Whorls many-flowered. Tube of the corolla ſtraight, [illegible] curved at the baſe as in the others. Upper lip [illegible]-toothed, ſpreading, not compreſſed[h].

[a] Krocker. [b] Hort. kew. [c] Linn.
[d] Krocker. [e] Hort. kew. [f] Boccone.
[g] Hort. kew. [h] Linn.

Loureiro

Loureiro describes the stem as perennial, upright, and three or four feet high; the leaves as unequally notched; the flowers as white-purple, in whorled spikes, with the upper lip entire, and the lower two-lobed.

Native of Italy, Silesia, China, Cochinchina and Japan.—Cultivated in 1729, by Mr. Miller[1].

5. This is very nearly allied to the next sort, or common White Archangel. It differs from it in having a purple corolla, the leaves marked with a longitudinal white area, which however disappears in summer; the petioles not widened; flowers five on each side, not ten; two teeth on each side of the throat, the upper one bristle-shaped[2].

Villars remarks, that the leaves vary much in their size and manner of notching, and that they are not always acuminate, but even blunt: the calyx also varies, being sometimes smooth, sometimes villose. He even doubts whether this, the Orvala and lævigatum be distinct species.

Native of Germany, Silesia, Dauphiné, Italy.

6. Root perennial, white, jointed, creeping. Stems numerous, a foot high, upright, unbranched, slender at bottom, hollow, slightly hairy, sometimes almost smooth; in exposed situations reddish purple; the young shoots weak and ascending. Leaves resembling those of the great stinging Nettle, unequally serrate; the tips of the little teeth red, and turned inwards, somewhat hirsute on both sides: the uppermost frequently coloured; those about the root often small, round and crenated. Petioles broader at the base, longer on the leaves next the root. Flowers in whorls, from ten to twenty together, yellowish white, sometimes tinged with red. Calyxes sessile, ribbed, hirsute, slightly decangular, with setaceous teeth, on the lower side at bottom marked with purple spots, and supported by a short linear bractea. Corolla twice as long as the calyx; tube nearly the length of the upper lip and crooked, anteriorly prominent below, and pressed in above; on each side the throat there are generally two little teeth; upper lip hairy, with a slight notch, and sometimes indented, distinguished by two elevated lines, which unite at the crown; lower lip bifid, turned back, slightly notched, and spotted at bottom. Filaments villose at top, a little thickened, and bent inward. Anthers dark blackish purple, with yellow pollen. Germ surrounded by a gland. Seeds three-cornered, with a little appendage at bottom[3].

It is common in hedges, on banks, and by road sides, and in corn fields; flowering in april and may, when it is much resorted to by bees, for the honey secreted into the bottom of the tube by the gland that surrounds the base of the germ[4]. Hence it is called in some counties *Bee-nettle*, which is corrupted into *Bean-nettle*. It has also the name of *Dea-nettle*, which is only a corruption of *Dead-nettle*, and that, as also *Blind-nettle*, means a Nettle without stings. In German it is *Taube Nessel:* in Dutch, *Dowe Netzl, Hondsnetel:* in Danish, *Doednelde, Dovenelde, Blindnelde:* in Swedish, *Blind nesla, Pigmesta:* in French, *Lamier, Lamion, Ortie blanche* or *morte, Archangelique:* in Italian, *Ortica morta* or *bianca:* in Spanish, *Ortiga muerta* or *blanca, Lamio blanco, Arcanjelica:* in Portuguese, *Ortiga morta* or *branca, Lamio branco.*

This plant has a disagreeable smell when bruised. Phalæna Chrysitis, or burnished-brass Moth feeds on it. Linnæus says, the leaves are eaten in Sweden as a pot-herb in the spring. No cattle, however, seem to touch it, and having a strong creeping perennial root, it should be extirpated, which is not difficult.

The flowers have been celebrated in uterine fluors, and also in disorders of the lungs. The bruised leaves have been recommended to discuss tumours. But it is discarded from modern practice.

7. Stems a foot or eighteen inches high, procumbent, tinged with red at bottom, and branched there; branches opposite, divaricating; middle stem higher than the rest, about one fourth of its height, has a pair of leaves with two barren calyxes; at the top three or four whorls. Leaves petioled, crenate, the notches after the fourth or fifth more deeply cut, lengthened out at the end, but blunt, slightly hirsute on the surface. Flowers in the upper whorls two together, almost an inch long, resembling those of the preceding in every thing except in the upper lip, which is divided into two revolute divaricate segments: the colour is white. The root-leaves are cordate, blunt and petioled. It flowers in february and march, is an annual plant, and a native of Italy near Naples, several places on the coast of Tuscany, and in the island of Elba. It may perhaps be a hybridous plant produced from the preceding and succeeding species[5].

8. Root annual, fibrous. Stems several, at bottom weak and branched, near the top almost naked, and frequently coloured, six inches or more in height, hollow, and somewhat rugged. Leaves veiny, slightly hairy or downy but not rough; the lower roundish-heart-shaped, notched, smaller, on longer petioles; the upper ovate-heart-shaped, bluntly serrate, on short petioles, growing close together, bent back and lying over each other, often of a reddish colour, especially at the ends. Petioles dilated at the base. Flowers growing thickly together on the tops of the stalks in whorls, six together in a double row. Calyx striated, hairy; teeth nearly equal, acuminate or awned. Corolla red, the lower border of the throat whitish with purple streaks; bright red in open situations, pale in the shade, and sometimes white: edge of the throat on each side furnished with two teeth, the uppermost pointed like a thorn, the lowermost blunter with a spot on it; the upper lip ovate, concave, slightly villose, entire; the under two-lobed, spreading a little and spotted. Seeds pale brown, triangular, truncate, margined.

This as well as the White Dead Nettle is common in most parts of Europe, in the same situations, and is a common weed in gardens and other cultivated land; flowering a great part of the year, from april to september, and in mild seasons both earlier and later. Bees resort also to this for the honey-juice in the flowers. According to Linnæus, it is boiled in Upland, a province of Sweden, as a pot-herb. The leaves and flowers have formerly been used in medicine, but are not regarded in the present practice[6].

The leaves vary much in form, size and toothing. Hence several varieties, one or two of which are considered by some as distinct species.

9. The leaves of this are deeply cut, so as almost to be lobed, and taper down into the foot-stalks[7]. Cultivated in a garden, it preserves its difference; and it is found with the preceding. It is annual, and not unfrequent, according to Ray in kitchen gardens and fallow fields[8]. Mr. Curtis observed it on a bank between Pimlico and Chelsea, and Mr. Robson about Darlington. Mont. Villars seems to regard it as intermediate between *purpureum* and *amplexicaule*. Mr. Miller's specimens are in the Banksian herbarium.

10. This is easily distinguished by the leaves being almost entire, neither serrate nor crenate. The flowers are white. Its native place is not known. It is perennial and flowers in april and may. Cultivated in 1683, by Mr. James Sutherland[9].

11. Root annual, fibrous, whitish. Stems several, nine inches or a foot high, nearly upright, smooth, with a few opposite branches. Lower leaves petioled, roundish heart-shaped, deeply crenate, veiny, slightly hairy; the petioles grooved on the upper part, and longer than the leaves; the upper ones semiorbicular, or in opposite pairs, broad heart-shaped, sessile, inclosing but not embracing the stem, with five scollopped lobes, the middle one at broad again, and with three leaflets at the end; the lateral ones small. Flowers in whorls, to fifteen, perfect and imperfect; the latter short, a little longer than the calyx, the tips very red, hairy and closed: the former four times the length of the calyx, bright purple, generally breaking out from the top of the stem. Calyx scarce manifestly striated; the teeth equal, acuminate, hirsute. The imperfect corollas are very hairy, of a bright red co-

[1] Hort. kew. [2] Linn. [3] Curtis. [4] Ibid.
[5] Cyrill. [6] Curtis. [7] Woodward. [8] Withering.
[9] Hort. kew.

lour, and have the mouth closed. The tube of the perfect ones is very long, cylindrical, and nearly upright: the edge of the throat is turned back, spotted, and has two little teeth; the neck is a little prominent; the upper lip hirsute and nearly entire; the lower turning down, and divided into two lobes, which are spotted with purple. Seeds covered with white spots and having a little appendage. These perfect flowers are like those of L. purpureum, but much longer.

The imperfect flowers appear in february and march; the perfect ones not till may or june: if the progress of the flowers be watched, it will be found that the corolla is gradually enlarged in different flowers, till the weather being sufficiently warm, they come forth fully formed. The imperfect flowers are neither rudiments of the long ones, nor are they barren, for they have both stamens and pistil. Linnæus informs us, that this plant scarcely ever produces perfect flowers in Sweden. Here then we have a process somewhat similar to what is observed in the Violet, and some other plants, in which perfect seed is produced, although the corolla be not perfectly formed; analogical to what happens in the animal kingdom, when a Caterpillar previous to its changing into the chrysalis state has been deprived of its proper quantity of food, the Fly comes forth perfect in all its parts except the wings, which are crumpled up and never extand.

This plant is common in most parts of Europe, in cultivated ground, on light soils, and on walls. The old name of it is *Great Henbit*.

12. Native of the Levant.]

13. Annual. Leaves marked with white, somewhat like those of the autumnal Cyclamen; they are smooth, and in dry weather have a musky scent, but in wet weather are fetid. Stems eight or nine inches high. Flowers white appearing in april. The seeds ripen in june.

[From Mr. Miller's specimens in the Banksian herbarium it seems to be a variety of Lamium album. The leaves are less acuminate, and the indentures are fewer and blunter.

PROPAGATION AND CULTURE.

Several of the species are considered as weeds rather than garden plants. The White Archangel propagates itself copiously by the roots, and the Purple by the seeds. Several which are here given as species, (2, 3, 5, 7, 9, 10, 13) are probably no more than varieties, and will increase of themselves in the same ways.]

1. Baum-leaved Archangel rarely produces good seeds in England, nor do the roots propagate very fast. The best time to part and remove these roots is october, but they must not be transplanted oftener than every third year, if they are required to flower strongly. It is hardy, and thrives best in a soft loamy soil.

[According to Mr. Curtis, it grows readily, but flowering about the end of april, it is then apt to be injured, if cold winds prevail, unless it be placed in a sheltered part of the garden.]

4. This may be propagated by seeds, but as the roots spread greatly, when it is once obtained it will spread fast enough.

[LAMIUM. See *Galeopsis*, *Galeobdolon*, *Melittis*, *Prasium*, *Scrophularia*, *Scutellaria*, *Stachys*.]

LAMPSANA. See *Crepis*, *Hyoseris*, *Lapsana*.

[LAMPUJUM. See *Anomum Zerumbet*.

LANARIA, (*of Pliny, woolly or wool-bearing.*)

Lin. gen. Schreb. n. 1745. *Alt. hort. kew.* 3. 510.

Argolasia. *Juss.* 60. (ἀργὸς λευκὸς, *albus hirsutus.*)

Class. 6. 1. Hexandria Monogynia.

Nat. order of *Ensatæ*. *Irides*, Juss.

GENERIC CHARACTER.

CAL. none.

COR. one-petalled, subcampanulated, outwardly woolhaired. *Tube* short. *Border* six-parted: *divisions* linear-lanceolate, somewhat spreading.

STAM. *Filaments* six, filiform, shorter than the corolla, inserted into the base of the divisions. *Anthers* ovate, somewhat incumbent.

PIST. *Germ* inferior, top-shaped, outwardly woolly. *Style* filiform, upright, length of the stamens. *Stigmas* three-cleft.

PER. *Capsule* ovate, three-celled.

SEEDS few.

ESSENTIAL CHARACTER.

Cor. superior, woolly, longer than the filaments; border six-parted, somewhat spreading. *Caps.* three-celled.

SPECIES.

1. Lanaria plumosa. *Woolly Lanaria.*

Alt. hort. kew. 1. 462.

Hyacinthus lanatus. *Lin. spec.* 455. *Reich.* 2. 81.

DESCRIPTION, &c.

Root fibrous. Herb woolly, upright. Stem-leaves sessile, nerved, smooth. Flowers terminating, in a close panicle. Spathes simple. It has the habit of *Wachendorfia**.

Native of the Cape of Good Hope. Introduced in 1787, by Mr. Francis Masson*.]

LANIFERA ARBOR. See *Bombax*.

LANTANA, (a texture, *from the pliableness of the branches.*)

Lin. gen. n. 765. *Reich. n.* 824. *Schreb. n.* 1026. *Gertn. t.* 56. *Juss.* 109. *Medic. alt. palat.* 3. *phys. t.* 16. Camara. *Plum.* 2. *Dill. elth.* 56, 57. (The Brasilian name). Morobatinelum. *Vaill. alt. gall.* 1722.

Class. 14. 2. Didynamia Angiospermia.

Nat. order of *Personatæ*. *Verbenæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, very short, converging, obscurely four-toothed, tubular.

COR. one-petalled, nearly equal. *Tube* cylindric, slender, longer than the calyx, rather oblique. *Border* flat, unequally four-cleft, obtuse.

STAM. *Filaments* four, very small, placed in the midst of the tube of the corolla, very slender, of which two are a little higher. *Anthers* roundish.

PIST. *Germ* roundish. *Style* filiform, short. *Stigma* refracted, sharp downwards like a hook, and as it were obliquely growing to the tip of the style.

PER. *Drupe* roundish, one-celled.

SEED. *Nut* round-pyramidal, three-celled: the lowest cell sterile. *Kernels* solitary, oblong.

OBS. *The involucre is many-leaved; the common receptacle of the fructifications oblong; collecting the flowers which are often very unequal.*

ESSENTIAL CHARACTER.

Cal. obscurely four-toothed. *Stigma* hook-refracted. *Drupe* with a two-celled nucleus.

SPECIES.

[1. Lantana nivea. *Various-flowered Lantana.*

Lin. syst. 566. *Reich.* 3. 164. *Medic. alt. palat.* 3. 227. *Dill. elth.* 64. *t.* 56. *f.* 64. (Camara). *Comm. hort.* 1. 51. *t.* 53. (Viburnum).

Leaves opposite ovate acute hairy, stem prickly at bottom, flowers in roundish heads, bractes lanceolate.]

2. Lantana trifolia. *Three-leaved Lantana.*

Lin. spec. 873. *Reich.* 3. 164. *Swartz obs.* 236. *Brown. jam.* 268. 1. *Sloan. jam.* 2. 82. *t.* 195. *f.* 3. *Rait dendr.* 30. (Periclymenum). *Plum. gen.* 32. *ic.* 70. (Camara). *Vaill. alt. par.* 1722. 203. (Morobatinelum).

Leaves tern or quatern, elliptic, serrate, wrinkled above, villose beneath, stem unarmed, spikes oblong, imbricated.

[3. Lantana viburnoides.

Vahl symb. 1. 45.

Charachera viburnoides. *Forsk. descr.* 116.

Leaves opposite ovate-lanceolate, stem unarmed, flowers in headed spikes, involucres lanceolate.]

4. Lantana annua. *Annual Lantana.*

Lin. spec. 874. *Syst.* 566. *Reich.* 3. 165. *hort. upsal.* 180. *mant.* 419.

Leaves opposite and tern cordate rugged, stem unarmed, spikes oblong.

5. Lantana stricta.

Swartz prodr. 92. *Sloan. jam.* 2. 84. *t.* 195. *f.* 4. (Periclymentum).

L. angustifolia. *Mill. dict. n.* 10.

Leaves opposite oblong-lanceolate acute, stem unarmed, heads roundish, bractes ovate-lanceolate squarrose.

* Juss. * Hort. kew.

[6. Lantana Radula.
Swartz prodr. 92.
Leaves oppoſite ovate acute ſerrate wrinkled rough, hirſute beneath, ſtem almoſt unarmed rough, heads oblong, braëtes ovate acute.]

7. Lantara Camara. *Various-coloured Lantana.*
Lin. ſpec. 874. *ſyſt.* 566. *Reich.* 3. 165. *hort. cliff.* 349. *Swartz obſ.* 237. *Medic. in act. pal. vol.* 3. *phyſ. p.* 228. *Brown. jam.* 268. *n.* 2. *Sloan. jam.* 2. 83. *n.* 15. (Periclymenum). *Dill. elth.* 65. *t.* 56. *f.* 65. *Plum. gen.* 32. *ic.* 71. *f.* 1. (Camara). *Pluk. phyt. t.* 114. *f.* 4. (Viburnum).
Leaves oppoſite, ſtem unarmed branched, flowers headed-umbelled leafleſs.

[8. Lantana odorata. *Sweet-ſcented Lantana.*
Lin. ſyſt. 566. *Reich.* 3. 166. *Herm. prodr.* 384. (Viburnum). *Plum. gen.* 32, *ic.* 60. *t.* 71. *f.* 2. (Camara).
Leaves oppoſite and tern elliptic wrinkled, ſtem unarmed, heads ſquarroſe, braëtes lanceolate, peduncles ſhorter than the leaf.

9. Lantana recta. *Upright Lantana.*
Ait. hort. kew. 2. 351.
Leaves oppoſite oval wrinkled, ſtem unarmed, heads ſquarroſe, braëtes oblong, pedunles longer than the leaf.]

10. Lantana involucrata. *Round-leaved Lantana.*
Lin. ſpec. 874. *ſyſt.* 566. *Reich.* 3. 166. *amoen.* 4. 319. *Swartz obſ.* 238. *Medic. in act. palat.* 3. *phyſ.* 223. 273. *t.* 16. *Brown. jam.* 268. *n.* 3. *Sloan. jam.* 2. 39. *Raii dendr.* 31. (Periclymenum). *Plum. gen.* 32. *ic.* 71. *f.* 2. (Camara). *Pluk. phyt. t.* 114. *f.* 5. *Herm. prodr.* 384. (Viburnum.)

L. lanuginoſa. *Mill. dict. n.* 3.
Leaves oppoſite and tern rhomb-ovate blunt wrinkled tomentoſe, ſtem unarmed, heads ſquarroſe, braëtes ovate.

[11. Lantana meliſſæfolia. *Baum-leaved Lantana.*
Ait. hort. kew. 2. 352. *Dill. elth.* 66. *t.* 57. *f.* 66. (Camara).

L. flava. *Medic. act. pal.* 3. *phyſ.* 225.
Leaves oppoſite ovate-oblong villoſe ſoft, ſtem prickly, ſpikes hemiſpherical, braëtes ſhorter by half than the tube.

12. Lantana ſcabrida. *Rough Lantana.*
Ait. hort. kew. 2. 352.
Leaves oppoſite ovate-elliptic rugged, ſtem prickly, ſpikes hemiſpherical, braëtes ſhorter by half than the tube lanceolate acute.]

13. Lantana aculeata. *Prickly Lantana.*
Lin. ſpec. 874. *ſyſt.* 566. *Reich.* 3. 166. *hort. cliff.* 498. *upſ.* 380. *mant.* 419. *Gærtn. fruct.* 1. 267. *Medic. act. pal.* 3. *phyſ.* 231. *Brown. jam.* 269. *n.* 4. *Curt. magaz.* 96. *Vaill. act. par.* 1722. 203. (Morobatandum). *Pluk. phyt. t.* 233. *f.* 5. (Viburnum).
Leaves oppoſite ovate ſubcordate ſoftiſh underneath, ſtem prickly, braëtes of the heads linear-wedge-form.

[14. Lantana aurea. *Golden-flowered Lantana.*
L. ſplendens. *Medic. in act. pal.* 3. *phyſ.* 226.
Camara Scorodoniæ folio ſplendente, flore croceo. *Dill. elth.* 67. *t.* 57. *f.* 67.
Leaves ovate-oblong ſhining, ſtem obſcurely quadrangular almoſt unarmed, corollas golden changing to ſaffron-colour.

15. Lantana ſanguinea. *Bloody-flowered Lantana.*
Medic. in act. pal. 3. *phyſ.* 229.
Leaves ovate-acuminate, ſtem quadrangular prickly, corollas ſaffron changing to blood-red.]

16. Lantana inermis.
Mill. dict. n. 2. *Sloan. cat. jam.* 164.
Stem unarmed, leaves lanceolate toothed alternate, flowers in corymbs.

17. Lantana urticæfolia.
Mill. dict. n. 5. *Sloan. cat. jam.* 163.
Stem prickly, leaves oblong-cordate ſerrate oppoſite, flowers in corymbs.

18. Lantana bullata.
Mill. dict. n. 7. *Sloan. cat. jam.* 163.
Leaves oblong-ovate acuminate ſerrate wrinkled alternate, flowers in heads.

19. Lantana alba.
Mill. dict. n. 8.
Stem unarmed, leaves ovate ſerrate, flowers in axillary ſeſſile heads.

DESCRIPTIONS, *&c.*

[Theſe are moſtly ſhrubs, very few being herbaceous. The branches are quadrangular. The leaves oppoſite by pairs, except in a few caſes, where there are three or four together; ovate and wrinkled. Flowers aggregate in axillary and peduncled heads: each flower bracted.

1. This is about five feet in height. Trunk round or roundiſh, with an aſh-coloured bark. Branches at top, ſeveral, ſhort, aſh-coloured, and from theſe ſeveral others, a long ſpan or a foot in length, quadrangular, green, hairy. Leaves reſembling thoſe of Lamium album, above bright green and ſomewhat ſhining, beneath paler, deeply notched, much wrinkled, and very rugged. Whilſt the flower is yet cloſed, the lower part of the border appears of a pale red; when it opens, the tube and upper part of the border are ſaffron-coloured, but become reddiſh, and finally dark-red: this change of colour begins from the circumference and finiſhes in the centre. Hence the flowers in an umbel not being all opened at once, the middle appears of a ſaffron yellow, and the circumference of a red colour. From this change of colour and diverſity in the ſame umbel, this plant has obtained the name of *miſta* or *mixed*.

It differs from *L. aurea* in the leaves not being elliptic but acuminate, not ſlightly but deeply crenate, not even but much wrinkled, not dark green and ſhining very much, but pale green. The flowers alſo of that only change from a golden to a ſaffron colour; whereas theſe change from a ſaffron colour to a dark red [a].

Native of America. Cultivated in the Eltham garden before 1732.

2. Stem ſhrubby, branched, round, rugged: branches upright, round, rugged. Leaves petioled, three together ſeldom four, ovate-lanceolate, acuminate, nerved, the upper ſurface almoſt ſmooth, beneath ſomewhat hirſute, hoary. Spikes peduncled, ſubimbricate with lanceolate, entire, diſtinct and ſomewhat hirſute bractes; when young in a head, but afterwards an inch in length. Flowers pale blood-red and not changeable. Peduncles axillary, oppoſite, ſolitary, the length of the leaves, ſtriated, angular, hirſute. Calyx very minute, three-toothed, with the hinder tooth a little longer. Corolla ſalver-ſhaped, irregular: tube narrow, gibbous in the middle: border almoſt flat, oblique, four-cleft; upper ſegment almoſt upright, roundiſh; the lateral ones only half the ſize, ſpreading; the lower broader, waving; throat yellow. Anthers extremely minute, brownith green. Style the length of the tube. Fruit a berried drupe, red, roundiſh. Nucleus hard, two-celled [b].

Linnæus doubts whether this be ſpecifically diſtinct from *L. annua*, and Medicus does not ſettle the difficulty. It is clear however that this is a ſhrub.

Native of the Weſt Indies. Introduced before 1733, by William Houſtoun, M. D. (from the Havannah). His ſpecimen is in the Bankſian herbarium. It flowers from june to ſeptember [c].

Mr. Miller ſays, there is a variety with white flowers, and leaves not quite ſo round, entire on the edge.

[3. This is a ſhrub, with hairy, rugged branches. Leaves acute, ſerrate, wrinkled above, very rugged, ſoftly villoſe beneath, an inch and half long. Petiole dilated above. Peduncles oppoſite, the length of the leaves. Leaflets of the involucre lanceolate, a little ſhorter than the head. Corolla pubeſcent [d].

Native of Arabia, on mount Barah [e].

4. Stem hiſpid, quadrangular, ſtriated, ſomewhat woody. Leaves cordate, rugged, petioled, oppoſite but ſometimes three together. Spikes hemiſpherical, oppoſite, with lanceolate ſhorter bractes, and gradually lengthened out. Corollas fleſh-coloured, with a yellow throat, not changeable. Fruits purple.

Reichard is of opinion, that the plant deſcribed by Medicus (p. 222.) under the name of *Lantana trifolia*, is this ſpecies.]

It is an annual plant, riſing with a ſtrong, upright, rough ſtalk, near three feet high, dividing towards the

[a] Medicus and Dillenius. [b] Swartz. [c] Hort. kew. [d] Vahl. [e] Forſk.

top,

top, into two or three ereſt branches. Leaves ſerrate, by fours at each joint, a little woolly on their under ſide. Peduncles by pairs or three at a joint, from two to three inches long, ſuſtaining a thick ſpike of large purple flowers; which are ſucceeded by large, purple, ſucculent, eatable berries.

Sent by Dr. Houſtoun (before 1733) from La Vera Cruz, and received ſince from the north ſide of Jamaica. [Mr. Miller's ſpecimen is in the Bankſian herbarium.

5. Stem ſquare. Leaves very long and narrow, an inch and half in length, and one-third of an inch wide in the middle, toothed, of a dark colour above, whitiſh underneath, on their ſurface like thoſe of Sage, on very ſhort petioles. Peduncles axillary, two inches long.

Native of Jamaica, on mount Diablo [a]. Dr. Houſtoun ſent the ſeeds to Mr. Miller in 1730. The ſpecimen is in the Bankſian herbarium.

6. This is a ſhrub, native of the Weſt Indies [b]. It has its trivial name from the extreme ruggedneſs of the leaves.

7. Stem ſhrubby, a fathom in height, angular, ſomewhat rugged. Branches ſubdivided, almoſt upright, rugged, quadrangular. Branchlets quadrangular, grooved, ſtrict, hirſute, dark green. Leaves on long petioles, decuſſated, ſpreading, ovate, acuminate, ſerrate, nerved, hirſute. Flowers terminating. Peduncles ſhorter than the leaves, ſolitary, angular, grooved, hirſute. Bractes broad-lanceolate, concave, entire, pubeſcent. Calyx three-toothed, minute, the hinder tooth larger. Corolla funnel-form [c]: the tube and border at firſt pale ſulphur-coloured, changing to ſaffron, light red and pale crimſon [d]: tube round at the baſe, gibbous, widening towards the throat: border four-cleft, nearly equal; hinder ſegment almoſt upright, ſubcordate; lower broader, emarginate in the middle; the lateral ones entire, ſpreading, waved at the edge: throat contracted. Anthers minute, whitiſh. Germ oblong. Style ſhorter than the tube. Drupe the ſize of red Currants, black-green, with a nauſeous ſmell; nucleus two-celled [e].

Medicus doubted whether this were different from L. miſta or not, but after three years ſcrupulous obſervations he determined in the affirmative, from the difference in the leaves and colour of the flowers. The leaves in L. miſta are ovate-acuminate, deeply crenate, much wrinkled, rugged and pale green. In L. Camara they are more orbiculate, leſs crenate, ſofter, and dark green. The flowers of L. miſta become finally dark purple: thoſe of L. Camara are much paler, and change to tawny.

Native of the Weſt Indies. Cultivated in 1691, in the royal garden at Hampton Court. It flowers from april to ſeptember [f].

8. Leaves very much wrinkled, ſubtomentoſe. Bractes lanceolate [g].

Native of the Weſt Indies. Cultivated in 1758, by Mr. Miller. It flowers from may to november [h].

9. Native of Jamaica. Cultivated by Mr. Miller in 1758. It flowers from june to auguſt [i].

10. Stem round, woody, branched, ſcarcely hairy. Branches oppoſite. Leaves petioled, ſcarcely crenate, membranaceous, rigid, leſs wrinkled than in the others above, nerved beneath, tomentoſe. Leaves ſeldom if ever in threes. Peduncles ſhort. Spikes rounded. Bractes large, ſeſſile, cordate-ovate, with ſix or more nerves running in right lines from the centre, all a little excavated their whole length, and tomentoſe. Calyx very ſmall, whitiſh. Flowers of the ſame colour as in L. trifoliata, but the yellow colour of the throat ſoon changes to white; and hence the flower is whitiſh with a pale fleſh-coloured margin.

This ſpecies agrees in many reſpects with L. trifolia, as to the flowers: but in that the ſpikes are very long, the bractes ovate-lanceolate, the flower unchangeable; in this the ſpikes are ovate, the bractes cordate-ovate, the flowers changeable, with the throat whitiſh. In other reſpects they differ more eſſentially: for the ſtem of L. trifolia is ſquare; the leaves large, ovate-acuminate or lanceolate and ſerrate: whereas in L. involucrata the ſtem is round; and the leaves ſmall, orbiculate, and ſcarcely crenate [k].

Native of the Weſt Indies. Mr. Miller ſays, it was ſent him from La Vera Cruz by Dr. Houſtoun; but his ſpecimen in the Bankſian herbarium is marked Havana, 1731. It was cultivated here earlier, viz. in 1690, in the royal garden at Hampton Court. It flowers from may to july [l].

Scopoli thinks it not improbable that his *Zappania odoratiſſima* (Inſubr. 34. t. 15.) may be the ſame with this. But whether it be or not, he removes it from the genus Lantana, becauſe it is not didynamous, and has not either a four-toothed calyx, or a drupe for a fruit.

11. This is lower than moſt of the others, being ſeldom more than two feet in height. Stem round, aſh-coloured, not hairy. The younger branches have bundles of hairs ſpreading out at top. Leaves oppoſite, but ſometimes in threes, petioled, cordate-acuminate, more deeply crenate than in the other ſpecies; wrinkled, rugged and green on the upper ſurface; paler and tomentoſe-hairy underneath. Flowers axillary, with three peduncles, where there are three leaves. Bractes oblong, entire, tomentoſe-hairy, deciduous, differing in ſize. Colour of the corolla conſtant and always yellow [m].

Native of South America. Cultivated in 1732, by James Sherard, M. D. at Eltham [n].

12. Native of the Weſt Indies: where it was found by Mr. Gilbert Alexander. Introduced in 1774. It flowers in ſeptember [o].

13. Stem ten feet high, an inch and half thick, ſquare from top to bottom, armed with long, ſtrong, reflex prickles, or rather thorns, for they cannot be torn off without injuring the wood. Leaves ovate-oblong or cordate-oblong, wrinkled, rugged, crenate. Peduncles long, with fewer and ſhorter prickles. Colour of the tube of the corolla pale red: border lemon-coloured, changing into an orange and ſometimes deeper colour [p]. Drupe berried, ſoft, ovate, dark, very ſmooth, ſhining: fleſh pulpy, thin: ſtone bony, like a grape-ſeed, thick and blunt above, with two lateral lobules verging downwards, elongated below into a compreſſed conical beak; three-celled, the two upper cells fertile, the lower void. Seeds ſingle, obovate, remarkably acuminate downwards, compreſſed a little, white with a brown area at top [q].

Native of the Weſt Indies. Cultivated in 1692, in the royal garden at Hampton Court. It flowers from april to november [r].]

In our ſtoves it grows five or ſix feet high, and ſends out many branches. Leaves about an inch and half long, and three-quarters of an inch broad, hairy, on ſhort foot-ſtalks. Two peduncles ariſe from the axils, towards the ends of the branches, from each joint, one on each ſide; they are near two inches long, and are terminated by roundiſh heads of flowers; thoſe on the outſide are firſt of a bright red or ſcarlet, and change to a deep purple; thoſe in the centre are of a bright yellow, and change to an orange colour.

[14. Stem ſeven feet high, at firſt obſcurely quadrangular, but afterwards round, ſtriated, very thinly beſet with prickles, and not hairy. Leaves ovate-oblong or almoſt elliptic, bluntly notched about the edge, very ſhort ſtiff hairs at the upper ſurface, the lower rugged with a harſh down, dark green and ſhining as if they were varniſhed. Peduncles ſhort. Bractes deciduous, ſhort. Colour of the flower yellow, becoming golden and then ſaffron-coloured.

It differs from L. trifolia and involucrata in having oblong deciduous bractes, in the colour of the flowers, the form and ſplendour of the leaves; from L. meliſſæfolia in having the leaves ſhining and ſcarcely crenate, the flowers of a deeper dye and more changeable [s].

[a] Sloane. [b] Swartz. [c] Ibid. [d] Medicus. [e] Swartz. [f] Hort. kew. [g] Linn. [h] Hort. kew. [i] Ibid. [k] Medicus. [l] Hort. kew. [m] Ibid. [n] Medicus. [o] Gærtn. [p] Hort. kew. [q] Medicus.

and theſe adhere ſo firmly to the receptacle, as not to fall off even in dried ſpecimens.

Gærtner remarks, that the ſeeds of the ray are almoſt ſtraight, wholly ſmooth, terminated by a ſpinule which is curved inwards; thoſe of the diſk ſickle-ſhaped, either pubeſcent with few villoſe hairs or ſmooth. He adds, that the ſeeds of Rhagadiolus cannot fairly be reckoned diſform, becauſe their diſformity is merely accidental, and proceeds from the calycine involucre.

Native of Iſtria, the Levant and Cochinchina. Cultivated in 1739 by Mr. Miller. It flowers in june and july.*] Mr. Miller affirms that he received the ſeeds from Portugal.

PROPAGATION AND CULTURE.

The firſt is a common weed. If the ſeeds of the other ſorts be permitted to ſcatter, the plants will come up better than if ſown in the ſpring. They require no culture.

[LAPSANA. See *Crepis* and *Hyoſeris*.

LARCH TREE and LARIX. See *Pinus*.]

LARKSPUR. See *Delphinium*.

LASERPITIUM, (*of Pliny*; q. lac ſerpitium, *or juice expreſſed from the root of Silphium*, Dict.)

Lin. gen. n. 344. *Reich. n.* 374. *Schreb. n.* 476. *Tournef.* 172. *Juſſ.* 222. *Gærtn. t.* 85.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ* or *Umbelliferæ*.

GENERIC CHARACTER.

CAL. *Umbel univerſal* very large, with from twenty to forty rays: *partial* with a great many rays, flat.

Involucre univerſal many-leaved, ſmall: *partial* many-leaved, ſmall.

Perianth proper five-toothed, obſcure.

COR. *univerſal* uniform: *floſcules* all fertile.

Proper of five petals, which are inflex-emarginated, almoſt equal, ſpreading.

STAM. *Filaments* five, briſtly, the length of the corolla. *Anthers* ſimple.

PIST. *Germ* roundiſh, inferior. *Styles* two, thickiſh, acuminated, diſtant. *Stigmas* obtuſe, ſpreading.

PER. none. *Fruit* oblong, angulated with eight longitudinal membranes, bipartile.

SEEDS two, very large, oblong, ſemicylindric, flat on one ſide, on the other furniſhed at the back and margins with membranes, (four in all.)

OBS. *The ſeed of* L. Siler *is furrowed, and without membranes.* R.

ESSENTIAL CHARACTER.

Pet. bent in, emarginate, ſpreading. *Fruit* oblong, with eight membranaceous angles.

SPECIES.

1. Laſerpitium latifolium. *Broad-leaved Laſerwort.*
Lin. ſpec. 356. *Juſſ.* 281. *Reich.* 1. 683. *hort. cliff.* 96. 1. *fl. ſuec. n.* 242. *mat. med.* 79. *Hall. helv. n.* 792. *Scop. carn. n.* 320. *Pollich pal. n.* 283. *Jacqu. auſtr.* 2. 28. *t.* 146. *D'Aſſo. arrag.* 252. *Allion. pedem. n.* 1312. *Villars dauph.* 2. 622. *Krock. ſileſ. n.* 419. *Gouan illuſtr.* 13. *Rivin. pent. t.* 21. *Plenck, ic.* 179.
Libanotis latifolia altera ſ. vulgatior. *Bauh. pin.* 157 —&c. vaſis major, *ejuſd. Mor. hiſt. ſ.* 9. *t.* 17. *f. ord. inf.* 1.
L. latif. ſemine criſpo. *Mor. hiſt.* 3. 330. *t.* 19. *f.* 1. 6.
L. Theophraſti major & minor. *Ger.* 857. *f.* 1, 2. *emac.* 1010. *f.* 1, 2. *Park. theat.* 951. 1, 2. *t.* 952. *Rati hiſt.* 427. *n.* 5, 7.
Seſeli æthiopicum. *Ded. pempt.* 312. *Cluſ. hiſt.* 194. —vulgare. *Camer. epit.* 513.
Thapſia officinarum. *Dale pharm.* 131.
Leaflets cordate gaſh-ſerrate.
2. Laſerpitium trilobum. *Columbine-leaved Laſerwort.*
Lin. ſpec. 357. *Juſſ.* 281. *Reich.* 1. 684. *Jacqu. vind.* 48.
L. aquilegifolium. *Jacqu. auſtr.* 2. 29. *t.* 147.
Siler aquilegifolium. *Gærtn. fruct.* 1. 92. *t.* 22. *Pluk. phyt. t.* 223. *f.* 7. *Riv. pent.* 64. *Mor. umb. t.* 1. *f.* 81, 82.
S. trilobum. *Crantz. auſtr.* 186.

Angelica foliolis tripartitis, lobis ſuperne inciſo-bifidis. *Roy. lugdb.* 104. *Gron. orient.* 85.
Liguſticum Rauwolfii fol. aquilegiæ. *Bauh. hiſt.* 3. 14.
Libanotis lanifolia, aquilegiæ folio. *Bauh. pin.* 157. *prodr.* 83. *Park. theat.* 952. *n.* 4. *Rati hiſt.* 438.
Seſeli æthiopici aliud genus. *Cluſ. hiſt.* 195.
Leaflets three-lobed gaſhed.
3. Laſerpitium gallicum. *French Laſerwort.*
Lin. ſpec. 357. *Reich.* 1. 684. *hort. cliff.* 96. 5. *Gærtn. fruct.* 2. 31. *Villars dauph.* 2. 622. *Ger. prov.* 246. *Allion. pedem. n.* 1313. *Bauh. pin.* 156. *Park. theat.* 938. *f.* 1. *Garid. aix. t.* 58.
Laſerpitium. *Ger.* 853. *emac.* 1006.
L. e regione Maſſiliæ allatum. *Bauh. hiſt.* 3. 137.
L. lobis latioribus, ſemine criſpo. *Mor. umb. t.* 1. *f.* 10, 10.—lob. anguſt. ſaturate virentibus. *hiſt.* 3. 321. *ſ.* 9. *t.* 19. *f.* 8.
β. L. fol. anguſtioribus dilute virentibus conjugatim diſpoſitis (plurifariam diviſis). *Morif. umb.* 64. *Rati hiſt.* 426.
L. tenuifolium. *Riv. pent.* 22.
Leaflets wedge-form forked.
[4. Laſerpitium ſilaifolium.
Lin. ſyſt. 281. *Jacqu. auſtr.* 5. 52. *app. t.* 44.
Root many-forked, ſtem ſmooth, leaflets pinnatifid with lanceolate ſegments.]
5. Laſerpitium anguſtifolium. *Narrow-leaved Laſerwort.*
Lin. ſpec. 357. *Reich.* 1. 684. *hort. cliff.* 96. 2. *Mor. hiſt.* 3. 321. *ſ.* 9. *t.* 19. *f.* 9. *Pluk. phyt. t.* 198. *f.* 4.
Leaflets lanceolate quite entire ſeſſile.
6. Laſerpitium prutenicum.
Lin. ſpec. 357. *Juſſ.* 281. * *Reich.* 1. 685. *hort. cliff.* 96. 4. *Jacqu. auſtr.* 2. *t.* 153. *Villars dauph.* 2. 624. *Krock. ſileſ. n.* 420.
L. gallicum. *Jacqu. vind.* 48. *Scop. carn. n.* 321.
L. ſeſinoides. *Crantz. auſtr.* 182. *Allion. pedem. n.* 1314.
L. daucoides prutenicum, viſcoſo ſemine. *Breyn. cent.* 167. *t.* 84. *Rati hiſt.* 425. *Mor. hiſt.* 3. 321. *n.* 15.
L. minus. *Riv. pent. t.* 23. *Ruth. jen.* 277. *Hall. gott.* 177.
Leaflets lanceolate quite entire, the outmoſt united.
[7. Laſerpitium dauricum.
Lin. ſyſt. 282. *Joſeph. hort.* 3. *t.* 38.
Liguſticum ferulaceum. *Allion. pedem. n.* 1319. *t.* 60. *f.* 1.
Stem ſpotted, leaflets pinnatifid acuminate.]
8. Laſerpitium peucedanoides.
Lin. ſpec. 358. *Reich.* 1. 685. *amoen.* 4. 310. *Segn. veron.* 3. 227. *t.* 7. *Pluk. phyt. t.* 96. *f.* 1.
Leaflets linear-lanceolate veined-ſtriated diſtinct.
9. Laſerpitium Siler. *Mountain Laſerwort.*
Lin. ſpec. 357. *Juſſ.* 280. *Reich. n.* 685. *hort. cliff.* 96. 3. *mat. med.* 79. *Hall. helv. n.* 794. *Scop. carn.* 322. *Jacqu. auſtr.* 2. 27. *t.* 145. *Villars dauph.* 2. 627. *Plenck, ic.* 178. *Blackw. t.* 426.
Siler montanum. *Ded. purg.* 484. *Ger.* 892. *emac.* 1048. *Park. theat.* 909. *f.* 1. *Mor. hiſt.* 3. 276. *ſ.* 9. *t.* 3. *f.* 2. *Rati hiſt.* 439. *Crantz. auſtr.* 185. *umb.* 68. *Allion. pedem. n.* 1316.
Liguſticum. *Dalech. lugdb.* 744.—quod Seſeli officinarum. *Bauh. pin.* 162.
β. Liguſticum ſ. Siler mont. anguſtifolium. *Bauh. pin.* 162.
Leaflets oval-lanceolate quite entire petioled.
[10. Laſerpitium diffuſum.
Hall. helv. n. 795. *t.* 19. *Crantz. umb.* 67.
L. Hallen. *Allion. pedem. n.* 1315. *Villars dauph.* 2. 625.
L. Panax. *Gouan. illuſtr.* 13.
Panax aſclepium ſemine foliolo. *Bauh. pin.* 158.
Panaces aſclepium alterum Dalechampii. *Lugd.* 740.
Leaves ſuper-decompound, leaflets linear-awl-ſhaped ſomewhat hairy, univerſal involucres lanceolate membranaceous.
11. Laſerpitium lucidum. *Shining Laſerwort.*
Ait. hort. kew. 1. 345. *Hall. helv. n.* 796.
Leaves ſuper-decompound linear-awl-ſhaped ſmooth, univerſal involucres pinnate.]

* Hort. kew.

12. Laſerpitium Chironium.
Lin. ſpec. 358. *Reich.* 1. 686. *Blackw. t.* 434.
Panax Paſtinacæ folio. *Baub. pin.* 156. *Mor. hiſt. ſ.* 9. *t.* 17. *f.* 1.
Leaflets obliquely cordate, petioles birſute.

13. Laſerpitium ferulaceum. *Fennel-leaved Laſerwort.*
Lin. ſpec. 358. *Reich.* 1. 686.
Cachrys orientalis. *Tournef. cor.* 23. *itin.* 2. 286. *fig.*
Leaflets linear.

[14. Laſerpitium ſimplex.
Lin. ſyſt. 282. *Reich.* 1. 686. *mant.* 56.
Liguſticum ſimplex. *Allion. pedem. n.* 1324. *Villars dauph.* 2. 618.
Scape naked leafleſs ſimple, leaves pinnate multifid acute linear, umbel ſemiglobular.

15. Laſerpitium Aciphylla.
Lin. ſyſt. 282. *ſuppl.* 181. *Forſt. flor. auſtral. n.* 139. *Gærtn. fruct.* 1. 31.
Aciphylla ſquarroſa. *Forſt. gen.* 68.
Stem ſheathed, petioles dilated, leaves digitate linear elongated mucronate.

DESCRIPTIONS, &c.

1. Root the thickneſs of the finger or more, ſtriking two feet into the ground, pale brown on the outſide, white within, ſomewhat fleſhy, ſcarcely fibrous, perennial, having a very bitter ſubacrid unpleaſant taſte, and crowned with briſtles. Stem round, ſtriated, green with a glaucous bloom on it, ſmooth, filled with white pith. Sheaths of the leaves ſtriated, ſwelling. Rilis compreſſed with the forward edge ſharp. Leaves twice-pinnate: leaflets entire or with few lobes, toothferrate, obtuſe or acute, the lower petioled, the upper often ſeſſile, very ſmooth on both ſides or rough on the back only, firm, deep green on the upper ſurface, more glaucous and veined on the lower. Umbel upright, flat or ſomewhat convex, in the largeſt half a foot in diameter, compoſed of very many round ſtriated rays; leaflets of the involucre acuminate, ſpreading very much or reflex, pale green with ſometimes a purple edge, from five to ten in number. Partial umbel convex and cloſer, with a ſimilar involucre or none. Flowers white, petals inflex, obcordate, almoſt equal. Seeds ſmooth, flat on one ſide, having four, membranaceous, thin, ſubpellucid wings on the other, the outmoſt on each ſide broader; they have but little ſmell, and an unpleaſant ſubacrid taſte. It flowers in july, and the ſeeds are ripe in ſeptember.

It varies ſo much from ſituation that it might be miſtaken for different ſpecies, and ſeveral varieties are mentioned by authors. In the Alps it is only a foot or two in height, and ſometimes even ſhorter, with a ſtem entirely ſimple terminated by a ſingle umbel; it is alſo extremely ſmooth; more or leſs aſperity may however be obſerved on the leaflets and eſpecially on the ribs of ſome individuals; which is ſo remarkable in the large, lofty, branched plants of the lower regions. Theſe however become ſmooth when tranſplanted into a garden; and ſome leaves of the ſmooth alpine plants become hairy [a].

Native of many parts of Europe. Cultivated here in 1640, according to Parkinſon [b].

This acrid aromatic plant with ſomething of bitterneſs, ſeems to merit a place among the aromatic ſtimulants, emmenagogues, and aperient ſudorifics. It is uſed by the peaſants for themſelves, and by farriers for horſes in ſome countries; but not by regular practitioners. The root is the hotteſt part of the plant [c].

Mr. Miller has made ſeveral ſpecies out of this, but he has not deſcribed any.

2. The *L. trilobum* is diſtinguiſhed from *L. aquilegiefolium* by Murray and Jacquin. The leaflets of the former are cordate at the baſe, acute, and acutely ſerrate; whereas in the latter they are blunt. Haller's ſynonyms of n. 793. belong to this ſpecies; but he has deſcribed a variety of L. latifolium.

Jacquin thus deſcribes his plant. The whole of it is very ſmooth. Root perennial, round, a foot or more in length, with abundance of fibres at top, blackiſh on the outſide, white within with a yellowiſh pith in the middle, ſmelling when bruiſed, and having a bitter unpleaſant taſte. Stem round, from four to ſix feet in height, marked with lines but not grooved, firm, upright, ſhining, glaucous-green, becoming dark purple with age, having brachiate branches, and an aromatic ſweetiſh taſte. Sheath of the leaves long, concave, converging, ſtriated and embracing. Root and lower ſtem-leaves very large and tritternate, on long, ſubſtriated, ſolid, round or ſlightly compreſſed petioles. Upper ſtem-leaves ſeſſile and ſubternate; with the leaflets uſually three-lobed and gaſhed, ſharp with reddiſh teeth: ſometimes a ſingle three-lobed leaf is placed on the ſheath. Theſe leaflets however are all wide, and none of them linear. The middle ſtem-leaves are ſub-biternate, without any common petiole; and each either has its proper petiole, or the ſide ones alſo are ſeſſile. The pinnas both of theſe and the root-leaves are wide, blunt, lobed, gaſhed, glaucous and netted-veined on the back, ſmelling when rubbed. Univerſal involucre either wholly wanting, or conſiſting of one or two lanceolate, acuminate, concave, membranaceous leaflets, green edged with red. Partial alſo either none, or compoſed of few ſmall leaflets. Umbel wide, thin, flat, compoſed of ſtiff, ſtriated, round rays from two to three inches in length, and from ten to twenty in number. Partial more convex and denſe. Some of the central florets, having no piſtils, are abortive. Petals ſmall, white, attenuated at the baſe, inflex-cordate, equal and ſpreading very much. Anthers pale. Germ compreſſed, ſtriated. Styles awl-ſhaped, green. Fruit ovate-oblong, compreſſed, blunt. Seeds plano-convex with five ſhort pale membranaceous wings, and four others ſtill narrower between them.

Gærtner, who gives all the ſynonyms of Linneus, Jacquin, Haller, Morriſon and Rivinus, and unites the ſecond and third ſpecies of Murray, as we have done, ſeparates this plant from Laſerpitium, on account of the number of grooves, in the ſeeds, and there being no wings. He deſcribes the fruit as elliptic, turgidly lens-ſhaped, many-ſtreaked, conſiſting of two oblong-elliptic ſeeds, of a middling ſize; on the back are nine ſtreaks, alternately ſtanding more out, all rounded, without any veſtige of a wing; the belly flat or ſlightly concave.

Native of the Levant and Auſtria. Cultivated in 1640, according to Parkinſon. It flowers from may to july [d].

3. Root perennial. Stem not much branched, and having only one or two, ſeldom three leaves at the lower part: at the top are commonly two very large umbels. The wings of the ſeeds are very large, and frequently curled or waved. It varies with entire, rounded leaflets, agreeing in every other reſpect: and there are few plants that vary more [e].

Fruit ovate, ſomewhat gibbous, white or pale ſtraw-colour. Seeds plano-convex, with two dorſal and two marginal wings on the convex ſide, all membranaceous, fringed, and ſometimes entire, ſometimes gnawn at the edge: the flat ſide having a raiſed line along the middle [f].

Native of the South of Europe. Cultivated in 1683, by Mr. James Sutherland. It flowers in june and july [g].

4. Root perennial, white within and without but growing brown with age, ſeldom fuſiform and ſtriking downwards, but commonly tranſverſe and branched, unequal, a finger thick, fibrous, of a ſubacrid taſte and aromatic ſmell. Stem on open rocky hills perennial, one or two lines thick, and ſometimes not more than a ſpan high; in a lower ſituation among buſhes and on the borders of woods it grows to the height of four feet, with a ſtem the thickneſs of a pen. From one to three ſtems and more come out from the ſame root; they are upright, ſtriated, ſmooth, flexuoſe, branched. Membranaceous, ſtriated, channelled petioles inveſt the ſtem. Leaves manifold-pinnate, ſmooth: leaflets deeply gaſhed, flat; ſegments oblong, ſhortly mucronate. Pedunceles oppoſite to a leaf, upright, ſtriated. Umbels cloſe, flattiſh, compoſed of numerous rays. Umbellets ſimilar. Leaflets of the univerſal

[a] Jacquin. [b] Hort. kew. [c] Allion. and Krocker. [d] Hort. kew. [e] Villars [f] Gærtner. [g] Hort. kew.

universal involucre few, (sometimes only one) linear, seldom pinnatifid, half the length of the umbel: of the partial several, linear, the length of the umbellet. All the flowers fertile. Petals white or yellowish, almost equal, inflex-cordate, almost upright. Germ striated, oblong, smooth. Filaments many times longer than the petals. Anthers pale. Styles white, upright. Seeds elliptic, smooth, plano-convex, with five membranaceous wings.

Native of Carniola and Italy [a].

5. This is a lower plant than the first, not more than a foot and half or two feet in height; the leaves are much narrower; and the petioles are hairy. Flowers white. Seeds winged, curled [b].

Native of the southern parts of Europe. Cultivated in 1759 by Mr. Miller. It flowers in june and july [c].

6. Root perennial. Stem hirsute with white hairs, especially towards the base. Leaves having the appearance of *Cicuta virosa*, hirsute on the petioles and ribs: leaflets wedge-form-lanceolate, pinnatifid, not rigid. Umbels of the ray, involucres and flowers white. Seeds pubescent, acrid and aromatic [d].

Native of Prussia, Leipsic, Austria, Carniola, Dauphiné, Italy. Cultivated by Mr. Miller in 1759.

7. This is a biennial plant. The whole plant is smooth, has some smell when bruised, and a slightly aromatic acrid taste. Root subfusiform, the thickness of a finger, dirty white, with thickish fibres all round. Stem upright, firm, round, marked with lines, fistular, shining, branched from the axils of most of the upper leaves, green with dark purple spots. Branches under the umbel and the rays rough to the touch, when viewed with the microscope appearing muricated with white on the back of the streaks. Root and stem-leaves tripinnate; the upper ones pinnate. Rib grooved in front, angular in the other parts, not fistular, springing from a striated sheath. Leaflets pinnatifid, dark green on the upper surface: all the segments lanceolate, acute, most of them quite entire, unequal. Umbels erect, somewhat convex. Leaflets of the involucre about six, spreading a little, awl-shaped, acute, in a short time becoming brownish. Umbellets small, convex, distant, from twelve to twenty, with a similar involucre. All the florets fertile. Petals all equal, oval, with a narrow inflex tip, but not remarkably cordate, spreading very much and finally turned back, white but sometimes one or two half purple. Filaments purple at bottom, spreading very much, longer than the corolla. Style as the germ advances reflected. Germ yellowish at top, grooved along the border at each filament. Seeds subovate, smooth, brown, having an aromatic flavour without acrimony, but not pleasant, flat on one side, convex on the other, three-winged, and running out besides into a membranaceous wing at the edges [e].

8. From a thick oblong root, blackish on the outside, two or three leaves come out on long petioles, with a three-fold division, each again divided into three or five very narrow leaflets, almost two inches in length, and resembling grass leaves. Stem about a foot high, dividing into two or three branches, with a leaf at the base of each. Umbel of five, and sometimes of twelve rays, with an involucre both to that and the umbellet. Flowers white. Seeds striated and four-winged on one side, flat on the other.

Native of Monte Baldo [a].

9. Root perennial, with a thick head which is crowned with abundant brittly remains of former leaves, a foot and half in length, the thickness of the human thumb, round, with an irregular brown bark, fleshy and white within, with a yellowish pith. The whole plant smooth. Stem brachiate, round, marked with lines but not grooved, pale green or purplish, in subalpine meadows from one to two feet high, but in the lower mountains six feet in height. Leaves manifold-pinnate, smelling when bruised, aromatic, scarcely acrid, not pleasant. Ribs compressed, especially the lower ones, very finely marked with lines, shining. Sheaths wide, swelling, membranaceous, firm, marked with lines, pale green, embracing. Pinnules narrow-lanceolate, more or less acute, flat, glaucous green, subpetioled, most of them ternate, thickish. Universal involucre of ten or more, short, lanceolate or ovate, acute, concave, spreading or reflex leaflets. Partial similar but less. Universal umbel convex, from four to eight inches in diameter; rays roundish, smooth on the back, striated and roughish above, twenty or more. Petals white, almost equal, inflex-cordate, spreading very much, wide. Filaments white, spreading, longer than the petals. Anthers whitish. In the umbels on the branches most of the florets, and sometimes all are abortive: in the principal umbel a few only in each umbellet: none of these have any germ. Fruit oblong, subcylindric, shining, brownish. Seeds flat and striated on one side, convex on the other with four narrow membranaceous wings, with raised lines between, having a strong smell of Cumin, and an aromatic, subacrid, bitter taste [a].

Native of Austria, Switzerland and France. It flowers in july and august, and the seeds ripen in september. It was cultivated here in 1640, according to Parkinson [b]. Our old authors name it *Sermountain* from the French.

It differs from the varieties of *L. gallicum* in being loftier, in having leaves all along the stem, and the seed longer, with very small membranes, often concealed within the streaks.

The root is extremely bitter, and might be useful in fevers, cachexies, loss of appetite, &c. An infusion of it in wine has been given with success in disorders of the stomach [c]. It yields an aromatic resinous juice on being wounded, and being made into a syrup, is recommended in disorders of the breast [d].

10. Root perennial, striking very deep and but little branched. Stem a foot and half high, terminated by one or two umbels, solid, smooth, slightly striated. Leaves two or three at the base of the stem; and when the stem divides, there is one smaller under the lateral branch, otherwise it is naked: they are four times pinnate, triangular. Leaflets short, lanceolate, a little hard, and loaded with small hairs. Umbels very numerous, convex. Involucres many-leaved, permanent, membranaceous, seldom trifid. Petals white. Fruit oblong, with four wings, which are very narrow [a].

It differs from the seventh species in having the leaves four times divided, with the segments of the pinnules shorter and closer, converging upwards, roughish, and finely hairy on the rib and back of the leaves; the stems commonly simple; the umbel very close; the leaflets of each involucre simple and wider; the petioles round and marked with green and white streaks'.—Native of Switzerland, France, and Italy.

11. Root woody, large, with several forks, crowned with bristles and scales of fallen leaves. Leaves firm, smooth, shining, three times pinnate: leaflets sharply lanceolate, about half a line wide, simple bifid or trifid. Stem-leaves similar, few, more simple. Stem straight, grooved, half a foot high. Umbel very close, globular, convex. Leaflets of the universal involucre seven to ten, mostly petioled, semitrifid, a little shorter than the umbel: those of the partial umbel lanceolate and entire, or trifid. Flower often purple; the petals a little unequal, inflex-cordate. Seed large, ovate, four-winged, often purple or almost black [a].

Native of Switzerland. Introduced in 1775, by Drs. Pitcairn and Fothergill. It flowers in july [b].

12. Leaves entire, cordate, with the upper lobe shorter, crenate, blunt. Petioles very hirsute. Both involucres small. Hence it is different from Pastinaca Opopanax, with which Gouan joins it [a].

Native of Montpelier, where however Gouan could not find any such plant, distinct from P. Opopanax [b].

13. Leaves five times pinnate, extremely superdecompound, very narrow, smooth, lax. Seeds winged [a].

Native of the Levant. Cultivated in 1768, by Mr. Miller. It flowers in june [b].

[a] Jacquin. [b] Morison. [c] Hort. kew. [d] Linn. syst. [e] Jacquin. [a] Seguier.

[a] Jacquin. [b] Haudiquer. [c] Villars. [d] Allion. [e] Villars. [f] Allion. [a] Haller. [b] Hort. kew. [c] Linn. spec. [d] Gouan illustr. 19. n. 2. [a] Linn. spec. [b] Hort. kew.

14. Root perennial, knobbed, and often multiplied at top, ſo as to produce ſeveral ſtems. Leaves deep green, bipinnate like thoſe of Carui, but leſs fine. Stem only two or three inches high, ſlender, upright, ſtriated; terminated by a ſolid, rounded, reddiſh umbel. Leaflets of the involucre trifid; but ſometimes in the partial involucre ſimple. Petals white with a tinge of red. Germ red. The ſeeds have five deep ſtreaks, with as many ribs, without any membranous wing [a].

Native of the mountains of Switzerland, Auſtria, and Dauphiné.

15. Umbels axillary, ſeveral, ſcarcely larger than the petioles [b]. Fruit elliptic-oblong, independent of the wings almoſt cylindric. Seeds having four membranaceous wings, and a raiſed line along the middle of the back, frequently becoming a fifth wing. The wings are of a yellow-bay colour, but the interſtices are ferruginous-brown [c].

Forſter made it a new genus, which he named *Aciphylla* from the ſharpneſs of the leaves like needles.

Native of New Zealand. Found in Queen Charlotte's Sound november 6th, 1774 [d].]

PROPAGATION AND CULTURE.

Theſe plants having no great beauty, and taking up much room, are ſeldom cultivated except in botanic gardens. The roots extend widely; and the leaves of ſome ſorts ſpread three feet, when the plants are ſtrong; the flower-ſtalks riſe four or five feet high, and the umbels of flowers are very large.

Moſt of them are very hardy, and will thrive in any ſoil and ſituation. Sow the ſeeds in autumn, and the plants will come up in the ſpring: but when they are ſown in ſpring, the ſeeds commonly remain in the ground a whole year. Tranſplant them the following autumn where they are deſigned to remain, for they ſend out long deep roots, which are frequently broken by tranſplanting when large. Place them three feet aſunder. The plants decay to the ground every autumn, but the roots continue many years, and require no other culture but to clear them from weeds, and to dig between the roots every ſpring.

The thirteenth ſort requires a warmer ſituation, otherwiſe it will be killed in ſharp winters.

[LASERPITIUM. See *Ferula* and *Selinum*.

LASERWORT. See *Laſerpitium*.

LASIANTHUS. See *Gordonia*.

LASIOSTOMA. (*From* λασιος, *hairy, ſhaggy, and* στομα, *a mouth.*)

Lin. gen. Schreb. n. 180.

Rouhamon. *Aubl. guian.* 93. *t.* 36.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Apocineæ*, Juſſ. 149.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, very ſhort, five-parted, *diviſions* acute; at its baſe two oppoſite *ſcales*.

COR. one-petalled, funnel-form; *tube* cylindric; *border* four-cleft; *diviſions* acute, villoſe.

STAM. *Filaments* four, capillary, villoſe at the baſe, inſerted into the tube of the corolla. *Anthers* oblong.

PIST. *Germ* ovate, ſuperior. *Style* longer than the corolla. *Stigma* obtuſe.

PER. *Capſule* orbiculate, one-celled, with a brittle bark.

SEEDS two, hemiſpherical.

ESSENTIAL CHARACTER.

Cal. very ſhort, five-petalled, with two acute ſcales. *Cor.* funnel-form, four-cleft. *Capſ.* orbiculate, one-celled, two-ſeeded.

SPECIES.

1. Laſioſtoma Rouhamon.

Lin. ſyſt. ed. Gmel. 248.

Rouhamon guianenſis. *Aubl. guian.* 1. 93. t. 36.

DESCRIPTION, *&c.*

This is a ſhrub with a trunk ſeven or eight feet in height, and ſix or ſeven inches in diameter, with a grayiſh, irregular, rugged bark, and a whitiſh wood. Branches and branchlets oppoſite, covered with a ruſſet down, and ſpreading over the neighbouring trees. The branchlets are knobbed, and at each joint have a pair of leaves, which are entire, ſmooth, oval, ending in a point, and three-nerved underneath; they are of a very pale green, and on very ſhort petioles: the largeſt are two inches long, and an inch four lines in breadth. Flowers in ſmall axillary corymbs, on a ſmall peduncle, which has two ſcales at the baſe: they are oppoſite in pairs, and almoſt ſeſſile. Corolla white. Capſule yellow.

From the axil of the leaves there ſpring at intervals ſimple tendrils, two inches and a half long, curved back in form of a croſs at top, where they become thicker. By means of theſe tendrils the branches ſupport themſelves on the neighbouring trees.

This ſhrub is called *Rouhabomon* by the Caribs. It is in flower and fruit during the months of october and november; and is found on the banks of the river Sinemari in Guiana, forty leagues from its mouth.

A variety occurs with ſmooth branches, larger leaves, ſmaller flowers and fruits. It has no tendrils, but the branches are ſtraight [e].

LATHRÆA. (*From* λαθραιος, *clandeſtinus, which is from* λαθω, *clam.*)

Lin. gen. n. 743. *Reich. n.* 801. *Schreb. n.* 1000. *Gærtn. t.* 52. *Juſſ.* 102.

Clandeſtina. *Tournef.* 424.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ. Pediculares*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, campanulate, ſtraight; *mouth* deeply four-cleft.

COR. one-petalled, ringent. *Tube* longer than the calyx. *Border* ringent, ventricoſe. *Upper lip* concave, galeated, broad, with a narrow hooked tip. *Lower lip* leſs reflex, obtuſe, trifid.

Nectary: an emarginate glandule, depreſſed on each ſide, very ſhort, inſerted into the receptacle of the flower at the other corner of the germ.

STAM. *Filaments* four, awl-ſhaped, length of the corolla, hid under the upper lip. *Anthers* obtuſe, depreſſed, converging.

PIST. *Germ* globoſe-compreſſed. *Style* filiform, length and ſituation of the ſtamens. *Stigma* truncated, nodding.

PER. *Capſule* roundiſh, obtuſe with a point, one-celled, two-valved, elaſtic, coated with a very large ſpreading calyx.

SEEDS few, ſubglobuloſe, affixed to the middle of the valves.

OBS. *It approaches nearly, on account of its glandule, to* Orobanche.

ESSENTIAL CHARACTER.

Cal. four-cleft. *Gland* depreſſed, at the baſe of the future of the germ. *Capſ.* one-celled.

SPECIES.

1. Lathræa clandeſtina.

Lin. ſpec. 843. *Reich.* 3. 112. *Guett. ſtamp.* 2. 454.

Clandeſtina flore ſubcæruleo. *Tournef. inſt.* 952.

Dentaria aphyllos. *Raii hiſt.* 1230.

Orobanche montana. *Rudb. elyſ.* 2. 233. *f.* 14.

O. flore majore ex cæruleo purpuraſcente. *Baub. pin.* 87. *prodr.* 31. *Rudb. elyſ.* 2. 229. *f.* 2. *Raii hiſt.* 1227. *Mor. hiſt.* 3. 502.

O. ſ. Dentaria aphyllos purpurea, ceſpite denſo. *Mor. hiſt.* 3. 503. *ſ.* 12. *t.* 16. *f.* 15.

Planta clandeſtina ſ. Madrona. *Dalech. hiſt. ed. gall.* 960.

Stem branched almoſt underground, flowers upright ſolitary.

2. Lathræa Phelypæa.

Lin. ſpec. 844. *Reich.* 3. 113.

Orobanche elegantiſſima verna, flore luteo. *Griſ. laſit. Mor. hiſt.* 3. 502.

Corollas ſpreading-bell-ſhaped.

3. Lathræa Anblatum.

Lin. ſpec. 844. *ſyſt.* 550. *Reich.* 3. 113.

Anblatum orientale, flore purpuraſcente. *Tournef. cor.* 48.

Lips of the corollas undivided.

[a] Villars. [b] Linn. ſuppl. [c] Gærtner. [d] Forſt. drawings. [e] Aublet.

4. Lathræa Squamaria. *Great Toothwort.*
Lin. spec. 844. *Reich.* 3. 113. *fl. suec. n.* 550. *Gærtn. fruct.* 1. 242. *Hudſ. angl.* 266. *Wither. arr. ed.* 3. 547. *Engl. bot.* 59. *Light. ſcot.* 326. *Linn. herborn. n.* 474. *Fl. dan. t.* 136. *Crantz. auſtr.* 293. *Villars dauph.* 2. 408. *Allion. pedem. n.* 196. *Krock. ſileſ. n.* 977. *Blackw. t.* 430. *Zorn. ic.* 110.
Squamaria Orobanche. *Scop. carn. n.* 760.
S. *Riv. mon. t.* 89. 2. *Hall. helv. n.* 297.
Orobanche radice dentata major. *Bauh. pin.* 88. *Rati hiſt.* 1229. *Mor. hiſt.* 12. 16. 11, 14.—ſ. Dentaria major. *Park. theat.* 1363. 4.
Dentaria major. *Matth.* 964. *Ger.* 1387. 1. *emac.* 1285. 1.—ſ. Aphyllos. *Cluſ. hiſt.* 2. 120. 1.
Anblatum. *Dod. pempt.* 553. 1.—Cordi *hiſt.* 891.—ſ. Aphyllon. *Bauh. hiſt.* 3. 783. 2.
Stem quite ſimple, corollas pendulous, lower lip trifid.

DESCRIPTION, *&c.*

1. Root thick, long, fibrous. Stem half a palm in height, ſurrounded by few, very ſhort, thick, ſharp leaves, and terminated by five, ſix or more naked peduncles, three inches long, each bearing one flower of a blue colour, near two inches in length [a].
The ſtem bears the corymb under ground, ſo that ſolitary fructifications only appear above ground on each branch [b].
Ray and others have this plant twice over.
Native of France, the Pyrenees and Italy. Ray obſerved it in moiſt ſhady places between Maſſa and Lucca.
2. This is a tender juicy plant, a palm and half high. Stem ſurrounded by abundance of ſoft ſucculent leaves, broad at the baſe, and ending in a ſharp point. From the top come out three or four tubular, funnel-ſhaped flowers, an inch or an inch and half in length, of a yellow colour, divided at top into five ſegments [c].
The ſtructure of the flower in this plant is very different from that of Lathræa. The Phelypæa 3. of Linnæus was rightly ſuſpected by Juſſieu to be of a different genus, and it belongs to the genus *Æginetia*. Thunberg has conſtituted a new genus under the name of *Phelypæa*, which Mr. Correa ſuſpects to be a ſpecies of Cytinus.
3. Found by Tournefort in the Levant.
4. Root beaded, branched and ſurrounded with white ſucculent ſcales: it is paraſitical, and generally attached to the roots of Elms, Haſels, or ſome other trees, in a ſhady ſituation. Stem naked, except ſometimes one or two oval ſcales. Flowers in a ſpike, from one ſide of the ſtem, in a double row. Bractes roundiſh-oval, large, reddiſh, one at the baſe of each pedincle, forming a double line oppoſite to the flowers. Calyx hairy, whitiſh, bellying; ſegments equal, bluntiſh. Corolla pale purple or fleſh-coloured, except the lower lip, which is white: the upper lip is rather ſhort and truncate [d].
By this plant and Ophrys Nidus avis we may trace an affinity between Didynamia Angioſpermia of Linnæus, and the natural order of Orchideæ [e].
Native of moſt parts of Europe: with us it is rather rare. Hadlow in Kent. Hareſield in Middleſex. Near Stamford. Woods of Derbyſhire. Conſtick-ſcar near Kendal, Weſtmoreland. Near Gainſford, Durham. In Scotland, at Mevis-bank towards Laſwade, four or five miles from Edinburgh; and in Morvern, near the ſound of Mull.—The flowers appear in april, emerging from the decayed leaves of trees, among which the plant is moſtly found half buried.
The Engliſh name *Toothwort* is derived from the reſemblance of the ſcaly roots, to the human fore-teeth; and hence it was fancied formerly to be good for the tooth-ach [f].
This genus of Linnæus is very miſcellaneous, the ſtructure of the fructification differing widely in the different ſpecies. When theſe ſhall be more accurately examined, perhaps the laſt only may remain in the genus.

[a] Bauh. prodr. [b] Linn. [c] Morriſon. [d] Woodw. Mſs. Light. Wither. [e] Engl. bot. [f] Ibid.

LATHYRIS. See *Euphorbia.*
LATHYROIDES. See *Orobus* and *Spartium.*]
LATHYRUS. (Λαθυρος *of Theophraſtus.*)
Lin. gen. n. 872. *Reich. n.* 946. *Schreb. n.* 1186. *Tournef. t.* 216. 217. *Juſſ.* 359. *Gærtn. t.* 152.
Clymenum. *Tournef.* 218. Aphaca. *Tournef.* 223.
Claſſ. 17. 4. Diadelphia Decandria.
Nat. order of *Papilionacei* or *Leguminoſæ.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, half five-cleft, bell-ſhaped: *diviſions* lanceolate, ſharp: the two upper ones ſhorter; the loweſt longer.
COR. Papilionaceous.
Standard obcordate, very large, reflex on the ſides and tip.
Wings oblong, lunulate, ſhort, obtuſe.
Keel half-orbiculate; ſize of the wings, and wider than the wings, gaping inwards in the middle.
STAM. *Filaments* diadelphous, (ſingle and nine-cleft) riſing upwards. *Anthers* roundiſh.
PIST. *Germ* compreſſed, oblong, linear. *Style* erected upwards, flat, wider above, with ſharp tip. *Stigma*, from the middle of the ſtyle to the tip villoſe in front.
PER. *Legume* very long, cylindric or compreſſed, acuminate, one-celled, bivalve.
SEEDS ſeveral, cylindric, globoſe, or but little cornered.
OBS. Lathyrus T. *has conjugated tendrilled leaves.*
Clymenum T. *has pinnated tendrilled leaves.*
Niſſolia T. *has ſimple leaves without tendrils.*
Aphaca T. *produces ſtipules without leaves.*
Piſum *differs manifeſtly from* Lathyrus *in the ſtyle, but is extremely allied to it.*

ESSENTIAL CHARACTER.

Cal. two upper ſegments ſhorter. *Style* flat, villoſe above, broader at the end.

SPECIES.

With one-flowered pedunckes.

1. Lathyrus Aphaca. *Yellow Lathyrus* or *Vetchling.*
Lin. ſpec. 1029. *Reich.* 3. 461. *hort. cliff.* 367. 2. *upſ.* 218. *Hudſ. angl.* 315. *Wither. arr. ed.* 3. 632. *Curt. lond.* 5. 68. *Relh. cant. n.* 518. *Hall. helv. n.* 442. *Scop. carn. n.* 887. *Pollich pal. n.* 675. *Neck. gallob.* 305. *Villars dauph.* 3. 440. *Krock. ſileſ. n.* 1161.
Aphaca. *Lob. obſ.* 518. 1. *ic.* 2. 70. 1. *Ger. emac.* 1250. *Park. theat.* 1067. *Rati hiſt.* 899. *ſyn.* 320. *Mill. fig. t.* 43.
Vicia lutea foliis Convolvuli minoris. *Bauh. pin.* 345. *Mor. hiſt. ſ.* 2. *t.* 4. *f.* 7.
Elatine 3. *Tabern. ic.* 716.
Vicia quæ Pitine Anguillaræ, lata ſiliqua, flore luteo. *Bauh. hiſt.* 2. 316. *f.* 317. 1.
Orobanche Legumen. *Dalech. hiſt.* 484.
Peduncles one-flowered, tendrils leafleſs, ſtipules ſagittate-cordate.
2. Lathyrus Niſſolia. *Crimſon Lathyrus* or *Graſs-Vetch.*
Lin. ſpec. 1029. *ſyſt.* 662. *Reich.* 3. 462. *vir. cliff.* 74. *hort. cliff.* 366. *Hudſ. angl.* 315. *Wither. arr. ed.* 3. 632. *Engl. bot.* 112. *Relh. cant. n.* 519. *Hall. helv. n.* 441. *Scop. carn. n.* 888. *Neck. gallob.* 306. *Pollich pal. n.* 676. *Villars dauph.* 3. 441. *Krock. ſileſ. n.* 1161.
L. ſylveſtris minor. *Bauh. pin.* 344.
L. anguſtifolius erectus, fol. ſingulari, ſine capreolis. *Magn. hort. t.* 112.
Niſſolia parva flore purpureo. *Bunb. cent.* 3. 84. *t.* 45. *f.* 1.
N. vulgaris. *Lindern. hort.* 73. *fig.*
Catanance. *Mor. hiſt. ſ.* 2. *t.* 3. *f.* 7.—leguminoſa. *Bauh. hiſt.* 2. 309. 1. *Rati hiſt.* 921. *ſyn.* 323.
Ervum ſilveſtre. *Dod. pempt.* 529 1. *Lob. obſ.* 518. 2. *ic.* 2. 71. 1. *Ger. emac.* 1249. 2. *Park. theat.* 1079. 4.
Peduncles one-flowered, leaves ſimple, ſtipules oval-ſhaped.
[3. Lathyrus ſphæricus.
Retz. obſ. 3. 39.
Peduncles one-flowered aigned, tendrils two-leaved quite ſimple, leaflets enſiform.]

4. Lathyrus amphicarpos. *Subterranean Lathyrus*, or *Earth-pea*.
Lin. spec. 1029. *fyſt.* 662. *Reich.* 3. 462. *hort. cliff.* 367. 3. *upſ.* 216. *Mor. hiſt.* 2. 51. *ſ.* 2. *t.* 23. *f.* 1.
*Viciæ ſimilis ſupra & infra terram ſiliquas gerens. *Baub. pin.* 345.
Arachidna ſ. Aracoides Honorii Belli. *Baub. hiſt.* 2. 323. *Raii hiſt.* 918.
A. cretica. *Park. theat.* 1069. 1. *f.* 1070. 1.
Peduncles one-flowered longer than the calyx, tendrils two-leaved quite ſimple.
5. Lathyrus Cicera. *Flat-podded Lathyrus* or *Dwarf Chichling-Vetch.*
Lin. ſpec. 1030. *Reich.* 3. 463. *Hall. helv. n.* 339. *Scop. carn. n.* 891. *Sauv. monſp.* 193.
L. ſativus flore purpureo. *Baub. pin.* 344. *Tourn. inſt.* 395? *Raii hiſt.* 896. 14? *Ger. emac.* 1230. *f.* 3?
L. flore rubro. *Baub. hiſt.* 2. 307?
L. fl. coccineo. *Raii hiſt.* 896.—et, ſylveſtris flore vario ex albo & coccineo. *Raii exter.* 60.
Peduncles one-flowered, tendrils two-leaved, legumes ovate compreſſed channelled on the back.
6. Lathyrus ſativus. *Common Lathyrus* or *blue Chichling-Vetch.*
Lin. ſpec. 1030. *Reich.* 3. 463. *hort. cliff.* 367. 4. *upſ.* 216. *Gærtn. fruct.* 2. 331. *Hall. helv. n.* 438. *Scop. carn. n.* 889. *Neck. gallob.* 306. *Krock. ſilef. n.* 1163. *Curt. magaz.* 115.
L. filiqua latiori. *Riv. tetr. t.* 47.
L. anguloſo ſemine. *Baub. hiſt.* 2. 306. *cum ic. Fuchſ. Mor. hiſt.* 2. 2. 8.
L. annuus, flore cæruleo, ochri filiqua. *Herm. lugdb.* 357.
L. anguſtiore gramineo folio. *Lob. adv.* 498. *obſ.* 517. *cum ic. Dod. ic.* 2. 69.
L. ſ. Cicercula. *Dod. frum.* 113. 114. *pempt.* 523. *frag.* 56. *ic.* 55. *fig. Fuchſ.*
L. ægyptiacus. *Haſſelqu. it.* 521? *Mor. hiſt.* 2. 3. 3. Cicercula ægyptiaca. *Cluſ. hiſt.* 236?
Ervum. *Fuchſ. hiſt.* 571.
β. L. ſativus, flore fructuque albo. *Baub. pin.* 343. *Raii hiſt.* 896. *Ger. emac.* 1229. 2.
Peduncles one-flowered, tendrils two or four-leaved, legumes ovate compreſſed two-edged at the back.
[7. Lathyrus inconſpicuus. *Small-flowered Lathyrus.*
Lin. ſpec. 1030. *fyſt.* 662. *Reich.* 3. 463. *Jacqu. hort.* 1. 37. *t.* 86. *Villars dauph.* 3. 443.
L. orientalis, flore vix conſpicuo. *Boerh. lugdb.* 2. 42.
Peduncles one-flowered ſhorter than the calyx, tendrils two-leaved ſimple, leaflets lanceolate.]
8. Lathyrus ſetifolius. *Narrow-leaved Lathyrus.*
Lin. ſpec. 1031. *fyſt.* 662. *Reich.* 3. 464. *Ger. prov.* 494. 5. *Sauv. monſp.* 193. *Segu. ver.* 2. 82. *n.* 4.
L. montis baldi. *Riv. tetr.* 46.
L. folio tenuiore, floribus rubris. *Baub. hiſt.* 2. 308.
L. ſylveſtris major, anguſtiſſimo folio. *Baub. pin.* 344.
L. anguſtiſſimo ſ. capillaceo folio. *Baub. prodr.* 148.
Peduncles one-flowered, tendrils two-leaved, leaflets ſetaceous-linear.
9. Lathyrus angulatus.
Lin. fyſt. 662. *Reich.* 3. 464. *Hall. helv. n.* 440. *Ger. prov.* 495. *Scop. carn. n.* 890. *D'Aſſo. arrag.* 183. *Sauv. monſp.* 193.
L. gramineus floribus coccineis. *Raii exter.* 160. R.
L. anguſtiſſimo folio, ſemine anguloſo. *Tournef. inſt.* 395.—anguſtifolius humilior. *Magn. monſp.* 350.
L. folio tenuiore, flor. rubris. *Buxb. cent.* 3. 23. *t.* 42. *f.* 2.
Peduncles one-flowered awned, tendrils two-leaved quite ſimple, leaflets linear.
10. Lathyrus articulatus. *Jointed-podded Lathyrus.*
Lin. ſpec. 1031. *Reich.* 3. 465. *hort. cliff.* 368. 11. *upſ.* 217. *Gærtn. fruct.* 2. 331. *Curt. magaz.* 253.
L. hiſpanicus. *Mill. dict. n.* 5.
L. anguſtiſſimo folio, americanus variegatus. *Baub. pin.* 344.
L. fol. pinnatis. *Riv. tetr. t.* 48. ſec. Gærtn.
Clymenum hiſpanicum, flore vario, filiqua articulata. *Tournef. inſt.* 396. *Mill. fig. t.* 96.
β. L. anguſtifolius humilior. *Baub. pin.* 344.
Peduncles one or two-flowered, tendrils many-leaved, leaflets alternate.

With two-flowered peduncles.

11. Lathyrus odoratus. *Sweet Lathyrus* or *Pea.*
Lin. ſpec. 1032. *Reich.* 3. 465. *hort. cliff.* 368. 9. *upſ.* 216. *Curt. magaz.* 60.
α. Floribus albis. *White-flowered Sweet Pea.*
β. Alis carinaque albis, vexillo carneo. *Old Painted Lady Pea.*
γ. Alis carinaque carneis, vexillo roſeo. *New Painted Lady Pea.*
δ. Alis carinaque pallide cæruleis, vexillo atropurpureo.
ε. Carina pallide violacea, alis ſaturate violaceis, vexillo atropurpureo.
Peduncles two-flowered, tendrils two-leaved, leaflets ovate-oblong, legumes bifulate.
12. Lathyrus annuus. *Two-flowered yellow annual Lathyrus.*
Lin. ſpec. 1032. *fyſt.* 663. *Reich.* 3. 465. *amoen.* 3. 417. *Villars dauph.* 3. 441.
L. hiſpanicus. *Riv. tetr. t.* 44.—fl. luteo. *Tournef. inſt.* 395.
L. bœticus flore luteo. *Park. theat.* 1064. 8. *Raii hiſt.* 895.
L. ſativus flore luteo. *Ger. emac. app.* 1628.
Peduncles two-flowered, tendrils two-leaved, leaflets enſiform, legumes ſmooth, ſtipules two-parted.
[13. Lathyrus fruticoſus. *Shrubby Lathyrus.*
Gouan. ic. 58. *n.* 92. *t.* 84.
Stem ſhrubby, peduncles two-flowered, leaves pinnate tomentoſe.]
14. Lathyrus tingitanus. *Tangier Lathyrus* or *Pea.*
Lin. ſpec. 1032. *fyſt.* 663. *Reich.* 3. 466. *Jacqu. hort.* 1. 18. *t.* 46. *Curt. magaz.* 100.
L. ting. filiquis orobi, flore amplo ruberrimo. *Mor. hiſt.* 2. 57. *n.* 1.
L. ting. fl. amplo ruberrimo. *Raii hiſt.* 897.
Peduncles two-flowered, tendrils two-leaved, leaflets alternate lanceolate ſmooth, ſtipules creſcent-ſhaped.
[15. Lathyrus Clymenum. *Various-flowered Lathyrus.*
Lin. ſpec. 1032. *Reich.* 3. 466. *hort. cliff.* 368. 10. *upſ.* 217.
L. vicioides, vexillo rubro, labialibus petalis roſtrum ambientibus cæruleis, ſiliqua plana. *Mor. hiſt.* 2. 56.
Clymenum hiſpanicum, flore vario, ſil. plana. *Tournef. inſt.* 396.
Peduncles two-flowered, tendrils many-leaved, ſtipules toothed.]

Peduncles many-flowered.

16. Lathyrus hirſutus. *Hairy Lathyrus.*
Lin. ſpec. 1032. *fyſt.* 663. *Reich.* 3. 466. *Huds. angl.* 315. *Wilber. arr. ed.* 3. 633. *Hall. helv. n.* 437. *Pollich pal. n.* 677. *D'Aſſo arrag. n.* 684. *Sauv. monſp.* 139. *Villars dauph.* 3. 441.
L. anguſtifolius filiqua hirſuta. *Baub. pin.* 344.
L. fil. hirſuta. *Baub. hiſt.* 2. 305. *Riv. tetr. t.* 43. *Raii hiſt.* 896. *ſyn.* 320.
L. arvenſis filiquis hirſutis. *Mor. hiſt. ſ.* 2. *t.* 2. *f.* 6.
Peduncles commonly three-flowered, tendrils two-leaved, leaflets lanceolate, legumes hirſute, ſeeds rugged.
17. Lathyrus tuberoſus. *Tuberous Lathyrus.*
Lin. ſpec. 1033. *Reich.* 3. 466. *hort. cliff.* 367. 5. *upſ.* 216. *Hall. helv. n.* 435. *Pollich pal. n.* 678. *Sauv. monſp.* 194. *Ger. prov.* 495. 8. *Villars dauph.* 3. 443. *Krock. ſilef. n.* 1164. *Gmel. ſib.* 4. 6. *Pall. it.* 1. 319. *Crantz. auſtr.* 381. *Curt. magaz.* 111.
L. arvenſis. *Riv. tetr. t.* 42.——repens tuberoſus. *Baub. pin.* 344. *Mor. hiſt. ſ.* 2. *t.* 2. *f.* 1.
Chamæbalanus leguminoſa. *Baub. hiſt.* 2. 324. *Raii hiſt.* 895.
Terræ glandes. *Dod. cer.* 168. *pempt.* 550. *Lob. ic.* 2. 70. *f.* 2. *Ger.* 1057. *emac.* 1237.
L. arv. f. terræ glandes. *Park. theat.* 1061. *f.* 4.
Apios. *Fuchſ. hiſt.* 131.
Peduncles many-flowered, tendrils two-leaved, leaflets oval, internodes naked.

18. Lathyrus

18. Lathyrus pratensis. *Meadow Lathyrus.*
Lin. spec. 1033. *fysl.* 663. *Reich.* 3. 467. *hort. cliff.* 367. 6. *fl. suec. n.* 647. *Hudf. angl.* 317. *Wither. arr. ed.* 3. 633. *Curt. lond.* 3. 21. 170. *Lightf. scot.* 391. *Fl. ruff. t.* 52. *Hall. helv. n.* 436. *Scop. carn. n.* 893. *Neck. gallob.* 305. *Pollich pal. n.* 679. *Fl. dan. t.* 527. *Villars dauph.* 3. 443. *Krock. filef. n.* 1165. *Gmel. fib.* 4. 5. *Riv. tetr. t.* 43.
L. fylveſtris luteus, foliis viciæ. *Baub. pin.* 344. *Mor. hiſt. ſ.* 2. *t.* 2. *f.* 2.
L. lut. fylv. dumetorum. *Baub. hiſt.* 2. 304. 2. *Raii hiſt.* 894. *ſyn.* 320.
L. fylv. flore luteo. *Ger. emac.* 1231. 6. *Park. theat.* 1061. 1.
Peduncles many-flowered, tendrils two-leaved quite ſimple, leaflets lanceolate.
[19. Lathyrus ſylveſtris. *Wild Lathyrus* or *narrow-leaved Everlaſting Pea.*
Lin. ſpec. 1033. *fysl.* 663. *Reich.* 3. 467. *hort. cliff.* 367. 8. *fl. ſuec. n.* 644. *Hudſ. angl.* 316. *Wither. arr. ed.* 3. 634. *Curt. lond. n.* 64. *Lightf. ſcot.* 392. *Relh. cant. n.* 521. *Hall. helv. n.* 434. *Neck. gallob.* 305. *Pollich pal. n.* 680. *Villars dauph.* 3. 444. *Krock. ſilef. n.* 1166. *Crantz. auſtr.* 378. *Cluſ. hiſt.* 2. 229. 2. *Dod. pempt.* 523. 2. *Park. theat.* 1063. 3.
L. fylv. major. *Baub. pin.* 344.
L. ſylvaticus. *Riv. tetr. t.* 39.
L. anguſtifolius alter. J. B. *Mor. hiſt. ſ.* 2. *t.* 2. *f.* 4.
Lathyri majoris ſpecies flore rubente & albido minore dumetorum, ſ. Germanicum. *Baub. hiſt.* 2. 302. 2. *Raii hiſt.* 894. *ſyn.* 319.
Ervum ſylveſtre. *Fuchſ. hiſt.* 572.
Peduncles many-flowered, tendrils two-leaved, leaflets enſiform, internodes membranaceous.]
20. Lathyrus latifolius. *Broad-leaved Lathyrus* or *Everlaſting Pea.*
Lin. ſpec. 1033. *fysl.* 663. *Reich.* 3. 468. *hort. cliff.* 367. 7. *upſ.* 217. *fl. ſuec. n.* 645. *Hudſ. angl.* 316. *Wither. arr. ed.* 3. 634. *Relh. cant. n.* 520. *Fl. ruſſ. t.* 8. *Hall. helv. n.* 433. *D'Alſo arrag. n.* 687. *Villars. dauph.* 3. 445. *Krock. ſilef. n.* 1167. *Mill. illuſtr. Garid. prov.* 271. *t.* 108. *Baub. pin.* 344.
L. major latifolius. *Ger. emac.* 1229. *Raii hiſt.* 894. *ſyn.* 319. *Mor. hiſt. ſ.* 2. *t.* 2. *f.* 3.—flore purpureo, ſpecioſior. *Baub. hiſt.* 2. 303. — maj. perennis. *Park. theat.* 1061.
L. narbonenſis. *Riv. tetr. t.* 40.
Peduncles many-flowered, tendrils two-leaved, leaflets ovate or lanceolate, internodes membranaceous.
21. Lathyrus heterophyllus.
Lin. ſpec. 1034. *Reich.* 3. 468. *fl. ſuec. n.* 646. *Hall. helv. n.* 432. *Sauv. monſp.* 193. *Villars dauph.* 3. 445. *Krock. ſilef. n.* 1168.
L. major narbonenſis anguſtifolius. *Baub. hiſt.* 2. 304. *Raii hiſt.* 894.
Peduncles many-flowered, tendrils two and four-leaved, leaflets lanceolate, internodes membranaceous.
22. Lathyrus paluſtris. *Marſh Lathyrus.*
Lin. ſpec. 1034. *Reich.* 3. 468. *hort. cliff.* 368. 12. *fl. lapp. n.* 271. *fl. ſuec. n.* 648. *Hudſ. angl.* 317. *Wither. arr. ed.* 3. 635. *Lightf. ſcot.* 392. *Relh. cant. n.* 522. *Engl. bot.* 169. *Retz. obſ.* 1. 24. *Hall. helv. n.* 431. *Pollich pal. n.* 681. *Weber. ſpicil.* 20. *Fl. dan. t.* 399. *Krock. ſilef. n.* 1169.
L. peregrinus, foliis viciæ, flore ſubcæruleo pallideve purpuraſcente. *Baub. pin.* 344.
L. viciæformis ſ. Vicia lathyroides. *Raii hiſt.* 899. *ſyn.* 320.
Vicia lathyroides. ſ. Lathyrus viciæformis. *Pluk. phyt. t.* 71. *f.* 2.
Peduncles many-flowered, tendrils many-leaved, ſtipules lanceolate.]
23. Lathyrus piſiformis. *Siberian Lathyrus.*
Lin. ſpec. 1034. *fysl.* 663. *Reich.* 3. 469. *dec.* 39. *t.* 20. *Leers herborn. n.* 564. *Gmel. fib.* 4. 7. *n.* 4. *t.* 1.
Peduncles many-flowered, tendrils many-leaved, ſtipules ovate broader than the leaflet.

DESCRIPTIONS, *&c.*

1. [Root annual, fibrous. Stem from a foot to eighteen inches or more in height, trailing or climbing, four-cornered, ſmooth. Leaves none, except on the young plants, which ſoon after they come up are uſually furniſhed with one or more pair of leaves ſimilar to thoſe of the other ſpecies, but totally diſappearing as the plants advance. Stipules in pairs, large, blunt, on each ſide near the baſe furniſhed with a tooth, glaucous, ribbed on the under ſide, quite entire, ſmooth, larger towards the top of the ſtem. Tendrils ſolitary, ſimple, alternate, horizontal, oppoſite to the pedunckes. Flowers ſmall, ſolitary, axillary. Peduncles longer than the ſtipules, four-cornered, with a minute awl-ſhaped bracte, at the baſe of each flower. Calyx divided almoſt to the baſe: ſegments equal, ſmooth, almoſt as long as the corolla, ribbed. Corolla; ſtandard yellow ſtriped on the inſide with blue lines; wings yellow, nearly round, the length of the keel, with two unequal paler claws; keel pale ſulphur-coloured, cloven behind. Germ ſmooth. Legume an inch in length, broadiſh, flattened; containing ſeven or eight, roundiſh, ſhining ſeeds[a].

Native of moſt parts of Europe, in corn fields, chiefly in light land: flowering in june, july, and auguſt. About Totnenham and Enfield, but not common near London. Between Norwich and Bungay. In Cambridgeſhire not uncommon.

2. *Crimſon Graſs-Vetch* is alſo an annual plant. Stem upright, ſimple, angular, twiſted, ſlightly hairy. Leaves alternate, entire, ſmooth, enſiform, reſembling thoſe of graſſes. Stipules very ſmall, ſpreading, in pairs, at the baſe of the leaves. Tendrils none. Peduncles axillary, ſlightly hairy. Bracte one, ſmall, awl-ſhaped, at the baſe of each flower. Corolla beautiful crimſon. Legume linear, nearly cylindrical, bending downwards, ſmooth or ſlightly downy, terminated by a ſtraight ſtyle[b].

The young plant, before it flowers, is ſo like a graſs, that even an experienced botaniſt might miſtake it for ſuch, eſpecially among mowing graſs, where it uſually occurs; it is alſo found on the borders of corn fields, among buſhes and in woods, but not very common, at leaſt with us, though doubtleſs it is frequently overlooked. Ripton in Huntingdonſhire. Hadnam in Cambridgeſhire. Near Ampthill-park in Bedfordſhire. Coton-field, Stafford. Belmont, Staffordſhire. Hadforwood near Droitwich. About Teignmouth. Near Wick Cliffs. Near London, I have obſerved it about Dulwich, Peckham, Streatham, &c.

Its ſimple graſſy leaves diſtinguiſh this from the other ſpecies. The elegant flowers of a rich crimſon render it deſerving of a place in gardens[c].] Mr. Miller informs us, that ſometimes two flowers are found on one pedunele.

3. This alſo is an annual plant, ſmooth all over. Stem angular, three-ſided at top. Leaves petioled, acute, nerved. The upper petioles have a very ſimple tendril. Stipules linear, ſharp at both ends. Peduncles ſhort. Flowers ſmall, like thoſe of the preceding. Legume ſubcylindric, longitudinally wrinkled, having a long point, toruloſe, with a ſlightly keeled duſky-violet back; containing ten or twelve ſpherical, ſmooth, duſky ſeeds, ſprinkled with darker dots[d].

4. Root annual, fillform, with here and there ovate, feſſile tubercles. Stems ſeveral, weak, ancipital or two-edged. Petioles linear, terminated by a ſlender tendril, with two lanceolate leaflets, and two ovate acute ſtipules having a toothlet at the baſe. Flowers pale purple. Peduncles ſolitary, four-cornered, longer than the leaves. There are other ſtems, deſtitute of leaves, roundiſh, creeping under ground, whitiſh, and bearing flowers and fruit abſolutely perfect, and reſembling thoſe on the ſtems above ground, except that the flowers are ſmaller, and do not expand[e].

Native of the Levant. Cultivated in 1680, in the botanic garden at Oxford[f]. The ſeeds were ſent from Aleppo by Robert Huntingdon, fellow of Merton College[g].

[a] Curtis and Woodward. [b] Woodward. [c] Engl. bot.
[d] Retz. [e] Linn. ſyſt. [f] Hort. kew. [g] Mor. hiſt.

5. In size this takes the middle place between the preceding and following species. Petioles nor membranaceous on the side. Corollas red. Legumes channelled on the back, but not with sharp edges, as in the last and next following sorts. Legumes broad, oval-oblong[a].

Haller thus distinguishes this from *sativus*. The whole plant is lower, but the leaves are larger, broader and elliptic. Peduncles stouter, only half the length, being scarcely four lines long. Flowers only half the size, with a much smaller standard, of a dusky blood-red colour. Legume longer, narrower, rounder, with a short vestige of wings on the back, and a groove between. Seeds four.

Root annual, simple. Stems several, from a foot to two feet in height, simple, angular, winged, procumbent unless supported by other plants. Petioles from half an inch to an inch and more in length, coming out at intervals from an inch to two inches, at an acute angle with the stem, consisting of a nerve with two membranes on each side: each of these produces two grass-like lanceolate-linear leaves, from one inch to four inches in length, and from two to six lines in breadth, three-nerved and smooth: nerve of the petiole produced about an inch beyond the leaf, ends in a tendril usually trifid. At the base of the petiole two stipules, large in proportion to the plant, smooth, frequently as wide as the leaf, seldom wider, broad-lanceolate, from a broad base putting out downwards an ear or hook with one or two teeth. From the axils of these stipules, almost the whole length of the stem arise stout peduncles, not winged, the shortest half an inch long, longer towards the upper part till they attain the length of an inch and more: about the middle or rather nearer to the flower they have two very slender bristles, and they are bowed by the weight of the growing legume. Flower of a middling size. Calyx smooth; segments a little unequal, the two upper approximating, lowest narrower and longer. Corolla white or pale yellow, or red and white, very seldom blue, sometimes quite red or deep purple. Legume from one to two inches long, broad, compressed, difform, ovate-oblong, smooth, netted-veined, terminated by the permanent style, having two wings running along the back. Seeds three, four or five, smaller than peas, tawny with dots of a deeper colour, angular, difform[b].

Native of France and Spain. Cultivated here in 1633. It flowers in june and july.

6. The habit of this is the same. The root also is not different. Leaves longer, narrower. Stipules of the same shape, but commonly only half the width. Peduncles from one to two inches long, weaker, but having two bristles as that has. Flower double the size, most commonly white, sometimes tinged with purple, or having a rose-coloured standard, or blue, or blue and white variegated. Legumes broader, shorter, with the wings on the back more apparent, insomuch that the groove between them is of considerable depth. Notwithstanding these differences, this and the preceding are perhaps no more than varieties[c].

In our gardens it is distinguishable by the blue colour of the corolla, but we have sometime the milk-white variety. The seed-pods afford a more certain mark of distinction, being unusually short, broad, and winged on the back[d].

Native of France and Spain; commonly sown in Switzerland for soiling horses, but not indigenous of that country. The French name is *Gesse*. It flowers in june and july; and was cultivated in 1739, in the botanic garden at Chelsea[e].

In several parts of the Continent a white, light pleasant bread is made from the flour of this pulse, but it produced such dreadful effects in the last century, that the use of it was forbid by an edict of George Duke of Wirtemberg in 1671; and this not being observed was inforced by two other edicts under his successor Leopold, in 1705 and 1714.

Mixed with Wheat flour in half the quantity, it makes a very good bread, that appears to be harmless. But bread made with this flour only has brought on a most surprising rigidity of the limbs in those who have used it for a continuance; insomuch that the exterior muscles could not by any means be reduced, or have their natural action restored. These symptoms usually appeared on a sudden, without any previous pain; but sometimes they were preceded by a weakness and disagreeable sensation about the knees.

Baths both hot and cold, fomentations and ointments of various kinds have been tried without effect; insomuch that it is regarded as incurable, and being neither very painful nor fatal, those who are seized with it usually submit to it with patience.

Swine fattened with this meal lost the use of their limbs, but grew very fat lying on the ground. A horse fed some months on the dried herb was said to have his legs perfectly rigid. Kine are reported to grow lean on it, but sheep not to be affected. Pigeons, especially young ones, lose the power of walking by feeding on the seed. Poultry will not readily touch it, but geese eat it without any apparent damage. In some parts of Switzerland cattle feed on the herb without any harm. It would be worth enquiring therefore whether the soil may not contribute something to the ill qualities of the plant: and it is remarked that the seed from a strong, fat, moist soil, is much more deleterious than from a light dry one[f].

Fabbroni from Florence in 1786 says that the government there has cautioned the peasants against the use of Lathyrus sativus, swine having lost the use of their limbs, and become pitiable monsters by being fed on this pulse exclusively. The peasants however eat it boiled, or mixed with wheat flour, in the quantity of one-fourth, without any harm.

The poisonous Lathyrus from Barbary is L. semine punctato of Cafp. Bauhin, and seems to be only a variety; for in the crops of L. sativus in Italy they find black seeds striped with white, as in the African seed. Fabbroni suspects it to be a mule between L. sativus and Cicera, for the flower and seed partake of the characters of both; having a black seed marked with white, and a white banner with a red keel to the corolla[g].

7. This is a small plant, a span or at most a foot in height. Stems obscurely triangular. Stipules subulate-lanceolate, with the hinder tooth acute. Petioles very short; the lower terminated by a very short awl-shaped bristle; the upper elongated into a filiform tendril. Leaflets striated underneath, and acuminate. Calyx very small and shorter than the stipules from the axils of the petioles on a scarcely apparent peduncle. Corolla scarcely longer than the calyx, pale. Legume almost the length of the leaves, but broader, smooth, stiff and straight[h].

Root annual. Stems several, weak, a foot or eighteen inches in height. The whole plant smooth. Leaflets either ensiform, or narrow lanceolate, with three or five nerves underneath. Stipules almost as long as the petioles, with the lower hook much shortest, and a minute toothlet in the middle. Peduncles axillary, solitary, in some individuals shorter than the calyx, in others twice or thrice as long, terminated by a bristle, which also varies in length. Standard and wings of the corolla deep red; keel pale. Legume linear, veined, acuminate, scarcely compressed, containing eight seeds at most, which are dusky and rounded-angular[i].

Native of the Levant. Cultivated by Mr. Miller in 1739[k].

Monf. Villars says that it is found wild in Dauphiné; where they have also another Lathyrus with one-flowered peduncles, which he names *bicuritus*, on account of the two-eared stipules, broader than the leaves. The stems are straight and quadrangular: the leaves linear-lanceolate and conjugate: the legume oblong, containing six seeds.

8. Gerard thus distinguishes this from the next.

[a] Linn. spec. [b] G. D. Duvernoy Thesis, 1770.
[c] Duvernoy thes. [d] Curtis. [e] Hort. kew.
[f] Duvernoy. [g] Fabbroni's letters in M.S.S. Banks.
[h] Linn. spec. [i] Jacquin. [k] Hort. kew.

The ſtem is ſimple or at moſt double, ſubſolitary as Linnæus calls it, longer, procumbent, almoſt naked. Leaflets ſetaceous, narrower, with the nerves not ſo conſpicuous. Stipules linear, with a longer appendicle. Petiole thrice the length of the ſtipule. Legume ſubovate, turgid. Seeds two or three, ſpherical, very ſmooth.

About Montpelier, on monte Baldo, Italy. Cultivated in 1739 by Mr. Miller [1] who deſcribes it as an annual plant, ſeldom more than ſix or eight inches high, with bright ſcarlet flowers.

[9. This is an annual plant as well as the laſt; but it produces many ſtems, which are diffuſed, a ſpan long, with the internodes approximating. Leaflets linear, gradually longer and narrower, nerved. Stipules lanceolate. Petiole about the ſame length with the ſtipule. Legume oblong, broadiſh, compreſſed, a little curved in at the tip. Seeds five or ſix, angular [2]

Allione has given a new ſpecies under the name of *L. coccineus*, which he diſtinguiſhes from this, by its ſcarlet flowers, lanceolate leaves with five nerves, and a nerved torofe legume, not compreſſed and broad, as in that, and containing a greater number of ſeeds, which are nicely round, not angular [3].

He gives the ſame ſynonym of Ray, which Duvernoy aſſigns to *L. Cirrea*, n. 5. and that of Seguier, which Linnæus and others give to *ſetifolius*. Gerard ſays, that all the ſynonyms of *angulatus* are uncertain, except thoſe of Tournefort, Magnol and Buxbaum.

10. The leaves have uſually four leaflets; the lower petioles are lanceolate and leafleſs. Stipules mucronate at both ends. The flower has the keel of the Pea, waved on the ſides, and not oblique as in Lathyrus. Standard bright red, with white wings and keel [4]. Legume oblong, narrow, attenuated to both ends, compreſſed, ſwelling over the ſeeds. Peduncles of the ſeeds forked. Seeds four, elliptic lens-ſhaped, ſmooth, clouded with aſh-colour and brown [5].]

Miller ſays, it is an annual plant with a climbing ſtalk which riſes near three feet high; that the leaves have ſeveral leaflets, terminated by very long claſpers; that the peduncles are five or ſix inches long, with two flowers, one above another; that it flowers in june and july, and the ſeeds ripen in autumn.

[Native of the South of Europe. Cultivated in the botanic garden at Cheliea, in 1739 [6].]

11. The *Sweet Pea* as it is commonly called, is an annual plant, which riſes from three to four feet high, by means of its long claſpers or tendrils. The flower-ſtalks come out at the joints, are about ſix inches long, and ſuſtain two large flowers, which have a ſtrong odour; and are ſucceeded by oblong hairy pods, having four or five roundiſh ſeeds in each.

In the common ſort the corolla has dark-purple ſtandards, with the keel and wings of a light blue. (variety *b*.) Other varieties are the white; the pink with a white keel, and the wings pale bluſh-colour; [the pink or bluſh-coloured ſtandard with both keel and wings white; the roſe-coloured ſtandard with the wings and keel pale blue: theſe that have a mixture of red with white or pale blue are called Painted Ladies. There is alſo a variety of the common dark ſort, with the keel pale violet, and the wings dark violet, &c.

According to Linnæus the common dark ſort is a native of Sicily, and the painted Lady of Ceylon. This flower now become ſo common was not known to our gardens in the time of Parkinſon or Evelyn. It was cultivated by Dr. Uvedale at Enfield in the year 1700 [7]. Mr. Petiver obſerved it there with Dr. Plukenet, and afterwards at Cheliea and elſewhere. He inſerts it in his liſt of rare plants obſerved in 1713 [8].]

12. This riſes with a climbing ſtalk five or ſix feet high, having two membranes or wings running from joint to joint. Leaflets long and narrow. Peduncles long, each ſuſtaining two pale-yellow flowers, which are ſucceeded by long taper pods, containing ſeveral roundiſh ſeeds.

[It has the appearance of the larger perennial *Lathyri* with yellow flowers, but differs in being annual, whence Linnæus gave it the trivial name of *annuus*, which is otherwiſe improper, all the ſpecies of the two firſt diviſions, except the thirteenth, being likewiſe annual. The ſtem is angular and lofty, the leaflets ſmooth, and three times as long as the common petiole, which has two linear ſemiſagittate ſtipules at its baſe, about half its length, and briſtles in three twiſted tendrils. The peduncles commonly bear only one ſmall yellow flower, and end in a ſort of awn. Legume long, containing nine ſeeds [9].

Linnæus deſcribes the ſtipules as two-parted, very narrow, with the upper ſegment awl-ſhaped, the lower linear and even almoſt capillaceous.

Native of France and Spain.] Mr. Miller, ſays he has alſo received the ſeeds from Siberia. Cultivated in 1640, by Mr. John Coys, according to Parkinſon [1].

13. Stem woody, two feet high, much branched. Branches round, tomentoſe, hanging down. Leaves alternate. Leaflets about twenty pairs or more, ovate, white underneath, reflex at the edge, ſubſeſſile. Stipules awl-ſhaped, ſhort, deciduous, tomentoſe, inſerted into the petiole. Flowers axillary, on ſhort, white-tomentoſe peduncles, with one bractle to each flower. Calyx globular. Corolla yellow. Legume oblong, ſtraight, hanging down, narrower at the baſe, ſubtomentoſe; containing from eight to ten obovate ſeeds.

Native of Peru, on the hills near Huanuco. Cultivated in the royal garden at Madrid before 1791, and flowering there from july to november.

It has the habit of *Orobus* with the ſtyle of *Lathyrus* [2].]

14. Stem four or five feet high. Leaflets veined. Peduncles ſhort, ſuſtaining two large flowers with purple ſtandards, the wings and keel bright red. Legumes long, jointed; containing ſeveral ſeeds.

[The whole plant is very ſmooth. Stem branched, running out on each ſide into a ſlender ſharp wing. Petioles angular, ending in bifid, trifid or ſimple tendrils. Stipules lanceolate, acuminate, produced downwards into an earlet, ſimilar but much ſmaller. Peduncles ſometimes one-flowered. Calyx under the banner purple. Keel much ſhorter and narrower than the wings. Legume browniſh, ſwelling over the ſeeds, which are ſix or ſeven in number, ſcarcely angular, and variegated with black and brown [3].

Native of Barbary. Cultivated in 1680, by Robert Moriſon, M. D. [4] who had the ſeeds from Tangier by Alexander Balain, Conſul there; and afterwards by Robert Spotſwood, Surgeon at the ſame place. It flowers in june and july; and although it has not the agreeable ſcent, or variety of colours, or continuance in blow of the Sweet Pea, yet it is uſually ſown in our gardens with other annuals [5].

15. Native of the Levant.]

16. Root perennial (all other authors ſay annual). Stalks three or four, weak, near two feet long. Peduncles about four inches in length, ſuſtaining two purple flowers, (frequently three). Pods rough, little more than an inch long, containing three or four roundiſh ſeeds.

[Stems angular, twiſted, ſlightly hairy. Leaflets ſlightly hairy, with three ſtrong ribs, terminated by an awn. Petioles triangular, furrowed above. Tendrils moſtly dividing into three. Stipules ſemiſagittate, pointed, with long appendages, two at the baſe of each petiole. Flowers an inch or an inch and half from each other. Bractes awl-ſhaped, ſmall, about a quarter of an inch beneath the terminating flower, and at the baſe of the ſhort pedicel of the lower. Calyx one-third of the corolla in length; ſegments equal, extending half way down. Corolla purple, with yellow lines within. Legumes ſhort, covered with hairs, each hair proceeding from a gland [6].

Native of many parts of Europe. With us not common.] Mr. Miller found it in places ſpread over with brambles near Hockley in Eſſex. [It has been obſerved in ſeveral parts of that county, as about

[1] Hort. kew. [2] Ger. prov. [3] Fl. ped. n. 1222.
[4] Linn. ſpec. [5] Gaertner. [6] Hort. kew.
[7] Ibid. [8] Philoſ. tranſ. vol. 28. 210.

[1] Villars. [2] Hort. kew. [3] Cavanilles. [4] Jacquin.
[5] Hort. kew. [6] Curtis. [7] Woodward.

Hockley

Hockley and Raleigh, and elſewhere in Rochford hundred; near Munden-church and Laydon-hall in Dengy hundred. On hills north of Penſford, on the Briſtol road, and between Penſford and Keynſham in Somerſetſhire. It flowers in july.]

17. Root creeping, putting out irregular tubers about as big as thoſe of the Pig-nut, covered with a brown ſkin. Theſe ſhoot up ſeveral weak, trailing ſtalks. Pedunckes weak, about three inches long, each ſuſtaining two flowers. Corollas deep red.

[Stems about a foot high, obſcurely quadrangular, branched, ſmooth. Leaves alternate, petioled; leaflets ſubſeſſile, acuminate, ending in an awn, bright green, very ſmooth, involute. Stipules ſagittate, quite entire. Peduncles axillary five or ſix-flowered. Legume long, containing ten or twelve ſeeds *.] Theſe are ſeldom produced in England. This plant is cultivated in Holland for the roots, is ſold in the markets and commonly eaten there. [With us only for ornament, being a beautiful hardy perennial, reſembling the Everlaſting Pea, but of an humbler growth. It ſhould however be introduced with caution, on account of its creeping roots, and is perhaps better ſuited to the unclipped hedge of the pleaſure-ground, than the border of the flower-garden †.

Native of France, Germany, Flanders, Holland, Switzerland, Auſtria, Siberia. It flowers in july and auguſt; and was cultivated in 1640 by Parkinſon ‡, who calls it *Peaſe Earth-Nut*, as does alſo Gerarde.

18. Root perennial, creeping. Stems a foot or eighteen inches, and ſometimes three feet or even more in length, when without ſupport procumbent, but climbing by means of tendrils, and having the appearance of being upright in meadows, and eſpecially among buſhes; they are obtuſely quadrangular, and much branched. Leaflets quite entire, ſmooth or ſlightly villoſe underneath only, marked with three nerves, on triangular, furrowed peticles. Stipules in pairs, large, ſhaped like the head of a halbert, or half the head of an arrow, frequently having ſharp proceſſes at the baſe. Flowers in a raceme, directed one way, from four or five to eight or ten, on axillary pedunckes, four or five inches long, four-cornered: each on a hairy pedicel, with a very minute awl-ſhaped bracte at the baſe. Calyx one-third of the length of the corolla, divided half way into five awl-ſhaped ſegments, which are rather unequal, and ſomewhat hairy. Corolla yellow. Legumes an inch and half long, compreſſed, ſmooth, black, containing from ſeven or eight to twelve globular ſhining ſeeds, of a yelloviſh or brown colour, with ſmall purple dots.

Native of moſt parts of Europe, in meadows and paſtures, woods, thickets and hedges, flowering from june to auguſt.

According to Linneus, horſes, kine, ſheep and goats eat it. Swine refuſe it: and the Badger is ſaid to feed upon it.

In old authors this plant is much reprobated as a vile weed, that ſpreads much by means of its creeping roots, and accordingly Mr. Miller will not have it admitted into gardens. Many modern writers however recommend it as an excellent food for cattle, and not without reaſon, ſince its quality is good, and it bears a large burden of ſucculent leafy ſtalks. Among its patrons we may reckon Linneus, Haller, Schreber, Anderſon, Curtis and Young.

Mr. Swayne aſſerts, that it does not ſeem to be at all agreeable to cattle, and that where they have a choice of feed they ſeldom touch it. But with reſpect to this and many other leguminous plants, we are not to conclude that they are diſagreeable to cattle, becauſe they are not eaten in their fruiting ſtate. They may ſtill be exceellent in hay, and the cattle may be fond of the young ſucculent herbage. This, and other leguminous plants are beſt mixed with good graſſes in permanent meadows. Mr. Curtis informs us that he obſerved a piece of ſtiff ſoil, belonging to Lord Loughborough, near Mitcham, which produced an excellent crop, conſiſting chiefly of this plant, and Feſtuca pratenſis. There could not well be a better mixture than this made by art, for ſtrong land.

A difficulty which Mr. Swayne mentions is not ſo eaſily got over. This is, that it produces very few ſeeds, and that thoſe few are for the moſt part devoured by a ſpecies of Curculio. Probably with care in a garden, a ſufficient quantity of ſeed might be produced; or if not, we muſt have recourſe to the ordinary methods of increaſing perennial plants, by the roots, layers or cuttings.

It is called in Engliſh, Common yellow or meadow Vetchling, and Tare Everlaſting.

19. Root perennial. Stems ſix feet or more in height, climbing or trailing, ſpreading widely, branched, winged and ſmooth. Leaves petioled: leaflets ending in a ſhort point, beneath three-ribbed, glandular at the baſe. Petioles three-ſided, winged, rough at the edge. Tendrils for the moſt part trifid. Stipules linear-lanceolate, half-arrow-ſhaped or awl-ſhaped, very narrow, hooked, or bearded at bottom. Peduncles a ſpan long, ſomewhat angular, naked; with one awl-ſhaped bracte at the baſe of each pedicel, which is ſhort, bending and coloured. Flowers not more than ſix in a raceme. Corolla red and white: ſtandard large, roſe-coloured, faintly netted-veined; wings violet; keel whitiſh green. Legumes two inches long, and nearly half an inch wide, compreſſed, ſmooth, brown. Seeds ten to twelve, nearly round, blackiſh *.

This is diſtinguiſhed from *latifolius* by the leaves not being broader than the ſtem and three-ribbed, and the flowers of a much ſmaller ſize *.

Native of moſt parts of Europe. In England, between Caſtle Camps and Barrlow in Cambridgeſhire. Between Bath and Briſtol. Conway in Wales. Between Perthore and Eckington in Worceſterſhire. Shelton bank near Salop. Near Penſford, &c. Near London it is rare, in the Oak of Honour wood near Peckham. In many parts of Kent and Bedfordſhire it grows abundantly.

Though greatly inferior to L. latifolius, it is however frequently ſeen in gardens.

20. Root perennial. Stalks ſeveral, thick, climbing by means of tendrils to the height of ſix or eight feet, or even higher in woods: theſe die to the ground in autumn, and new ones riſe in the ſpring from the ſame root. Leaves ſtiff, marked with three or five ſtrong ribs, rolled in at the edge, blunt at the end, but terminating in a little point or briſtle; they are always in pairs, and on a winged petiole; at the baſe of this are large ſtipules, ſhaped ſomewhat like the head of a halbert. Tendrils multifid or branched. Peduncles eight or nine inches long. Each flower has an awl-ſhaped bracte at the baſe of the pedicel. Corolla pale purpliſh roſe-colour. Legumes an inch and half long, and half an inch in breadth.

This ſpecies is diſtinguiſhed from the narrow-leaved ſort (L. ſylveſtris) by the greater breadth of the leaves, and by the abundance and ſuperior ſize of the flowers.

Native of many parts of Europe, in hedges and woods. Mr. Ray obſerved it about the middle of the laſt century in the Cambridgeſhire woods, and it ſtill keeps its poſt, though almoſt a century and half has elapſed. Johnſon in Gerarde ſays, that great ſtore of it grows in Swainſcombe wood near Greenhithe in Kent. Rocks near Red Neeſe by Whitehaven. Severn Stoke Copſe, Worceſterſhire, &c. It flowers at the end of june and beginning of july.

It is a ſhowy plant for ſhrubberies, wilderneſs quarters, arbours, and trellis-work; but too large and rampant for the borders of the common flower-garden. Bees reſort much to it, and the flowers furniſh them with abundance of honey. It yields a great quantity both of green fodder and ſeeds; but in what degree the former might be agreeable to cattle, and the latter to pigeons or poultry, muſt be ſeen by experience.

21. Root perennial. Stems quadrangular, winged, two wings broader, three or four feet high. Leaflets nerved, ſhorter than thoſe of *L. ſylveſtris*, and longer than thoſe of *L. latifolius*. Petioles triangular, longer

* Pollich. † Curtis.
‡ Hort. kew.

* Curtis. * Withering.

than the leaves. Tendrils branched. Stipules lanceolate, scarcely wider than the ſtem. Flowers in racemes of about ſix together. Standard and wings fleſh-coloured; keel whitiſh.

By the leaves, the wings of the ſtem, and the ſize of the flowers, this is a ſpecies intermediate between *ſylveſtris* and *latifolius*[3].

Native of Sweden, Switzerland, France, Sileſia.

22. Root perennial, creeping. Whole plant ſmooth. Stems from three to four feet high when ſupported, but little branched, winged. Leaflets two or three pairs, oppoſite or rarely alternate, lanceolate, acute, glaucous beneath. Tendrils two-cleft or three-cleft. Stipules half-arrow-ſhaped. Flowers three, ſometimes to ſix or more, pointing one way, in erect racemes. Corolla vivid purpliſh blue, of great beauty. Legumes longiſh and ſmooth[4].

The wings of the ſtem are narrower than in *ſylveſtris*. The figure in Flora Danica repreſents thirteen flowers, rather red than blue.

Native of many parts of Europe, in moiſt woods and paſtures, but in England not common. Peckham-field on the back of Southwark; found by Thomas Williſel. Wood near Abingdon. Near Ranaugh and Burgh in Norfolk. Little Everſden and Bardwell ſens in Cambridgeſhire. Eaſt Fen, Lincolnſhire. Bardon hill, Chorley foreſt in Leiceſterſhire. Lancaſhire. Yorkſhire. Scotland.

23. Root perennial. Plant growing like the Pea. Stems acute-angled. Petioles often ſix-leaved (ſometimes eight). Leaflets ovate-oblong, acute. Stipules acuminate at the baſe, ſcarcely angular. Peduncles the length of the leaves. Corolla with the ſtandard and wings whitiſh with purple veins (Miller ſays blue). Standard ſmall, with the keel of Pea, and not oblique. Style longitudinally bearded above.

The leaflets are convolute as in *Piſum maritimum* and *Ochrus*; not involute, as in moſt of the *Lathyri*[5].

Native of Germany and Siberia. Cultivated by Mr. Miller in 1759. It flowers in june[6].

Lathyrus pariſienſis of Miller, n. 4. is different from all the above. It belongs to the firſt diviſion, having one-flowered peduncles.] He deſcribes it as an annual plant, with a ſlender ſtalk, about a foot high. Leaves compoſed of ſeveral narrow leaflets, placed alternately. Stipules lanceolate. The flowers come out ſingly upon pretty long peduncles: they are blue, and about the ſize of thoſe of Common Tare.

[From his ſpecimens in the Bankſian herbarium, which came from the Paris garden, it appears that the leaflets are often in two pairs, but that the number varies exceedingly from one to ſix or ſeven. Some of the tendrils are ſimple, others branched. The ſtem is winged, and the rachis of the leaves remarkably ſo. It has a glaucous hue. Miller ſeems to have confounded it with our L. paluſtris, from which it is very different.

L. magno flore, n. 14. figured in t. 160. of the figures, is nothing more than a variety of L. latifolius.] He ſays it differs from that in having much ſhorter ſtronger ſtalks; broader leaves of a deeper green; much larger flowers of a brighter red colour.

[Of Mr. Miller's laſt Lathyrus I know nothing. He calls it L. americanus; it is one of Houſtoun's plants found at La Vera Cruz, and belongs to the ſecond diviſion, having two-flowered peduncles.] It is an annual plant, with a trailing ſtalk a foot long; a ſingle kidney-ſhaped leaf, veined beneath, at each joint; peduncles very ſhort; flowers ſmall, of a deep yellow colour; ſucceeded by ſhort taper pods, including three or four ſmall roundiſh ſeeds. Houſtoun names it Niſſolia americana procumbens, folio rotundo, flore luteo.

PROPAGATION AND CULTURE.

Theſe may all be propagated by ſowing their ſeeds, either in ſpring or autumn; but thoſe which are ſowed in autumn ſhould have a light ſoil and a warm ſituation, where the plants will abide the winter, and come to flower early the following ſpring, and their ſeeds will ripen in july; but thoſe which are ſown in the ſpring ſhould have an open expoſure, and may be planted upon almoſt any ſoil, if not too wet, for they are not tender plants, nor do they require much culture: theſe ſorts ſhould all of them be ſown where they are deſigned to remain, for they ſeldom ſucceed when they are tranſplanted, unleſs it is done while the plants are young; ſo that where they are ſown for ornament, there ſhould be four or five ſeeds ſown in a ſmall patch, in different parts of the borders of the flower-garden; and when the plants come up, they ſhould be carefully kept clear from weeds; but when they are grown two or three inches high, there ſhould be ſome ſticks put down by them to ſupport them, otherwiſe they will trail on the ground, or on whatever plants ſtand near them, and become unſightly.

The eleventh ſort, with the varieties of it, are deſerving of room in every good garden for the beauty and odour of their flowers; and the fourteenth ſort is by ſome cultivated for the colour of the flowers; but there are few of the other ſorts worthy of room in gardens, except the twentieth ſort, which, if it be planted in a proper ſituation, and rightly trained, will make a fine appearance.

[6. The ſeeds of L. ſativus are ſown, in the countries where it is cultivated for fodder or the ſeed, at the end of auguſt, the beginning of ſeptember, or in the ſpring; in ſtrong ground: for in a light dry ſoil the roots are very weak, and it is apt to be deſtroyed by ſpring froſts. Its produce is very abundant, and the culture not being expenſive is very general in ſome parts of Europe.

11. The gardeners, who raiſe Sweet Peas for the London markets, ſow them in the autumn in pots, and ſecure them from ſevere weather by placing them in hot-bed frames; by which means they can bring them early to market. They may be continued in flower the whole ſummer by repeated ſowings in the ſpring. When ſown in pots they muſt be watered frequently.

17. Tuberous Lathyrus is as noxious a weed to the huſbandman as ſmall Bindweed (Convolvulus arvenſis), and equally difficult to extirpate. The tubers of the root are in high eſteem in ſome countries as an article of food, and the plant is eaſily propagated either by theſe or the ſeed. With us the former method only can be practiſed. It thrives beſt on light ground.

LATHYRUS. See *Orobus* and *Vicia*.]

LAVANDULA (à lavando; *from its uſe in fomentations and baths.*)

Lin. gen. n. 711. *Reich. n.* 769. *Schreb. n.* 965. *Tournef.* 93. *Gertn. t.* 66. *Juſſ.* 113.

Stoechas. *Tournef.* 95.

Claſſ. 14. 1. Didynamia Gymnoſpermia.

Nat. order of *Verticillat.* Raii, Moriſ. Linn. *Labiat.* Juſſ. Tournef. &c.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ovate: mouth obſcurely toothed, ſhort, permanent, ſupported by a bracte.

COR. one-petalled, ringent, reſupine. *Tube* cylindric, longer than the calyx. *Border* ſpreading: *one lip* looking upwards, larger, bifid, ſpreading: the *other lip* looking downwards, trifid: *diviſions* all roundiſh, nearly equal.

STAM. *Filaments* four, ſhort, within the tube of the corolla, deflected, of which two are ſhorter. *Anthers* ſmall.

PIST. *Germ* four-parted. *Style* filiform, length of the tube. *Stigma* two-lobed; obtuſe, converging.

PER. none. *Calyx* converging with the mouth and guarding the ſeed.

SEEDS four, obovate.

OBS. Lavandula T. *has the flowers diſpoſed in a ſimple ſpike.*

Stoechas T. *has flowers in a ſpike in ſeveral rows and ornamented with a tuft.*

ESSENTIAL CHARACTER.

Cal. ovate, obſcurely toothed, ſupported by a bracte.

Cor. reſupine. *Stam.* within the tube.

SPECIES.

1. Lavandula Spica. *Common Lavender.*

Lin. ſpec. 800. *fil.* 530. *Reich.* 3. 35. *Lin. jun. diſſ. de Lavand.* n. 1. *hort. cliff.* 303. 1. *upſ.* 162.

mat.

[3] Villars, Krocker, Haller.
[4] Engl. bot. Woodw. Retz.
[5] Linn.
[6] Hort. kew.

mat. med. 146. *Woodv. med. bot.* 150. *t.* 55. *Hall. helv. n.* 232. *Sauv. monsp.* 143. *Ger. prov.* 273. *n.* 2. *Sabb. hort.* 3. *t.* 72. *Berg. phyt.* 2. 233. *Zorn. ic.* 53.

α. L. anguſtifolia. *Narrow-leaved Lavender.*
Mill. dict. n. 2. *Bauh. pin.* 216. *Garid. aix. t.* 60.

L. officinalis. *Villars dauph.* 2. 363.

L. minor ſ. Spica. *Ger. emac.* 584. *Park. theat.* 73. *n.* 2. *Raii hiſt.* 513.

L. altera. *Dod. pempt.* 273. *Blackw. t.* 294.

Pſeudo-Nardus, quæ Lavendula vulgo. *Bauh. hiſt.* 3. 281.

β. L. latifolia. *Broad-leaved Lavender.*
Bauh. pin. 216. *Villars dauph.* 2. 363. *Blackw. t.* 295.

L. Spica. *Mill. dict. n.* 1.

L. flore cæruleo & albo. *Ger. emac.* 583. *f.* 1, 2.

L. major ſ. vulgaris. *Park. theat.* 73. *f.* 1. *Raii hiſt.* 512.

Pſeudo-Nardus, quæ vulgo Spica. *Bauh. hiſt.* 3. 280.

Leaves ſeſſile lanceolate-linear rolled back at the edge, ſpike interrupted naked.

2. Lavandula Stœchas. *French Lavender.*
Lin. ſpec. 800. *fuſt.* 530. *Reich.* 3. 36. *hort. cliff.* 303. 4. *upſ.* 162. *mat. med.* 146. *diff. n.* 2. *Sauv. monſp.* 143. *Ger. prov.* 273. *n.* 1. *Blackw. t.* 241.

Stœchas officinarum. *Mill. dict. n.* 1.

S. purpurea. *Bauh. pin.* 216.

S. ſ. Spica hortulana. *Ger. emac.* 585.

S. vulgaris. *Park. theat.* 67.

S. arabica vulgo dicta. *Bauh. hiſt.* 3. 277. *Raii hiſt.* 514.

S. brevioribus ligulis. *Cluſ. hiſt.* 1. 344.

β. Stœchas pedunculata. *Mill. dict. n.* 2.

S. cauliculis non foliatis. *Bauh. pin.* 216.

S. ſummis caul. nudis. *Ger. emac.* 586. *f.* 4.

S. longioribus ligulis. *Cluſ. hiſt.* 1. 344. *Park. theat.* 68. 3. *Raii hiſt.* 514.

S. africana purpurea, folio multifido. *Seba theſ.* 2. *t.* 36. *f.* 5.

Leaves ſeſſile linear tomentoſe rolled back at the edge, ſpike contracted comoſe, brattes ſubtrilobate.

[3. Lavandula viridis. *Madeira Lavender.*
L'Herit. ſert. angl. 19. *t.* 21. *Ait. hort. kew.* 2. 288.

Leaves ſeſſile linear wrinkled villoſe rolled back at the edge, ſpike comoſe, brattes undivided.]

4. Lavandula dentata. *Tooth-leaved Lavender.*
Lin. ſpec. 800. *fuſt.* 530. *Reich.* 3. 36. *hort. cliff.* 303. 3. *diff. n.* 3.

Stœchas dentatus. *Mill. dict. n.* 3.

S. folio ſerrato. *Bauh. pin.* 216. *Ger.* 479. *emac.* 586. *Park. theat.* 68. 4. *Raii hiſt.* 514. *Barr. ic.* 797.

S. criſpo folio. *Cluſ. hiſt.* 1. 345.

S. ſerr. & criſpo fol. *Bauh. hiſt.* 3. 279. *f.* 2.

Leaves ſeſſile linear pectinate-pinnate, ſpike contracted comoſe.

[5. Lavandula pinnata. *Pinnated Lavender.*
Lin. fuſt. 530. *diff. n.* 4. *t.* 1. *Jacqu. ic.* 1. *t.* 106. *miſc.* 2. 318. *Plak. phyt. t.* 303. *f.* 5.

Leaves petioled pinnate, leaflets wedge-form, ſpike imbricate.]

6. Lavandula multifida. *Canary Lavender.*
Lin. ſpec. 800. *fuſt.* 531. *Reich.* 3. 35. *vir. cliff.* 56. *hort. cliff.* 303. 2. *upſ.* 162. *diff. n.* 5. *Gærtn. fruct.* 1. 320. *Burm. ind. t.* 38. *f.* 1.

L. folio diſſecto. *Bauh. pin.* 216. *Barr. ic.* 798.

L. fol. multifido. *Cluſ. hiſt.* 1. 345. *Bauh. hiſt.* 3. 281. *f.* 2. *Park. theat.* 73. 4. *Raii hiſt.* 513.

Stœchas multifida. *Ger.* 479. 2. *emac.* 585. 2.

β. L. canarienſis. *Mill. dict. n.* 4.

L. fol. longiore tenuius & elegantius diſſecto. *Comm. rar. t.* 27.

Leaves petioled pinnate, leaflets decurſively pinnatifid, ſpike quadrangular, angles ſpiral.

[7. Lavandula carnoſa. *Thick-leaved Lavender.*
Lin. fuſt. 531. *ſuppl.* 274. *diff. n.* 6. *t.* 2. *Ait. hort. kew.* 2. 289.

Nepeta indica rotundiore folio. *Mer. hiſt.* 3. 415. *f.* 11. *t.* 6 *f.* 7.

Katu-kurka. *Rheed. mal.* 10. 179. *t.* 90.

Leaves petioled ovate-cordate ſerrate fleſhy, ſpike four-cornered, calyxes recurved.

DESCRIPTIONS, *&c.*

1. Root perennial, thick, woody. Stem ſhrubby, much branched, frequently five or ſix feet high, four-cornered, acute-angled, tomentoſe. Leaves numerous, blunt, hoary, the upper ones ſeſſile, the lower petioled. The flowers are produced in terminating ſpikes from the young ſhoots, on long peduncles; the ſpikes are compoſed of interrupted whorls in which the flowers are from ſix to ten, the lower whorls more remote. Each flower upright, on a ſhort pedicel. Bractes broad-ovate, awned, acuminate, veined. The common colour of the corolla is blue, but it varies with white flowers. The whole plant is covered with a down compoſed of forked hairs[a].]

β. Broad-leaved Lavender has much ſhorter and broader leaves, and the branches are ſhorter, more compact, and fuller of leaves. It will continue ſeveral years without producing flowers; and when it does, the leaves on the flowering ſtalks approach nearer to thoſe of the common Lavender, but are ſtill broader. The ſtalks grow taller, the ſpikes are looſer and larger, the flowers ſmaller, and appear a little later in the ſeaſon.

[Gerard obſerves, that this variety has not only broader leaves, but two oppoſite branches at the bottom of the ſtem, and paler-coloured flowers. This alſo varies with the corolla entirely white.

Native of the South of Europe, on mountains, by way ſides, and in barren places: Aſia and Africa. It flowers here from July to September, and was cultivated in 1568, as appears from Turner[b].

Lavender is a plant which has long been celebrated for its virtues in nervous diſeaſes. According to Dr. Cullen it is, "whether externally or internally, a powerful ſtimulant to the nervous ſyſtem; and amongſt others of this order, named Cephalics, the Lavender has a very good, and perhaps, the beſt title to it." And he farther ſays, "it appears to me probable that it will ſeldom go farther than exciting the energy of the brain to a fuller impulſe of the nervous power into the nerves of the animal functions, and ſeldom into thoſe of the vital. It may however be with great propriety, that Profeſſor Murray has diſſuaded its uſe where there is any danger from a ſtimulus applied to the ſanguiferous ſyſtem. It is however ſtill probable that Lavender commonly ſtimulates the nervous ſyſtem only, and therefore may be more ſafe in palſy than the warmer aromatics, eſpecially if the Lavender be not given in a ſpirituous menſtruum, or along with heating aromatics, which however is commonly done in the caſe of the ſpiritus Lavandulæ compoſitus.

The officinal preparations of Lavender are the eſſential oil, a ſimple ſpirit, and a compound tincture. The eſſential oil has been uſed for ſtimulating paralytic limbs, and for ſeveral external purpoſes.]

2. French Lavender or purple Stœchas has a low, thick, ſhrubby ſtalk, about two feet high, ſending out woody branches the whole length. Leaves about an inch long, hoary and pointed, of a ſtrong aromatic ſcent, oppoſite at each joint, with ſmaller leaves of the ſame ſhape coming out at the ſame places. The branches are terminated with ſcaly ſpikes of purple flowers, four-cornered, and an inch in length; and at the top a coma or ſmall tuft of purple leaves. The whole plant has a very ſtrong, aromatic, agreeable odour.

[Stem obſcurely, branches acutely quadrangular. Leaves quite entire, with a longitudinal groove at top, beneath tranſverſely veined, wrinkled. Spike on a ſhort peduncle. When it begins to flower, there are only four flowers in a whorl, but theſe are afterwards increaſed by the lateral gems, till it becomes gradually round. The bractes are broad-ovate and ſubtrilobate, with the middle lobe more produced; they are ſubtomentoſe, purple, and veined: at the top they widen into larger, oblong, violet-coloured leaves, and form a coma[c].]

[a] Linn. diff. [b] Hort. kew. [c] Linn. diff.

β. The peduncles in this variety are three times the length of thoſe in the common Stoechas, and naked. The ſpikes are longer and not ſo thick, and the leaves of the coma are more numerous, longer, and of a brighter purple colour. Both theſe vary to purple, and white in the corolla, but the moſt common colour is blue.

[Native of the South of Europe. Cultivated in 1568, according to Turner. It flowers from may to july.

3. This differs from the preceding by its wrinkled villoſe leaves, which are green, and not hoary, as in that; the bractes alſo and coma are green and entire, not purple and ſubtrilobate, as in L. Stoechas.

Found in the iſland of Madeira by Maſſon [d]. Introduced in 1777. It flowers from may to july [e].]

4. This has a woody ſtalk two or three feet high, with four-cornered branches on every ſide the whole length. Leaves oppoſite, about an inch long, and an eighth of an inch broad, indented regularly on both ſides almoſt to the midrib, of a grayiſh colour, a pleaſant aromatic odour, and a biting warm taſte. The flowers are produced in ſcaly ſpikes at the ends of the branches upon long naked peduncles. The ſpikes are four-cornered, hairy, and about an inch long, terminated by a few purpliſh leaves.

[Stem hiſpid, with the angles prominent, rounded, having a groove on each ſide. Leaves hiſpid with hairs inſerted into raiſed points: leaflets linear, ſhort, truncate. Peduncle quadrangular, tomentoſe. Bractes broad-ovate, rounded at top, hiſpid, coloured, veined; the terminating ones larger and of a darker colour [f].

Native of Spain and the Levant. Cultivated in 1597, as appears from Gerarde. It flowers from june to ſeptember [g].

5. This is a low, very branching ſhrub, with a browniſh bark. Younger branches quadrangular, but becoming round as they grow woody. Leaves very blunt, thickiſh, ſoft to the touch, oppoſite, hoary: leaflets oblong, ſometimes quite entire, ſometimes bifid or trifid at top. Petioles channelled, the lower ones very long. Peduncles leafleſs, about a foot in length, upright, ſoft, hoary, quadrangular at top. Spikes commonly three together, upright, obtuſely quadrangular, lanceolate, acute. Bractes ovate or lanceolate, concave, quite entire, upright, ſilky, a little longer than the calyx; in the fruiting plant ſquarroſe. Calyx pale green or hoary. Corolla purple or pale violet, with a hairy throat, an upright tube twice the length of the calyx, and the upper lip double the length of the lower. Anthers round, villoſe. Stigma purpliſh. Seeds ſmall, oblong, black with a white ſcar. The flowers have a ſweet ſmell; but the leaves have very little ſmell or taſte [h].

Native of Madeira, where it was found by Mr. Francis Maſſon. Introduced in 1777. It flowers from april to october [i].]

6. This is an annual (or rather a biennial) plant, with an upright branching woolly ſtalk two feet high. Leaves hoary, oppoſite, cut into many diviſions to the midrib: theſe ſegments are again divided on their borders towards the top into three blunt ones, ſo that they end in many points. The peduncle is continued from the end of the branch, is naked, and about ſix inches long, quadrangular, and terminated by a cloſe ſpike of flowers about one inch long: the rows of flowers are twiſted ſpirally. There are commonly two ſmall ſpikes below this, and about an inch from it. The corolla varies from blue to white.

[Stem quadrangular, with the angles acute and extremely villoſe. The leaflets have four or five ſegments (three on the upper and one or two on the lower) lanceolate, blunt. The lower leaves are petioled, the upper ſeſſile; all flat and hairy; the uppermoſt have a few ſimple hairs, and more that are compound, always moiſt and ſomewhat clammy with the oil that exudes from them. Peduncle tomentoſe. Spike lanceolate, quadrangular, gradually lengthened whilſt the flowers open, becoming cylindric, but with four ſpiral angles. Bractes lanceolate, hoary, ſhorter. Flowers four in a whorl. Corolla violet-coloured [k]. Seeds roundiſh, ſmall, bay-coloured, convex on one ſide, obſcurely angular on the other, obliquely truncate at the baſe, and marked with a very wide white umbilical area [l].

Native of Spain. Cultivated in 1597, as appears from Gerarde [m].]

β. This riſes with an upright branching, ſquare ſtalk, four feet high. Leaves longer, and cut into narrower ſegments than the Spaniſh plant: they are of a lighter green, and almoſt ſmooth: the naked flower-ſtalk is alſo much longer, and terminated with a cluſter of ſpikes of blue flowers; at two or three inches below theſe are two ſmall ſpikes, one on each ſide. The flowers are ſmaller than thoſe of common Lavender.

Native of the Canary iſlands, whence the ſeeds were ſent to Compton Biſhop of London, in whoſe garden at Fulham the plants were firſt raiſed.

[7. Stem quadrangular, with the angles rounded, ſcarcely pubeſcent. Leaves veined, very finely pubeſcent, deciduous in the time of flowering; on petioles the length of the leaves, horizontal, ſemicylindric, channelled. Spike at firſt pyramidal and four-cornered, dilated and becoming round during the time of flowering, but when the germs are fecundated elongated into a cylinder. Bractes fleſhy, hairy, ciliate, acute, erect. Flowers four in a whorl, recurved. Corolla blue. The fruiting ſpike reſembles a cylindric ſtrobile, with recurved ſcales.

This ſpecies does not coaleſce kindly with the reſt; but the bilabiate calyx and the reſupine corolla evidently place it here [n].

Native of the Eaſt Indies, (where it was obſerved by Koenig near Sadraſs on very arid rocks and walls, and by Rheede in the ſands of Malabar). It was introduced in 1778 by the Right Hon. Sir Joſeph Banks, Bart. K. B. and flowers in june. This, as well as the laſt, is a biennial plant [o].]

PROPAGATION AND CULTURE.

1. Common Lavender is propagated by cuttings or ſlips, planted in march in a ſhady ſituation, or in a border where they may be ſhaded by mats until they have taken root, after which they may be expoſed to the ſun, and when they have obtained ſtrength, remove them to the places where they are to remain. Theſe plants will abide much longer in a dry, gravelly or ſtrong ſoil, in which they will endure our ſevereſt winters; but they will grow much faſter in ſummer, on a rich, light, moiſt ſoil, but then they are generally deſtroyed in winter, nor are the plants ſo ſtrong ſcented, or fit for medicinal uſes, as thoſe which grow on a barren rocky ſoil.

It was formerly in uſe to make edgings to borders, but it grows too large for the purpoſe; if often cut in dry weather it is ſubject to decay, and in hard winters ſome of the plants will be killed; it ſhould be planted therefore in beds in the kitchen garden where the ſoil is drieſt.

[On account of its odour however, plants of it ſhould be interſperſed among low ſhrubs and large herbaceous plants in the borders of large gardens and plantations.

All the other ſpecies require the protection of the greenhouſe, except n. 2. which is tolerably hardy; and the laſt, which muſt be preſerved in the dry ſtove. They may all be increaſed by ſlips or cuttings; and alſo by ſeeds, but they do not all produce ſeeds in our climate.]

2. Purple Stoechas, which our old authors call *Sticadove*, *Stiecados*, and *Sticadore*, from the Italian *Stecade*, on account of its being found on the iſlands called Stoechades, may be cultivated by ſowing the ſeeds upon a bed of light dry ſoil in march; when they come up clear them from weeds until they are two inches high, and then remove them. For this prepare a ſpot of light dry ground, lay it level, and tread it out into beds, into which ſet the plants at five or ſix inches diſtance every way; watering and ſhading

[d] L'Heritier. [e] Hort. kew. [f] Linn. diff. [g] Hort. kew. [h] Jacqu. & Linn. diff. [i] Hort. kew. [k] Linn. diff. [l] Gaertner. [m] Hort. kew. [n] Linn. diff. [o] Hort. kew.

them

them until they have taken root. If the winter ſhould prove ſevere, cover them with mats, peas-haulm or other light covering, to guard them againſt the froſt. In march or the beginning of april, the following ſpring, remove them into the places where they are to remain; taking a warm moiſt ſeaſon, if poſſible, for this purpoſe, and not letting them remain long above ground. The ſoil ſhould be a dry warm ſand or gravel, and the poorer the ſoil is, the better will this plant endure the cold of winter. In a rich moiſt ground it will not produce ſo many flowers, nor will they have ſo ſtrong an aromatic ſcent.

It may alſo be increaſed by ſlips or cuttings; but the ſeeds ripen well in this country, and plants raiſed from theſe are much better.

4. Tooth-leaved Lavender, and ſome of the others, ſeldom producing ſeeds in England, are propagated by ſlips or cuttings, planted in april, and treated as directed for the preceding ſorts. Theſe will take root very freely, but muſt be tranſplanted into pots, that they may be ſheltered from ſevere froſt in winter, eſpecially whilſt young. When they have obtained ſtrength, ſome may be planted in a warm ſituation, on a dry ſoil, where being prevented from growing too vigorouſly, they will endure the cold much better than in richer ground.

6. Jagged Lavender, or jagged Stœados, as Gerarde calls it, may be ſown in a border of light earth in the ſpring, and tranſplanted into the borders of the flower garden or into pots. They may be preſerved through the winter in a greenhouſe, but never continuing longer than two years, they are generally raiſed from ſeed every ſeaſon.

The variety from the Canary iſlands is more tender. Sow the ſeeds on a moderate hot-bed in the ſpring. When the plants come up, put each into a ſeparate ſmall pot filled with light earth. Plunge the pots into another hot-bed; and in the beginning of june inure them to the open air, and towards the end of the month place them in a ſheltered ſituation. In july the plants will flower, and if the autumn prove warm, the ſeeds will ripen in ſeptember; but when they do not perfect ſeeds, the plants may be preſerved through the winter in a good greenhouſe, where they will produce flowers and ſeeds moſt part of that ſeaſon.

[LAVANDULA. See *Verbena*.]

LAVATERA. (*So named by Tournefort, from Lavater, a phyſician at Zurich. We have none of his writings.*)

Lin. gen. n. 842. *Reich. n.* 907. *Schreb. n.* 1133. *Tournef. act. gall.* 1706. *t.* 3. *Dill. gen.* 10. *Cavan. diſſ.* 2. 86. *Juſſ.* 272. *Gærtn. t.* 136.

Claſſ. 16. 6. Monadelphia Polyandria.

Nat. order of *Columniferæ—Malvaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* double:

Exterior one-leafed, trifid, obtuſe, ſhort, permanent.

Interior one-leafed, half five-cleft, more acute, more erect, permanent.

COR. *Petals* five, obcordate, flat, ſpreading, affixed below to the tube of the ſtamens.

STAM. *Filaments* numerous, coaleſcing below into a tube; looſe above, (gaping at the tip and ſurface of the tube.) *Anthers* reniform.

PIST. *Germ* orbicular. *Style* cylindric, ſhort. *Stigmas* ſeveral: (ſeven to fourteen) briſtly, length of the ſtyle.

PER. *Capſule* orbicular, compoſed of as many cells as there are ſtigmas, bivalve, and articulated in a whorl round the columnar *receptacle*, at length falling off.

SEEDS ſolitary, reniform.

OBS. Althæa Sp. T. *Fruit comes forth without an umbraculum.*

Lavatera T. *has the fruit covered with an obtuſe umbraculum.*

ESSENTIAL CHARACTER.

Cal. double, outer trifid. *Anth* very many, one-ſeeded.

SPECIES.

1. Lavatera arborea. *Tree Lavatera* or *Mallow.*
Lin. ſpec. 972. *Reich.* 3. 350. *hort. upſ.* 202. *cliff.* 348. 2. *Gærtn. fruct.* 2. 257. *Hudſ. angl.* 326. *Wither. arr. ed.* 3. 614. *Lightf. ſcot.* 374. *Cavan. diſſ.* 86. & 282. *t.* 139. *f.* 2.
L. veneta. *Mill. dict. n.* 6.
Malva arborea veneta dicta, parvo flore. *Baub. pin.* 315.
M. arboreſcens. *Dod. pempt.* 653. *Camer. hort.* 95. *Beſl. eyſt. aſt.* 6. *t.* 6. *f.* 1.
M. arborea. *Park. theat.* 299. 6. *Baub. hiſt.* 2. 952. *t.* 953. *f.* 1. *Raii hiſt.* 601.——minima noſtras. *Merr. pin. Raii ſyn.* 252.
M. maritima arborea Veneta dicta, parvo flore. *Mor. hiſt.* 2. 523. *ſ.* 5. *t.* 17. *f.* 15.
Stem arboreous, leaves ſeven-angled hairy plaited, pedunces cluſtered one-flowered axillary, outer calyxes larger.

[2. Lavatera micans.
Lin. ſpec. 972. *Reich.* 3. 351.
Malva foliis mollibus undulatis, in margine ſuperius micis ſulphureis. *Mor. hiſt.* 2. 523. *ſ.* 5. *t.* 17. *f.* 9.
Stem arboreous, leaves ſeven-angled acute crenate plaited tomentoſe, racemes terminating.]

3. Lavatera olbia. *Downy-leaved Lavatera.*
Lin. ſpec. 972. *ſyſt.* 626. *Reich.* 3. 351. *hort. upſ.* 202. *cliff.* 348. 3. *Jacqu. hort.* 1. 30. *t.* 73. *Ger. prov.* 475. *Cavan diſſ* 86. *t.* 32. *f.* 2.
Althæa fruteſcens, folio acuto, parvo flore. *Baub. pin.* 316. *Mor. hiſt. ſ.* 5. *t.* 19. *f.* 17.—fol. acuto virente molli, flore ſpecioſo. *Pluk. phyt. t.* 8. *f.* 1.
A. arborea olbia in galloprovincia. *Lob. ic.* 653. *adv.* 294.
Malva fruteſcens fol. acuto auriculato Hederæ inſtar. *Mor. hiſt.* 2. 523.
Stem ſhrubby, leaves five-lobed haſtate, flowers ſolitary.

4. Lavatera triloba. *Three-lobed Lavatera.*
Lin. ſpec. 972. *ſyſt.* 627. *Reich.* 3. 351. *Jacqu. hort.* 1. 30. *t.* 74. *D'Aſſo arrag. n.* 630. *Cavan. diſſ.* 87. *t.* 31. *f.* 1. *Pluk. phyt. t.* 8. *f.* 3.
Althæa fruteſcens folio rotundiore incano. *Baub. pin.* 316. *Lin.*
Stem ſhrubby, leaves ſubcordate ſubtrilobate rounded crenate, ſtipules cordate, peduncles one-flowered aggregate.

[5. Lavatera luſitanica. *Portugueze Lavatera.*
Lin. ſpec. 973. *Reich.* 3. 352.
Althæa fruteſcens luſitanica, fol. ampliore minus incano. *Tournef. inſt.* 97.
Stem ſhrubby, leaves ſeven-angled tomentoſe plaited, racemes terminating.

6. Lavatera maritima.
Allion. pedem. n. 1425. *Govan illuſtr.* 46. *t.* 21. *f.* 2. *Cavan. diſſ.* 88. *t.* 32. *f.* 3.
Althæa fruteſcens folio rotundiore incano. *Baub. pin.* 316. A. C.
A. arboreſcens. *Baub. hiſt.* 2. 956. A.
Stem ſhrubby, leaves cordate roundiſh-lobed crenate tomentoſe, flowers ſolitary.]

7. Lavatera thuringiaca. *Great-flowered Lavatera.*
Lin. ſpec. 973. *ſyſt.* 627. *Reich.* 3. 352. *hort. upſ.* 203. *Gærtn. fruct.* 2. 256. *Cavan. diſſ.* 89. *t.* 31. *f.* 3. *Jacqu. auſtr.* 4. 6. *t.* 311.
Althæa thuringiaca. *Cam. hort. t.* 6.—grandiflora. *Dill. eltb.* 9. *t.* 8. *f.* 8.
A. flore majore. *Baub. pin.* 316. *Raii hiſt.* 602.
A. pannonica 2. *Cluſ. pann.* 502.—2 & 3. *Cluſ. hiſt.* 24.
Stem herbaceous, fruits naked, calyxes gaſhed.

8. Lavatera cretica. *Cretan Lavatera.*
Lin. ſpec. 974. *ſyſt.* 627. *Reich.* 3. 353. *hort. upſ.* 202. *Jacqu. hort.* 1. 15. *t.* 41. *Cavan. diſſ.* 89. *t.* 32. *f.* 1.
Malva cretica. *Mill. dict. n.* 7.—annua altiſſima, flore parvo ad alas umbellato. *Tournef. cor.* 2.
M. annua hirſuta, fol. hederæ inſtar anguloſis. *Mor. hiſt.* 2. 521. *ſ.* 5. *t.* 17. *f.* 5.
Stem upright, lower branches diffuſed, peduncles cluſtered one-flowered, leaves lobed, upper ones acute.

9. Lavatera trimeſtris. *Common annual Lavatera.*
Lin. ſpec. 974. *ſyſt.* 627. *Reich.* 3. 353. *hort. upſ.* 203. *cliff.* 348. 1. *Cavan. diſſ.* 90. *t.* 31. *f.* 2. *Gærtn. fruct.* 2. 257. *Jacqu. hort.* 1. 29. *t.* 72. *Curt. magaz.* 109. *Sauv. monſp.* 101.
Malva folio vario. *Baub. pin.* 315. *prodr.* 137. *ic.*
M. trimeſtris ſ. æſtiva. *Park. theat.* 300. *f.* 5.

Malva trimeſtr. *Cluſ. Raii hiſt.* 598.
M. æſtiva hiſpanica. *Ger. emac.* 931.
Stem herbaceous rugged, leaves ſmooth, peduncles one-flowered, fruits covered with a ring.

DESCRIPTIONS, &c.

1. Tree Mallow or Mallow tree riſes with a ſtrong thick ſtalk the height of eight or ten feet (in gardens), dividing into many branches at the top. [In its wild ſtate, when largeſt, from four to ſix feet high, and as much as four inches in diameter. Leaves alternate, numerous, cordate, roundiſh-ſeven-angled (ſome five and others three-angled), the angles blunt, ſoft as velvet, ſhorter than the petioles. Stipules ſhort, ſmooth, acuminate at the tip, broad at the baſe. Flowers moſtly in pairs, ſometimes three together, on upright peduncles an inch and half in length. Outer calyx ovate at the baſe, divided half way into three broad blunt ſegments: inner only half the ſize, divided half way into five ſharp ſegments. Corolla purpliſh red, with dark blotches at the baſe, ſpreading-bell-ſhaped, (like that of the common Mallow) an inch or more in diameter: petals broader at top, narrow at the baſe, ſo that the calyx appears between the claws. Cylinder of filaments purple, woolly at the baſe. Germ very ſmooth. Style uſually eight-cleft at top. Stigmas revolute, reddiſh [a]. The ring or whorl of fruits is ſeven or eight-capſuled: common receptacle awl-ſhaped, with a conoid globule at top, and ſmall creſcent-ſhaped lamellæ at the baſe and the interſtices of the capſules. Capſules reniform-rounded, ſharply three-cornered, membranaceous, wrinkled, cloſed on all ſides, pale-bay-coloured, not opening. Seeds kidney-ſhaped, aſh-coloured [b].

Native of Italy, the Levant and Britain. With us it is ſmaller than it appears in the gardens. Hurſt caſtle. Portland iſland. Denny iſland, near Briſtol. Cornwall and Devonſhire. Teignmouth. Rocks of Caldey iſland. Angleſey, &c. in Wales. Baſſe iſlands, near Edinburgh. Inch-Garvey and Mykrie-Inch, in the Firth of Forth. It flowers from june or july to ſeptember or octobor.

Ray, Moriſon and others diſtinguiſh ours from the Italian plant; the leaves of ours being ſmaller, more hoary on the upper ſurface, and the upper ones more angular; the flowers not ſo large, and of a paler red colour. Moriſon found it growing plentifully on the iſland of Pierre Percé on the coaſt of Bretagne.

2. Leaves ſoft, waving on the edge, with brimſtone-coloured mice ſhining in the ſun on the upper ſurface. Stems from two to three feet in height.

Native of Spain [c] and Portugal.

3. Stem round, branched, five feet high, villoſe at top, reddiſh. Leaves ſoft, whitiſh, tomentoſe, unequally ſerrate; the lower ſubcordate-haſtate, five-angled; the upper ovate, three-cuſped, the middle lobe narrowed, acute, oblong. Stipules ovate-lanceolate, villoſe. Flowers on ſhort peduncles, axillary, ſolitary, very ſeldom two together; terminating ones in a ſpike. Outer calyx ovate, with roundiſh-acute ſegments: inner larger, with lanceolate, acute ſegments. Corolla large, ſpreading very much, reddiſh-purple: petals with narrowed claws, covered with white hairs, inſerted into a fleſh-coloured tube. Stamens purple. Germ roundiſh-compreſſed, with twenty grooves. Style divided into about twenty parts. Stigmas long, recurved. Capſules about twenty, black, ſmooth, fixed in a ring about a thick ſtriated cone. When the ſeeds are ripe, that part which is next to the axis appears naked, on account of the pellicle which forms the internal part of the capſule adhering to the axis [d].

Linnæus obſerves, that the leaves of the firſt year are very large, and thoſe of the following years much ſmaller, which is a circumſtance common to this with other plants of the ſame natural order. It bears a great reſemblance to the next ſpecies, but in this the flowers are ſolitary, on a very ſhort peduncle; and the outer calyx is acuminate, almoſt three-parted, the length of the inner.

Native of the South of France. It flowers from june to octobor. Cultivated by Mr. Hugh Morgan in 1570, according to Lobel [e].

4. Stem round, branched, from three to four feet in height. Leaves alternate, petioled, ſhorter than the petioles, roundiſh but with the border ſo rolled back as to appear triangular. Stipules cordate, broad, acuminate, ſerrate. Flowers axillary: three peduncles moſtly one-flowered in each axil, upright, ſhorter than the petiole. Segments of the outer calyx broad-cordate, acuminate. Inner calyx twice as large, five-cornered-acuminate, with the corners prominent. Corolla large, ſpreading, pale purple, with the claws white, hairy. Capſules about fifteen, in a ring about a column ending in a point [f].

Linnæus obſerves, that the whole plant is tomentoſe, being covered with very ſmall glutinous hairs, with other larger ones ſtellate at top mixed among them.

Native of France and Spain. It flowers from june to ſeptember. Cultivated by Mr. Miller, in 1759 [g].

5. Native of Portugal. Cultivated by Mr. Miller in 1748. It flowers in auguſt and ſeptember [h].

6. Stem reddiſh, covered with bundles of hairs ſo ſmall as to ſeem dots of meal, branched, two feet high and more. Leaves on the older plants ſmall, ſomewhat plaited, five-nerved; on the younger plants and branches double the ſize (near two inches in diameter). Stipules awl-ſhaped, ſmall, tomentoſe. Flowers axillary, ſeldom two together, on declining peduncles, ſhorter than the petiole. Segments of the outer calyx ovate-acute; of the inner twice as large, lanceolate. Corolla large, twice the ſize of the common Mallow, and more, ſpreading very much, whitiſh, with very narrow purple claws. Tube of the filaments dark purple. Germ orbicular-compreſſed: ſtyle multifid: ſtigmas oblong revoluſe. Fruit within the calyx, conſiſting of twelve kidney-ſhaped capſules, placed in a ring round a column, terminated by a ſhort acuminate cone.

Native of Spain and the South of France. It flowers from july to ſeptember [i].

Cavanilles has another ſpecies (diſſ. 282. t. 139. f. 1.) which he names *L. africana*, being a native of the northern part of Africa, as well as Spain. He ſays it is allied to L. maritima. The ſtem is ſhrubby, as in that, branched, covered with a ſhort down, compoſed of a web of hairs in bundles, and four feet in height. Leaves alternate, almoſt equal to the petioles, five-lobed, crenate, ſoft, hoary. Stipules narrow, upright. Flowers axillary, (not ſolitary) but in pairs, drooping on peduncles an inch in length. Outer calyx deeper cut than in the other ſpecies into three ovate blunt ſegments: inner cut half way into five ſharp ſegments: both tomentoſe. Corolla almoſt white, the petals being of an extremely pale purple, rounded-emarginate, large, ſpreading. Cylinder of filaments deep purple, naked at the baſe. Germ orbicular-compreſſed, twelve-grooved, very ſmooth: ſtyle white: ſtigmas twelve, long, reflex, purple. Fruit within the calyx, compoſed of twelve kidney-form capſules, roughened at the back. Miller has a ſpecies under the name of *L. africana*, which is an annual, and very different from this.]

7. Stem five or ſix feet high, woolly, [branched. Lower leaves heart-ſhaped, crenate, roundiſh-lobed: upper haſtate, on ſhort petioles. Stipules lanceolate. Flowers axillary, ſolitary, peduncled; peduncles longer than the leaf. Calyxes ſubtomentoſe: ſegments of the outer heart-ſhaped, with a very ſharp point; of the inner oblong, acute. Corolla large, ſpreading, pale violet or purpliſh] ſhaped like thoſe of the Marſh-mallow, but larger; [petals emarginate [k]. Capſules about twenty (fourteen Cavanilles) in a wing, of a papery ſubſtance, ſomewhat rugged, about a columnar receptacle, which has many wings from the permanent ſides of the capſules, like the cogs of a mill-wheel, ending in a conical-awl-ſhaped point. Seeds flatted a little, ſmooth, ſubcinereous or brown [l].

Native of Sweden, Germany, Hungary, Tartary,

[a] Cavanilles, Withering. [b] Gærtner. [c] Moriſon. [d] Cavanilles. [e] Cavanilles. [f] Cavanilles. [g] Hort. kew. [h] Ibid. [i] Cavanilles. [k] Ibid. [l] Gærtner.

in hedges. Cultivated in 1732, by James Sherard, M.D. It flowers from july to ſeptember [m].

8. Root annual, fibrous, of thick fibres a foot in length, with innumerable other capillary fibres. Stem round, rugged, five feet high, branched. Leaves on long petioles, very ſoft, tomentoſe, toothed, ſeven-angled, the angles of the upper ones ſharper. Stipules lanceolate, ciliate, bowing at bottom and then ereƈt. Flowers axillary, about four together, on upright pedunƈles. Outer calyx cup-ſhaped, with ovate ſegments: inner a little longer, five-cornered above, with lanceolate ſegments. Corolla twice the length of the calyx, pale blue, with oblong, emarginate petals. Germ orbicular-flatted, ten-grooved. Stigmas ten. Fruit ſmooth, within the calyx. Capſules ten, round a column terminated by a hemiſphere with a very ſmall point at top, diſappearing when the fruit is ripe, and leaving a hole in the middle of the capſules, which then turn black [n].

Native of the iſland of Candia or Crete. Cultivated in 1768, by Mr. Miller. It flowers in july [o].

9. Root annual, white, with ſpreading beards. Stem round, two feet high, branched, the lower branches almoſt horizontal. Leaves crenate-toothed, ſmooth, on long petioles, gradually narrowed towards the tip. Stipules ovate-lanceolate, ciliate, bowed at bottom and then ſtraight. Flowers ſolitary, axillary, on pedunƈles ſhorter than the petiole. Outer calyx ſemitrifid, with keeled ſegments: inner larger, with lanceolate ſegments, curled at the edge. Corolla large, ſpreading bell-ſhaped, pale fleſh-colour with whitiſh lines; petals broader above, crenate, frequently rolled up, the edges of the claws deep purple. Germ very ſmooth. Style multifid. Stigmas pale-fleſh-coloured, longer than the tube, thirteen to eighteen. Fruit hemiſpherical, convex beneath, covered at top with a circular, concave, ſmooth, lid [p], or peltate umbrella. There are about twenty capſules in a whorl; they are brown, cloſed all round and not opening, with a longitudinal raiſed line along the back, elegantly marked on the ſides with flexuoſe ſtreaks drawn from the circumference to the centre. Seeds ferruginous [q].

Native of the South of Europe and the Levant. Cultivated in 1640, according to Parkinſon. It flowers from july to ſeptember [r].

This ſpecies varies much, and the varieties are conſtant [s]. Hence Mr. Miller makes three ſpecies out of it,] 1. L. althææfolia, a native of Syria, with an upright branching ſtalk, two feet high; the under leaves cordate-orbiculate, ſmooth, on long foot-ſtalks; the upper divided into three acute lobes: the flowers on long pedunƈles from the axils, very large, and ſpreading open, like thoſe of the Marſh-mallow, of a pale red or roſe-colour. There is a variety of it with white flowers.—2. L. africana, t. 161. f. 2. of his figures: native of the Cape of Good Hope, whence the ſeeds were brought to Holland. This differs from the preceding in the ſhape of the leaves; the lower having angles, and the upper being arrow-pointed; the ſtalks are hairy, the flowers larger, and of a brighter red colour.—3. L. trimeſtris is a native of Spain and Sicily. It riſes with ſlender ſtalks about two feet high, covered with a brown bark. The lower leaves are roundiſh, and the upper are angular, ſome of them arrow-pointed. The flowers are not half ſo large as either of the former, and are of a pale red colour; they ſtand on ſhort pedunƈles.

They are all annual herbaceous plants, flowering in july; and the ſeeds ripen in autumn.

PROPAGATION AND CULTURE.

All the ſhrubby ſorts are eaſily propagated by ſeeds, which ſhould be ſown in the ſpring upon a bed of light earth; and when the plants are about three or four inches high, they ſhould be tranſplanted to the places where they are deſigned to remain; for as they ſhoot out long fleſhy roots which have but few fibres, they do not ſucceed well if they are tranſplanted after they are grown large. If the ſeeds of theſe plants are permitted to ſcatter on the ground, the plants will come up the following ſpring; and when they happen to fall into dry rubbiſh, and are permitted to grow therein, they will be ſhort, ſtrong, woody, and produce a greater number of thoſe flowers than plants which are more luxuriant. As theſe plants continue a long time in flower, a few plants of each ſort may be allowed a place in all gardens where there is room.

Several of theſe ſhrubby ſorts will laſt only two years with us, unleſs on dry ground, where they will endure three or four years, but ſeldom longer.

Moſt of them require the proteƈtion of the green-houſe, or at leaſt to have the ground about them covered with old tanner's bark to keep out the froſt in ſevere winters.

The annual ſorts are propagated by ſeeds: the ſeaſon for ſowing them is the end of march or the beginning of april, upon a bed of freſh light earth; and when the plants are come up, careſully clear them from weeds; and in very dry weather, now and then refreſh them with water. When they are about two inches high, tranſplant them into the places where they are deſigned to remain, which ſhould be in the middle of the borders in the flower-garden; for if the ſoil is good, they will grow two or three feet high; in tranſplanting them, take them up very careſully, preſerving a ball of earth to their roots, otherwiſe they are apt to miſcarry; and alſo water and ſhade them until they have taken root, after which they will require no other care but to clear them from weeds, and to faſten them to ſtakes, to prevent their being injured by ſtrong winds. You may alſo ſow their ſeeds in autumn, and when the plants are come up, tranſplant them into ſmall pots, which, towards the end of october, ſhould be placed in a common hot-bed frame, where the plants being defended from ſevere froſts, will abide the winter very well; and in the ſpring, ſhake them out of the pots, and plant them into larger, or elſe into the full ground, where they may remain to flower. The plants thus managed will be larger, and flower ſtronger and earlier than thoſe ſown in the ſpring, and from theſe you will conſtantly have good ſeeds, whereas thoſe ſown in the ſpring ſometimes miſcarry.

[LAVATERA AMERICANA. See *Sida abutiloides*.

LAVENDER and LAVENDULA. See *Lavandula*.

LAVENDER COTTON. See *Santolina*.

———, SEA. See *Statice Limonium*.

LAVENIA. (*This name was taken up by Linneus as a trivial from Sherard in Ray's ſupplement, and as a genus by Solander. It is perhaps vernacular.*)

Lin. gen. Schreb. n. 1268. *Swartz prodr.* 112.

Adenoſtemma. *Forſt. gen.* 45.

Claſs. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ Diſcoideæ*.

GENERIC CHARACTER.

CAL. *Common* ovate, ſubimbricate; *ſcales* ten to fourteen, lanceolate, equal, permanent.

COR. *Compound* uniform: *corollets* hermaphrodite equal, (fifteen to twenty).

Proper funnel-form, dilated at the baſe; *border* five-cleft, patulous.

STAM. *Filaments* five, filiform, ſhorter than the tube. *Anthers* oblong, flattiſh twin, ſlightly connate.

PIST. *Germ* oblong. *Style* filiform, longer than the corollet, two-parted. *Stigmas* flattiſh, clubbed.

PER. none. *Calyx* permanent, ſpreading.

SEEDS ſubclavate, a little wrinkled, viſcid with glandules; *down* with three awl-ſhaped awns, glanduloſe at the baſe.

REC. naked.

ESSENTIAL CHARACTER.

Cal. nearly regular. *Style* bifid. *Down* three-awned, glandular at the tip. *Recept.* naked.

SPECIES.

1. Lavenia decumbens.

Swartz prodr. 112.

Cotula Verbeſina. *Lin. ſpec.* 1258. *Jaſt.* 775. *Reich.* 3. 856. *mant.* 473. *amoen.* 5. 407. *Brown. jam.* 316. (Tanacetum). *Sloan. jam.* 1. 262. *t.* 155. *f.* 2. (Chryſanthemum).

Stem ſimple decumbent, leaves ſubcordate bluntly ſerrate.

[m] Hort. kew.
[n] Cavanilles.
[o] Cavanilles.
[p] Gærtner.
[q] Cavan. 91.
[r] Hort. kew.
[s] Hort. kew.

2. Lavenia erecta.
Swartz prodr. 112.
Verbesina Lavenia. *Lin. spec.* 1271. *syst.* 779. *Reich.* 3. 877.
Adenostemma viscosa. *Forst. flor. austral. n.* 284.
Pu-Tumba. *Rheed. mal.* 10. 125. *t.* 63.
Eupatoriophalacron. *Vaill. act.* 1720. *p.* 325. *Burm. zeyl. t.* 42.
Chrysanthemum aquaticum, schrophulariæ folio, Lavenia dictum. *Raii suppl.* 217.
Stem branched erect, leaves elliptic sharply serrate.

DESCRIPTIONS, *&c.*

1. Stem herbaceous. Leaves opposite, petioled, cordate sometimes but seldom ovate, blunt, bluntly serrate, petioled. Peduncles terminating, long, usually bifid and two-flowered. Calyx many-leaved, simple, ovate. Pistil longer than the corollet. Seeds terminated by two coloured bristles. It has the appearance of a Verbesina*.
Annual and native of Jamaica.
2. Root annual, fibrous, whitish. Stems pale green or whitish, slender, hairy. Leaves set with whitish hairs. Heads of flowers flat, consisting of numerous pale-blue florets. Style also pale blue, with a dark blue stigma white at top. Calyx hairy*.
Native of the East Indies and the Society isles. Forster named it Adenostemma, from ἀδὴν a gland, and στέμμα a crown or garland, the seed, instead of a down, being crowned with three glands.
The figure in hort. malab. does not very well agree with Forster's drawing, but the specimens in the Banksian herbarium vary as much to the full.

LAUGERIA. (*Named* Laugieria *by Jacquin from Robert Laugier, Professor of Chemistry and Botany at Vienna. Petrus Laugerius was a physician at Sedan: and described and figured above* 1400 *rare plants of that neighbourhood, never published.* P. M. Slegelii Programma, Jenæ 1639. qu.)
Lin. gen. n. 259. *Reich. n.* 280. *Schreb. n.* 354. *Jacqu. amer.* 64. *Juss.* 206.
Class. 5. 1. Pentandria Monogynia.
Nat. order of *Rubiaceæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, superior, with unequal mouth, small, deciduous.
COR. one-petalled, salver-form. *Tube* very long. *Border* five-cleft; *divisions* obovate.
STAM. *Filaments* five, very short. *Anthers* linear, long, beneath the throat.
PIST. *Germ* subovate, inferior. *Style* filiform, rather longer than the tube. *Stigma* headed.
PER. *Drupe* roundish, umbilicated with a point.
SEED. *Nut* two or five-celled, *Sw.* furrowed, *Jacqu.*

ESSENTIAL CHARACTER.

Cor. five-cleft. *Drupe* with a five-celled nut.

SPECIES.

1. Laugeria odorata.
Lin. spec. 276. *syst.* 231. *Reich.* 1. 535. *Swartz prodr.* 49. *Jacqu. amer.* 64. *t.* 177. *f.* 21. *pict.* 36. *t.* 259. *f.* 16.
Edechia. *Loefl. it.* 306, 271, 259.
Leaves subovate acute smooth, stem somewhat spiny, racemes panicled, drupes with five-celled nuts.
2. Laugeria lucida.
Swartz prodr. 48. *Vahl symb.* 3. 40. *t.* 57. *Loefl. it.* 270. *n.* 154.
Leaves oblong blunt entire membranaceous shining, racemes dichotomous, drupes with two-celled nuts.
3. Laugeria tomentosa.
Swartz prodr. 48.
Leaves ovate acute entire tomentose underneath, racemes dichotomous, drupes with a two-celled nut.

DESCRIPTIONS, *&c.*

1. This is an upright branching shrub ten feet high. Leaves quite entire, petioled, opposite, two inches long. Racemes loose, axillary, the length of the leaves. Flowers of a dirty red, very sweet during the night, peduncled, with one sessile in each division of the raceme. Fruits black, larger than peas, soft, very numerous, falling when ripe with every slight motion of the bush. It comes up both unarmed and with long, opposite, straight spines from the seed of the same shrub.
Native of America, Carthagena, Havanna, &c.
2. Branches round, smooth, covered with an ash-coloured bark, scarred at top with the fallen leaves. Leaves in clusters at the ends of the branchlets, petioled, opposite, two or three inches long, very smooth and even, nerved, quite entire. Racemes from the axils of the terminating leaves, solitary, opposite, the length of the leaves, bifid, reflex at the tip, almost as in Tournefortia. Flowers on short pedicels, distant, all directed the same way, on the inner side of the peduncles. Calyxes small, smooth, five-cleft. Corolla smooth*.
Native of the West Indies, Jamaica, and Santa Cruz.
3. Native of Jamaica*.

LAUGIERIA. See *Laugeria.*
LAUREL. See *Laurus* and *Prunus.*
——— Spurge. See *Daphne.*
LAURENTIA. See *Lobelia.*
LAUREOLA. See *Cestrum* and *Daphne.*
LAURESTINE. See *Viburnum Tinus.*
LAURIFOLIA. See *Garcinia* and *Sideroxylon.*
——— Arbor. See *Hippomane.*
LAURO AFFINIS. See *Cameadia* and *Fagara.*
LAUROCERASUS. See *Prunus.*]
LAURUS, (*of Pliny and other Latin writers. From laus.* Dict. *Others derive it from* laus, *praise.*)
Lin. gen. n. 503. *Reich.* 545. *Schreb. n.* 688. *Tournef.* 367. *Jacqu. amer.* 117. *Juss.* 80. *Gærtn. f.* 92.
Cinnamomum. *Herm. lugdb.* 656. *Burm. zeyl.* 28. 1.
Camphora. *Gronov. diss.*
Perica. *Plum.* 20.
Borbonia. *Plum.* 2.
Benzoe. *Boerh.*
Sassafras. *Offic.*
Class. 9. 1. Enneandria Monogynia.
Nat. order of *Holoraceæ. Lauri*, Juss.

GENERIC CHARACTER.

CAL. none (unless you call the corolla so.)
COR. *Petals* six, ovate, acuminate, concave, erect; the *alternate* ones exterior.
Nectary consisting of three acuminated coloured tubercles, ending in two bristles, standing round the germ.
STAM. *Filaments* nine, shorter than the corolla, compressed, obtuse, three in each rank. *Anthers* growing on each side to the margin of the filament on the upper part.
Glandules two, globose, with a very short footstalk, affixed to each filament of the inner rank near the base.
PIST. *Germ* subovate. *Style* simple, equal, length of the stamens. *Stigma* obtuse, oblique.
PER. *Drupe* (or berry) oval, acuminate, one-celled, comprehended by the corolla.
SEED. *Nut* ovate-acuminate. *Kernel* of the same form.
OBS. *The greater part of the species, including the Cinnamon, and Camphor, are hermaphrodite: but in some there are male flowers apart in dioecia, as in* L. nobilis, *where there are also frequently from eight to fourteen stamens, with naked four-parted corollas.*
The corpuscles annexed to some of the stamens afford the essential character.
The stamens vary as to number. R.

ESSENTIAL CHARACTER.

Cal. none. *Cor.* calycine, six-parted. *Nect.* of three two-bristled glands, surrounding the germ. *Filam.* inner glanduliferous. *Drupe* one-seeded.

SPECIES.

1. Laurus Cinnamomum. *Cinnamon-tree.*
Lin. spec. 528. *syst.* 383. *Reich.* 1. 225. *fl. zeyl. n.* 145. *mat. med.* 106. *Woodv. med. bot.* 80. *t.* 27. *hort. cliff.* 154. 6. *Gærtn. fruct.* 2. 69. *Jacqu. amer.* 117. *pict.* 59. *t.* 117. *Laur.*

* Linn. mant. & amoen. † Rheede malab. ‡ Jacquin. § Vahl. ¶ Swartz.

cochinch.

chinch. 249. *Plenck, ic.* 312. *Ait. nat. cur.* 1. *app. Philof. tranf.* 36. *p.* 97.

Cinnamomum. *Blackw. herb. t.* 354. *f.* 1. *Burm. zeyl.* 62. *t.* 27.—*f.* Canella zeylanica. *Bauh. pin.* 408. *Raii hift.* 1561.

Caffia cinnamomea. *Herm. lugdb.* 129. *t.* 655, 656. *Burm. ind.* 91.

Leaves three-nerved ovate-oblong, nerves difappearing towards the end.

2. Laurus Caffia. *Caffia* or *Wild Cinnamon.*

Lin. fpec. 528. *fyft.* 383. *Reich.* 2. 225. *fl. zeyl. n.* 146. *mat. med.* 107. *Gaertn. fruct.* 2. 69. *Trew in nov. act. nat. cur.* 2. *app.* 385. *Thunb. in act. ftockh.* 1780. *p.* 56. *Plenck, ic.* 313.

Laurus Canella. *Mill. dict. n.* 12.

Cinnamomum perpetuo florens, folio tenuiore acuto. *Burm. zeyl.* 63. *t.* 28.

C. f. Canella malabarica f. javanenfis. *Bauh. pin.* 409. *Raii hift.* 1560.

Canella f. C. vulgare. *Bauh. hift.* 1. 446.

Caffia lignea. *Blackw. herb. t.* 391. & 354. *f.* 2.

C. malabarica. *Herm. lugdb.* 130.

Carua. *Rheed. mal.* 1. 107. *t.* 57.

Leaves triple-nerved lanceolate.

3. Laurus Camphora. *Camphor* or *Camphire Tree.*

Lin. fpec. 528. *fyft.* 383. *Reich.* 2. 226. *mat. med.* 107. *Woodv. med. bot.* 419. *t.* 155. *hort. cliff.* 154. 5. *Thunb. jap.* 172. *Laur. cochinch.* 249. *Trew in nov. act. nat. cur.* 2. *app.* 358. *Plenck, ic.* 314.

L. camphorifera. *Kæmpf. amoen.* 770. *t.* 771.

Camphora officinarum. *Bauh. pin.* 500.

Arbor camphorifera japonica. *Breyn. prodr.* 2. *p.* 44. 7. *ic.* 16. *t.* 2, *cent. p.* 11. *t.* 12. *Comm. hort.* 1. 185. *t.* 95. *Raii hift.* 1679.

Leaves triple-nerved lanceolate-ovate.

[4. Laurus Culilaban.

Lin. fyft. 383. *Reich.* 2. 226. *mant.* 237. *mat. med.* 108. *Plenck, ic.* 317.

L. Caryophyllus. *Laur. cochinch.* 250.

Cortex caryophylloides. *Rumph. amb.* 2. 65. *t.* 14.

Coelit Lawan. *Eph. nat. cur. dec.* 2. *ann.* 1. *p.* 55.

Leaves triple-nerved oppofite.

5. Laurus montana.

Swartz prodr. 65.

Leaves triple-nerved ovate-acuminate perennial, flowers raceme panicled.

6. Laurus Chloroxylon. *Jamaica Laurel.*

Lin. fpec. 528. *Reich.* 2. 226. *Trew in nov. act. nat. cur.* 2. *app.* 398. *Brown. jam.* 187. *t.* 7. *f.* 1. (Chloroxylon).

Leaves three-nerved ovate coriaceous, nerves reaching the tip.

7. Laurus glauca.

Lin. fyft. 385. *Thunb. jap.* 173.

Leaves nerved lanceolate perennial, branchlets tubercled, flowers folitary.

8. Laurus pedunculata.

Lin. fyft. 383. *Thunb. jap.* 174.

Leaves nerved oblong entire, flowers folitary peduncled.]

9. Laurus nobilis. *Common Sweet Bay.*

Lin. fpec. 529. *Reich.* 2. 226. *hort. cliff.* 155. 7. *vifc.* 98. *mat. med.* 107. *Woodv. med. bot.* 94. *t.* 32. *Gaertn. fruct.* 2. 68. *Hall. helv. n.* 1602. *Hofer in alt. helv.* 1. 71. *Scop. carn. n.* 474. *Pallas ruff.* 1. 2. 18. *Allion. pedem. n.* 2124. *Blackw. herb. t.* 175. *Zorn. ic.* 52. *Plenck, ic.* 315. *Trew nov. act. nat. cur.* 2. *app.* 381.

L. undulata. *Mill. dict. n.* 2.

Laurus. *Camer. epit.* 60. *Tournef. inft.* 597. *Dod. pempt.* 849. *Ger. emac.* 1407. *Bauh. hift.* 1. 409. *Rait hift.* 1688.

L. vulgaris. *Bauh. pin.* 460.

L. foemina. *Ger. herb.* 1222. *f.* 2.

L. major f. latifolia. *Park. theat.* 1488. 1.

β. Laurus nobilis. *Mill. dict. n.* 1.

L. latifolia Dioſcoridis. *Bauh. pin.* 460.

γ. L. tenuifolia. *Mill. dict. n.* 3. *Tabern. ic.* 925.

L. minor. *Park. theat.* 1488. 2.

L. mas. *Ger. herb.* 1222. *f.* 1.

Leaves ovate-lanceolate perennial veined ſhining, axils of the veins glandular underneath, flowers in very ſhort racemes.

10. Laurus indica. *Royal Bay,* or *Indian Laurel.*

Lin. fpec. 529. *Reich.* 2. 227. *hort. cliff.* 154. 4. *Thunb. jap.* 173. *Laur. cochinch.* 253. *Gron. virg.* 159. 61. *Pluk. phyt. t.* 304. *f.* 1. *Alft. farn.* 61. *Barr. rar.* 123. *t.* 877. *Raii hift.* 1553.

Leaves oblong-lanceolate perennial ſomewhat glaucous underneath, the edges at the baſe rolled back, racemes elongated.

[11. Laurus foetens. *Madeira Laurel,* or *Til.*

Ait. hort. kew. 2. 39.

Leaves veined elliptic acute perennial, axils of the veins villoſe underneath, racemes elongated compound paniclе-form.]

12. Laurus Perſea. *Alligator Pear.*

Lin. fpec. 529. *fyft.* 383. *Reich.* 2. 227. *Jacqu. obſ.* 1. 37. *amer. pict.* 60. *t.* 264. *f.* 92. *Brown. jam.* 214. *Sloan. jam.* 2. 132. *t.* 222. *f.* 2. *Raii dendr.* 48. *Pluk. phyt. t.* 267. *f.* 1.

Perſea. *Cluſ. hiſt.* 1. *p.* 2. *t.* 3. *Bauh. pin.* 441. *Plum. gen.* 44. *t.* 20.—americana. *Mill. dict.*

Pyro ſimilis fructus in nova Hiſpania, nucleo magno. *Bauh. pin.* 439.

Leaves ovate coriaceous tranſverſely veined perennial, flowers corymbed.

13. Laurus Borbonia. *Broad-leaved Carolina Bay,* or *Red Bay.*

Lin. fpec. 529. *fyft.* 383. *Reich.* 2. 227. *hort. cliff.* 154. 3. *Gron. virg.* 46. *Catesb. car.* 1. *t.* 63. *Plum. gen.* 4. *ic.* 60. (Borbonia).

Leaves oblong-lanceolate perennial veined, fruits oblong immerſed in a berried receptacle.

[14. Laurus exaltata.

Swartz prodr. 65.

Leaves ovate-lanceolate veined coriaceous perennial flat, racemes upright compound, calyx cup-ſhaped, permanent.

15. Laurus triandra.

Swartz prodr. 65.

Leaves broad-lanceolate perennial flat, flowers three-ſtamened, fruit covered by the calyx.

16. Laurus coriacea.

Swartz prodr. 65.

Leaves ovate-acuminate flat veined ſhining coriaceous, racemes upright ſhorter than the leaves.

17. Laurus Leucoxylon.

Swartz prodr. 65. *Brown. jam.* 214. 2.

Leaves oblong-lanceolate flat perennial, racemes ſhorter than the leaves, calyxes incraſſated warted.

18. Laurus membranacea.

Swartz prodr. 65.

Leaves oblong acuminate veined convex coriaceous-membranaceous, branches and racemes upright ſhorter than the leaf.

19. Laurus patens.

Swartz prodr. 65.

Leaves ovate-lanceolate flat membranaceous, racemes upright diffuſed longer than the leaves.

20. Laurus pendula.

Swartz prodr. 65. *Brown. jam.* 214. 3.

Leaves oblong veined membranaceous perennial, racemes looſe, fruits pendulous, calyxes deciduous.

21. Laurus floribunda.

Swartz prodr. 65.

Leaves ovate-lanceolate flat membranaceous, flowers raceme-panicled looſe terminating.

22. Laurus lucida.

Lin. fyft. 384. *Thunb. jap.* 174.

Leaves oblong ſerrate, branchlets in threes, flowers axillary ſolitary ſubſeſſile.

23. Laurus umbellata.

Lin. fyft. 384. *Thunb. jap* 175.

Leaves ovate ſerrate, branchlets umbelled, flowers in racemes.]

24. Laurus æſtivalis. *Willow-leaved Bay.*

Lin. fpec. 529. *fyft.* 384. *Reich.* 2. 228. *Gron. virg.* 159. 63. *Trew in nov. act. nat. cur.* 2. *app.* 396. *Catesb. car.* 2. *t.* 28? (Cornus).

L. enervia. *Mill. dict. n.* 8.

Leaves veined oblong acuminate annual, wrinkled underneath, branches ſuperaxillary.

25. Laurus Benzoin. *Common Benjamin-tree.*
Lin. ſpec. 530. *Reich.* 2. 228. *hort. cliff.* 154. 2. *Gron. virg.* 46. 63. *Trew. in nov. act. nat. cur.* 2. *app.* 345. *Comm. hort.* 1. 189. *t.* 97. *Pluk. phyt. t.* 139. *f.* 3, 4. *Raii hiſt.* 1845. *n.* 7.
Leaves nerveleſs ovate ſharp at both ends entire annual.
26. Laurus Saſſafras. *Saſſafras-tree.*
Lin. ſpec. 530. *ſyſt.* 384. *Reich.* 2. 228. *hort. cliff.* 154. 1. *mat. med.* 108. *Woodv. med. bot.* 91. *t.* 31. *Laur. cochinch.* 254. *Gron. virg.* 46. 62. *Ehret. in nov. act. nat. cur.* 2. 326. *t.* 6. *Trew ibid. app.* 277. *Cold. noveb.* 94. *Kalm. it.* 2. 270, 434. *Trew Ehret. t.* 59. 60. *Blackw. herb. t.* 267. *Zorn. ic.* 196. *Plenck, ic.* 316. *Pluk. phyt. t.* 222. *f.* 6. *Cateſb. car.* 1. *t.* 55. (Cornus).
Saſſafras arbor, ex Florida, ficulneo folio. *Baub. pin.* 431.
Saſſafras. *Ger.* 1341. *emac.* 1525. *Park. theat.* 1607. *Raii hiſt.* 1568.
Leaves entire and three-lobed.
[27. Laurus involucrata.
Retz. obſ. 6. 27. *n.* 39.
Leaves obovate, umbels involucred.
28. Laurus Myrrha.
Laur. cochinch. 251.
Canella zeylanica ſylveſtris, odore & ſapore Myrrhæ, floribus verticillatis. *Herm. zeyl.* 26.
Caſſia cinnamomea, Myrrhæ odore, folio trinervio ſubtus cæſio. *Pluk. alm.* 89.
Leaves three-nerved ovate with a long point, flowers heaped ſeſſile axillary.
29. Laurus polyadelpha.
Laur. cochinch. 251.
Leaves obſcurely three-nerved lanceolate, flowers axillary polyadelphous.
30. Laurus curvifolia.
Laur. cochinch. 252.
Leaves obſcurely three-nerved oblong curved inwards, racemes ſmall ſubterminating.
31. Laurus Cubeba.
Laur. cochinch. 252.
Leaves nerveleſs veinleſs lanceolate, flowers heaped pedunculed.
32. Laurus piloſa.
Laur. cochinch. 253.
Leaves nerveleſs oblong hairy, racemes wide terminating.

DESCRIPTIONS, *&c.*

This genus conſiſts of trees or ſhrubs. Leaves moſtly entire, in a few nearly oppoſite, commonly perennial, as in moſt trees of the torrid zone. Flowers in the greater part in a ſort of panicle either axillary or terminating, in a few ſolitary or glomerate from the axils, ſometimes dioecous. Calyx of ſome deciduous, of the reſt permanent, entire or lobed. Fruit a drupe, in moſt like that of the Olive or Cherry; in L. Perſea pear-ſhaped and large [a]. It contains many important ſpecies beſides the Sweet Bay, as Cinnamon, Caſſia, Camphor, Saſſafras, &c.

1. Jacquin deſcribes the Cinnamon tree of America as twenty feet high or more, the trunk about ſix feet high, a foot and half in diameter, the outer bark ſmoothiſh and of a duſky cinereous colour; it has ſpreading branches that form an elegant head. Leaves oppoſite or nearly ſo, ovate-oblong, oblong-acuminate, or ſubovate, bluntly acuminate, quite entire, ſhining, coriaceous, on ſhort petioles, from three to five inches long; the three nerves ſpring from the petiole, and either immediately recede from each other, or continue united for a line or two and then diverge; they are of a bright green on the upper ſurface, but pale on the under, with the nerves whitiſh. On the younger branches or twigs ariſe ſlender common peduncles, from oppoſite axils, the terminating ones an inch, the others two or three inches long, three-flowered at top, or elſe trifid, with each diviſion three-flowered. Flowers ſmall, greeniſh yellow, almoſt inſipid, with a ſomewhat fetid ſmell, reſembling that of Lilium Martagon. Fruit the form and ſize of a middling Olive, inſipid, deep blue and ſoft, incloſing a thin, pale-coloured nut with a white kernel, which germinates ſoon after it falls, and therefore cannot eaſily be tranſported to a diſtance. The inner bark perfectly reſembled the Oriental Cinnamon in ſmell, taſte and figure; the only difference is that it has a coarſer texture, and a more acrid taſte, which may ariſe from the climate. But the varieties of Cinnamon are numerous. The timber is white and not very ſolid. The root is thick and branching, and exudes abundance of Camphor.

Native of Martinico, on the mountain Calebaſſe; flowering in February and march [a]. It is a native alſo of Braſil.

In the Flora zeylanica of Linneus the fructification only is deſcribed. The perianth is ſaid to be ſix-parted, with ovate-oblong ſegments. Stamens fix, one faſtened to each ſegment of the calyx; with an anther on each ſide at the tip. Beſides theſe, three other ſtamens terminated by an anther, and having a gland on each ſide above the baſe; finally three other ſharp ſtamens, bearing an anther that is ſcarcely fertile.—Jacquin and Loureiro mention only nine ſtamens.

Loureiro deſcribes the wild Cinnamon of Cochinchina as a middle-ſized tree. Leaves oblong, three inches in length, ſharpiſh at both ends, quite entire, flat, the three nerves diſappearing towards the tip, ſomewhat veined, ſmooth, pale green, petioled, ſcattered. Peduncles many-flowered, long, lateral and terminating. Flowers hermaphrodite, white. Corolla ſix-parted. The three inner ſtamens of the nine biglandular. Fruit a ſmall, ovate, blackiſh, ſhining oily Berry, containing one ſeed of the ſame ſhape.

Gærtner deſcribes the fruit of the Ceyloneſe Cinnamon as a ſubglobular berry, flatted a little at top and toruloſe, covered at the baſe by the calyx, which is thick, coriaceous, angular, ſublobate, and having from ſix to nine unequal teeth: the pulp or fleſh is very thick, and grows fungoſe with age, ſmelling ſtrong of Cinnamon. Seed ſpherical, covered with a cruſtaceous, brittle, thin coat.

The following account of the Cinnamon of Ceylon is given by Albertus Seba, from the chief inſpector of the Cinnamon trade in that iſland, and is printed in Act. nat. cur. and the Philoſophical Tranſactions.

The beſt ſort of Cinnamon, which grows in great plenty in Ceylon, and is peculiar to that iſland, is called by the natives *Raſſe Coronde*, or ſharp ſweet Cinnamon. It is this choice ſort which is exported by the Dutch Eaſt India Company, and it is prohibited, under ſevere penalties, to mix any other ſort with this.

The ſecond is called *Canatte Coronde*, or bitter aſtringent Cinnamon. The bark of this comes off very eaſily, and ſmells very agreeably when freſh, but has a bitter taſte. It has an advantage that it is not ſo plentiful as the firſt; becauſe it requires much ſkill and attention to diſtinguiſh them. The root of this yields a very good ſort of Camphor.

The third is called *Copperee Coronde* or camphorated Cinnamon, becauſe it has a very ſtrong ſmell and taſte of Camphor. It grows plentifully in the iſland, but not in the eaſtern part. However they find means to ſend it over privately, and ſell it to the Danes and Engliſh, trading upon the coaſts of Coromandel. Beſides there is a ſort of Canella growing upon the continent of India about Goa, which is very like this, though it has nothing of the true Cinnamon. This agrees in many things with Canella malabarica ſylveſtris, a wild Cinnamon tree, growing upon the coaſts of Malabar. And although with regard to the ſhape of the tree, and the outward appearance of the bark and leaves, very little difference is to be obſerved between theſe Canellas and the firſt Cinnamon, yet that is vaſtly ſuperior in richneſs, quality and ſweetneſs.

The fourth ſort is called *White Coronde*, or Sandy Cinnamon, becauſe upon being chewed it feels gritty, or as if grains of ſand were between the teeth. The bark comes off eaſily, but is not ſo readily rolled up. It is of a ſharp bitteriſh taſte, and the roots yield only a ſmall quantity of Camphor.

[a] Juſſieu.

[a] Jacquin.

The fifth ſort is called *Sewel Coronde*, glutinous or mucilaginous Cinnamon. This acquires in drying a conſiderable degree of hardneſs: it has little taſte, and an ungrateful ſmell; but the colour is very fine, and the natives mix a good deal of it with the beſt ſort, the colour being much alike, except that in the genuine ſort there are ſome few yelloviſh ſpots towards the extremities.

The ſixth ſort is called *Nieke Coronde*, the tree bearing much reſemblance to another tree which the natives call *Nieke Gas*. The bark has no taſte or ſmell, and is only uſed by the natives in medicine. By roaſting it they obtain an oil, with which they anoint themſelves, to keep off infection: and they expreſs a juice from the leaves, with which they rub their heads, to cool and ſtrengthen the brain.

The ſeventh is called *Dawel Coronde* or Drum Cinnamon: the wood being light and tough, and uſed by the natives for making drums. The bark is taken off whilſt the tree is yet growing; is of a pale colour, and is uſed for the ſame purpoſes as the ſixth.

The eighth ſort is called *Cutle Coronde*, thorny or prickly Cinnamon; the tree being very prickly. The bark is in ſome meaſure like that of the true Cinnamon, but it has nothing of the taſte or ſmell, and the leaves differ very much. The natives apply the root, bark and leaves in form of cataplaſms to tumours.

The ninth ſort is called *Mael Coronde* or flowering Cinnamon, being always in bloſſom. The flowers come neareſt to thoſe of the firſt ſort, but they bear no fruit. The wood never becomes ſo ſolid and weighty in this as in the others, which are ſometimes eight, nine or ten feet in circumference. If this tree be cut or bored into, a limpid water will iſſue from the wound, as from the Birch tree, but it is of no uſe, any more than the leaves and bark.

There is a tenth ſort called *Teupat Coronde* or three-leaved Cinnamon, which does not grow near the Dutch ſettlements, but higher up towards Candia.

Some of theſe are probably the Caſſia, and the ninth is the male tree of the true Cinnamon.

With reſpect to the time when the bark is fit to be taken off, ſome trees are ready two or three years ſooner than others, owing to the difference of ſoil which they grow in: thoſe for inſtance which grow in vallies where the ground is a fine whitiſh ſand will be fit to have the bark taken off in five years; but others which ſtand in a wet ſlimy ſoil, muſt have ſeven or eight years to grow before they are fit to bark. Thoſe trees are alſo later which grow in the ſhade of other large trees, whereby the ſun is kept from their roots. Hence alſo it is, that the bark of ſuch trees has not that ſweetneſs obſervable in the bark of thoſe which grow in a white ſandy ground, where with little wet they ſtand full expoſed to the ſun; but is rather of a bitteriſh taſte, ſomewhat aſtringent, and ſmells like Camphor.

For by the heat of the ſun's rays the Camphor is made ſo volatile, that it riſes up and mixes with the juices of the tree, where it undergoes a ſmall fermentation, and then riſing ſtill higher between the wood, and the thin inner membrane of the bark, it is ſo effectually diffuſed through the branches and leaves, that there is not the leaſt footſtep of it to be perceived. Mean while that thin and glutinous membrane which lines the bark on the inſide attracts all the pureſt and ſweeteſt particles of the ſap, leaving the thick and groſs ones to puſh forwards, in order to nouriſh the branches, leaves and fruit.

If the bark be freſh taken off, that ſap which remains in the tree has a bitteriſh taſte, not unlike that of Cloves. On the contrary, the inner membrane of the bark, when freſh taken off, has a moſt exquiſite ſweetneſs, whilſt the outer part differs very little in taſte from that of other trees. But when the bark is laid in the ſun to be dried and roll up, this oily and agreeable ſweetneſs of the inner membrane is diffuſed through the whole.

The bark may be taken off from trees that have ſtood fourteen, fifteen or ſixteen years, according to the quality of the ſoil: but beyond that time they loſe by degrees their agreeable ſweetneſs, and the bark has more of the taſte of Camphor. Beſides, the bark is then become ſo thick, that when laid in the ſun, it will no longer roll up, but remain flat.

To account for the great quantities of Cinnamon trees ſtill remaining on the iſland of Ceylon, after the general exportation of the bark that has prevailed during ſeveral centuries, ſome authors have aſſured us that after the bark has been ſtripped off the tree, it becomes fit to be ſtripped a ſecond time in four or five years. But this aſſertion is no leſs contrary to obſervation than it is to the common courſe of nature. The truth is, the barked trees being cut down, quickly put forth new ſhoots, which in a period of from five to eight years come again to the knife. Great numbers alſo of trees are continually ſpringing from the fruit which either drops upon the ground, or is diſſeminated by the wild doves called there Cinnamon-eaters: inſomuch that here and there along the roads ſuch quantities of theſe young trees are to be ſeen, as to look like little woods.

The inner bark of this ſpecies in the ſpice ſo well known under the name of Cinnamon. The uſe of the Cinnamon-tree however is not confined to the bark, for it is remarkable that the leaves, fruit, and root, all yield oils of different qualities, and of conſiderable valtie. That produced from the leaves is called Oil of Cloves, and Oleum Malabathri: that from the fruit is extremely fragrant, and of a thick conſiſtence, and at Ceylon is ſaid to be made into candles, for the ſole uſe of the king; and the bark from the root not only affords an aromatic oil, which has been called Oil of Camphor, but alſo a ſpecies of Camphor, which is purer and whiter than the common Camphor. The bark of the Cinnamon-tree, while on the tree, is firſt ſtripped of its outer greeniſh coat; and is then cut longitudinally from the tree, and dried in the ſand, till it becomes fit for the market, when it is of a reddiſh yellow or pale ruſty iron-colour, very light, thin, and curling up into quills or flakes. Cinnamon is one of the moſt grateful of aromatics; its qualities are extracted both by water and ſpirit. It is an aſtringent, and corroborates the viſcera, and proves of great ſervice in ſeveral kinds of alvine fluxes, and immoderate uterine diſcharges. An eſſential oil is ſometimes prepared from Cinnamon, which is moſt exceſſively pungent, ſo as to produce an eſchar on the ſkin, if applied to it: but in doſes of a drop or two properly diluted, with ſugar, mucilages, &c. it is ſaid to be one of the moſt immediate cordials and reſtoratives in caſes of lanquor and debility.

Cinnamon is native of the iſland of Ceylon. Linneus in his Hortus Cliffortianus (1737), ſpeaks of it as a forbidden tree not then known in Europe but from dried ſpecimens, and not eaſy to be introduced, probably from the jealouſy of the Dutch; it was however cultivated by Mr. Miller before 1768: and is now cultivated both in our territories in the Eaſt Indies, and in the iſlands of the Weſt Indies. Monſ. Poivre alſo introduced it, along with the Nutmeg and Clove, into the iſles of France and Bourbon.

Dr. George Young had one hundred and forty Cinnamon trees at St. Vincent's in may 1772. In 1789 it was ſucceſsfully cultivated in Jamaica, from trees taken in a French prize by Admiral Rodney, and preſented by him to the aſſembly of that iſland. In 1792, ſamples of this Cinnamon, ſent by Dr. Dancer, were examined by a committee of the Society of Arts, &c. and ſome eminent dealers in that ſpice; who were of opinion that two of the ſamples were excellent, and even preferable to any Cinnamon imported from Ceylon, both in colour and flavour.

Mrs. Anſley brought two Cinnamon trees from Ceylon to Madras: and Dr. Roxburgh procured ſix trees in 1789[c].

2. Caſſia or Wild Cinnamon, though diſtinguiſhed by Linneus and others, is thought by the beſt judges not to be a diſtinct ſpecies from the preceding or true Cinnamon. Linneus's diſtinction founded upon the leaves is certainly nugatory, and the difference of the

[c] Long's Jamaica, 913. Trans. Soc. Arts. vol. 10, 11.

bark may be owing to ſoil or ſituation, but more probably to want of ſkill or attention in the cultivators. The Caſſia bark is coarſer, and will not roll up like true Cinnamon, but the eſſential difference between the bark of Cinnamon and Caſſia is that the former is always dry, whereas the latter becomes mucilaginous in chewing; hence it has been ſuggeſted to me as a conjecture on the moſt reſpectable authority that the ſuperior excellence of Cinnamon bark may be in great meaſure owing to its having been deprived of that mucilage which adheres to its interior ſurface. At leaſt we are certain that in a curious drawing of Herman's, now in the poſſeſſion of Sir Joſeph Banks, repreſenting the proceſs of cutting and preparing Cinnamon in the iſland of Ceylon, one of the principal figures is that of a woman who is evidently employed in this operation of ſcraping the mucilage from the inner ſurface of the bark.

The Caſſia is deſcribed at great length in the Hortus Malabaricus, and Linnæus refers to this as an excellent deſcription of the true Cinnamon.

Mr. Marſden informs us that the Caſſia trees grow from fifty to ſixty feet high, with large ſpreading horizontal branches, almoſt as low as the earth. The leaves are about four inches long, narrower than thoſe of the Bay, and more pointed, deep green, with a ſmooth ſurface and plain edge: the principal fibres or nerves take their riſe from the peduncle. The young leaves are moſtly of a reddiſh hue. The bloſſoms grow ſix in number upon ſlender footſtalks, cloſe to the bottom of the leaf. They are monopetalous, ſmall, white, and ſtellated in ſix points. The ſtamina are ſix (Linnæus ſays nine), with one ſtyle growing from the germ, which ſtands up in three browniſh ſegments reſembling a cup. The fruit of Cinnamon and Caſſia are very different according to Gærtner's figure and deſcription. The root is ſaid to contain much camphire. The bark is commonly taken from ſuch of the trees as are a foot or eighteen inches diameter, for when they are younger, it is ſaid to be ſo thin, as to loſe all its qualities very ſoon. Thoſe trees which grow in a high rocky ſoil have red ſhoots, and the bark is ſuperior to that which is produced in a moiſt clay, where the ſhoots are green. I have been aſſured, ſays Mr. Marſden, by a perſon of extenſive knowledge, that the Caſſia produced on Sumatra is from the ſame tree that yields the true Cinnamon, and that the apparent difference ariſes from the leſs judicious manner of quilling it. Perhaps the younger and more tender branches, ſhould be preferred; perhaps the age of the tree, or the ſeaſon of the year ought to be more nicely attended to; and it is ſuggeſted that the mucilage which adheres to the inſide of the freſh-peeled rind, does, when not carefully wiped off, injure the flavour of the Caſſia, and renders it inferior to that of the Cinnamon. It is ſaid to be ſometimes purchaſed by the Dutch merchants, and ſhipped for Spain as Cinnamon, being packed in boxes which came from Ceylon with that article [a]. It is of the ſame quality with Cinnamon, but inferior in fragrancy and efficacy. The leaves are called by officinal writers *folia Malabathri*, and the bark *Caſſia lignea*.

It is a native of Malabar, Java, Sumatra, chiefly in the northern and central part of the iſland, in thoſe diſtricts which lie inland of Tappanooly.]

3. The Camphire-tree is very near a-kin to the Cinnamon-tree, from which it differs in the leaves, thoſe of the latter having three ribs running longitudinally from the foot-ſtalk to the point, where they ſoon diminiſh; whereas in this the ribs are ſmall and extend towards the ſides; their ſurface is ſmooth and ſhining. They are male and hermaphrodite in different trees.

[It is a large tree with aſcending branches. Leaves quite entire, ſmooth, moſtly alternate, but ſome oppoſite, petioled, whitiſh underneath. Flowers white, on ſimple, long, lateral peduncles. Berry ſmall, ovate, duſky or browniſh red [b].

Mr. Marſden alſo deſcribes it as equal in height and bulk to the largeſt timber trees, being frequently found upwards of fifteen feet in circumference. The leaf is ſmall, of a roundiſh oval, ending in a long point or tail, the fibres running all parallel and nearly ſtraight. The wood is in much eſteem for carpenter's purpoſes, being eaſy to work, light, durable, and not liable to be injured by inſects, particularly the *coombang*, a ſpecies of bee, which from its faculty of boring timber for its neſt, is called the *Carpenter*.

Native of China, Japan, Borneo and Sumatra, if the Capoor Barroos of the Malays be the product of the ſame tree. It was cultivated in 1731, by Mr. Miller [c].

The chief part of the Camphor that is uſed in Europe is prepared from this tree in Japan. The Japaneſe ſplit the wood into ſmall pieces, and ſublime or diſtil it with water in an iron retort, covered with an earthen or wooden head, in the hollow of which they ſaſten hay or ſtraw, to which the Camphor, as it riſes, adheres. This Camphor is browniſh or white, but in very ſmall ſemipellucid grains. It is packed up in wooden caſks, and thus ſent to India and Europe, where it is purified by a ſecond ſublimation, and reduced into the ſolid maſs in which we find it in our ſhops.

Native Camphor, the *Capoor Barroos* of the Malays, is a production for which Sumatra and Borneo, have in all ages been much celebrated; the Arabians being, at a very early period, acquainted with its virtues. Camphor being of a dry nature does not exude from the tree, or manifeſt any appearance on the outſide. The natives, from long experience, know whether any is contained within, by ſtriking the tree with a ſtick. In that caſe, they cut it down and ſplit it with wedges into ſmall pieces, finding the Camphor in the interſtices in the ſtate of a concrete cryſtallization. Some have aſſerted that it is from the old trees alone that this ſubſtance is procured, and that in the young trees it is in a fluid ſtate, called *mucilo capoor* or camphor oil; but this is a miſtake. The ſame ſort of tree that produces the fluid, does not produce the dry, tranſparent flaky ſubſtance, nor ever would. They are readily diſtinguiſhed by the natives. Many of the trees however produce neither the one nor the other.

The native Camphor is purchaſed on the ſpot at the rate of ſix Spaniſh dollars the pound, or eight dollars the catty for the beſt ſort; which ſells at the China market for about twelve or fifteen hundred dollars the pecul of one hundred catties, or one hundred thirty-three pounds and a third. The traders uſually diſtinguiſh three degrees of quality, by the names of head, belly and foot, according to its purity and whiteneſs. Some add a fourth ſort, of extraordinary fineneſs, of which a few pounds only are imported to Canton, and ſell there at the rate of two thouſand dollars the pecul.

It has been generally ſuppoſed that the Chineſe mix the Camphor of Sumatra and Borneo with their own and the Japaneſe. But the truth ſeems to be that they purchaſe the former for their own uſe, from an idea of its ſuperior efficacy, and export the latter as a drug they hold in no eſtimation. It is certain that the common Camphor will evaporate till it wholly diſappears. Whereas that of Sumatra and Borneo, called native Camphor, though doubtleſs from its volatility it muſt be ſubject to ſome decreaſe, does not appear to loſe much in quantity from being kept.

Camphor oil is a valuable domeſtic medicine, much uſed by the Sumatrans in ſtrains, ſwellings and inflammations; the particles, from their extreme ſubtilty, readily entering the pores. It is not manufactured, undergoes no preparation, and though termed an oil is rather a liquid and volatile reſin, without any oily quality. To procure it, they make a tranſverſe inciſion into the tree, to the depth of ſome inches, and then cut ſloping downwards from above the notch, till they leave a flat, horizontal ſurface. This they hollow out, till it is of a capacity to receive a quart. They then put into the hollow a bit of lighted reed, and let it remain for about ten minutes, which acting as a ſtimulus, draws the fluid to that part. In the ſpace of a night, the liquor fills the receptacle pre-

[a] Hiſt. of Sumatra, p. 125. [b] Loureiro. [c] Hort. kew.

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pared for it, and the tree continues to yield a ſmaller quantity for three ſucceſſive nights, when fire muſt be again applied: but on a few repetitions it is exhauſted. An oil not much unlike this from the Camphor tree is procured from another tree by the ſame method. It is called *menia cayoo* or wood oil, and is uſed to rub on timber expoſed to the weather, to preſerve it from decay; and it is alſo boiled with the *dammar* to pay the bottom of ſhips and boats[c].

It is ſuppoſed by many that the Camphor tree of Borneo and Sumatra is different from that of China and Japan. Loureiro does not preſume to decide whether they be the ſame, but he affirms, from repeated experience, that there is no difference in the efficacy of the drug, whatever country it comes from.

Camphor is conſidered as one of the principal diaphoretics and antiſeptics, and as poſſeſſing a degree of anodyne or antiſpaſmodic power. It is a medicine of a ſubtle and penetrating nature, and quickly diffuſes itſelf through the whole habit. If taken in conſiderable quantity it produces an uneaſy ſenſation in the ſtomach: though it does not heat the body ſo much as might be expected from its taſte: on the contrary it often rather occaſions a ſenſe of coolneſs. In acute diſeaſes it is given from a quarter of a grain to one or two grains or more, in conjunction with nitre or other anti-inflammatory medicines of the ſaline kind. Hoffman obſerves that it anſwers beſt on the approach of a criſis, or in the decline; and that it ſhould be uſed with caution during the height of fever, where the heat is great and the ſkin dry; and the ſame caution, he adds, ſhould be obſerved in plethoric habits, &c. In chronical diſorders it is uſed more freely; and ſometimes is uſed in conjunction with opium. It is conſidered as a corrector of the irritating powers of Cantharides. Camphor alone has ſometimes been known to cure that peculiar ſpecies of ſpaſmodic diſorder called St. Vitus's dance. Camphor is alſo uſed in a diſſolved ſtate in ſpirit of wine, &c. as an external embrocation in rheumatic pains, paralytic numbneſs, &c. &c. it is alſo made an ingredient in many other preparations.

4. Loureiro deſcribes his L. Caryophyllus as a middle-ſized tree, with brachiate and ſomewhat ſpreading boughs. Leaves ovate-lanceolate, quite entire, with three terminating nerves, ſmooth, an inch and half long, dulky-green above, glaucous beneath, petioled, alternate and oppoſite, odoriferous, hardiſh. Flowers white, ſmall, corymb-racemed, terminating. Petals ovate-lanceolate, ſpreading. Style longer than the ſtamens. Berry ovate, ſmall, dulky red. Bark and root dulky red, having the ſmell and taſte of Cloves, whence Loureiro's trivial name. He allows that his L. Caryophyllus is not far removed from L. Culilaban of Linnæus, and it is probably the ſame.

Linnæus recommends the fructification to be examined, on account of the ſingularity of a Laurus having oppoſite leaves. But it appears that the leaves are not conſtantly oppoſite, and that the fructification is that of Laurus.

Native of the Eaſt Indies and Cochinchina.

5. Native of Jamaica.

6. This tree riſes by a ſtrong branched trunk to a very conſiderable height; the inward bark is of a light blood colour, and incloſes a ſtrong greeniſh timber, which has given occaſion to the trivial name of Linnæus, taken from Browne's generic appellation. Leaves ſmooth, with three conſiderable arched nerves, reſembling thoſe of the Camphor-tree in ſhape, ſize and texture. Fruit ſcattered up and down upon the branches, ſeldom exceeding a haſel nut in ſize.

Wood very tough and hard, anſwering better than any other ſort for the cogs in the rolls of a ſugar-mill. Generally eſteemed one of the beſt timber woods in the iſland of Jamaica, and uſed on all occaſions where ſtrength and durability are required[b].

Introduced in 1778, by Thomas Clark, M. D.—Browne calls it Greenheart or Cogwood tree.

7. This is a tree with ſpreading branches, rugged with raiſed dots, but without any pubeſcence, aſh-coloured. Twigs or ſhoots like the branches, but in a ſort of whorl. Leaves frequent towards the ends of the ſhoots, alternate, petioled, acuminate with a blunt point, quite entire with a reflex margin, paliurous, pale green above, glaucous beneath, or yellow, ſmooth, two inches or more in length. Petioles ſemicylindric, grooved above, ſmooth. Flowers on the ſhoots below the leaves, racemed, on very ſhort peduncles, one-flowered or bind, thick, aſh-coloured, half a line in length. Drupe ovate, a little attenuated at top, ſhint, very dark blue, ſucculent, ſmooth, the ſize of a pea, containing a blue juice. Nut the form of the drupe, ſtriated, ferruginous. Kernel whitiſh. The expreſſed oil is uſed for making candles in Japan, of which country it is a native.

8. Stem ſhrubby. Branches round, knobbed with the fallen leaves, aſh-coloured, wrinkled, ſmooth. Leaves oppoſite, on ſhort petioles, acuminate, ſmooth, two inches long. Flowers ſcattered at the ends of the ſhoots. Peduncles ſolitary, one-flowered, half the length of the leaves.

Native of Japan[a].

9. The Laurus or Bay has been celebrated in all ages, and hence is called *nobilis* by Linnæus. With us it appears as a ſhrub, but in the ſouthern parts of Europe it becomes a tree of twenty or thirty feet in height; much ſubject however in general to put out ſuckers. Leaves evergreen, of a firm texture, the largeſt from an inch and half to two inches in breadth in the broad-leaved variety, and from three to four inches in length, entire, on ſhort petioles, having an agreeable ſmell, and an aromatic, ſubacrid, bitteriſh taſte. Flowers dioecous, or male and female on different trees, in racemes ſhorter than the leaves, of an herbaceous colour. Corollas four-petalled in the male flowers, with from eight to twelve ſtamens. Berry ſuperior, ovate, fleſhy, dark purple almoſt black. Receptacle none except a ſmall tubercle at the bottom, whence a vaſcular band riſes on each ſide the whole length of the ſeed, which is large, ovate, ſlightly mucronate above[f].

Native of the ſouthern parts of Europe, and of Aſia. Ray obſerved it not uncommon in woods and hedges in Italy. Haller ſays it abounds in all the orchards about Moutru, near the lake of Geneva. According to Scopoli, it is found in the woods of Iſtria. Belſonius remarked it on mount Ida, and very large trees on mount Athos. Abbé Sr. Pierre obſerves that fine Bay-trees are no where more common than on the banks of the river Peneus in Theſſaly, which might well give occaſion to the fable of the metamorphoſis of Daphne daughter of that river. Pallas ſets it down as a native of the Cherſoneſus Taurica, &c. It is wild alſo in the South of France, Spain, Crete, and many parts of the Levant. In England, it was cultivated certainly in 1562, as we learn from Turner[g]; probably much earlier.

Mr. Miller makes three ſorts of the Sweet Bay.]

1. The broad-leaved Bay of Aſia, Spain and Italy, almoſt too tender for the open air in England; with leaves much broader and ſmoother than thoſe of the common ſort.

2. The Common Bay, ſeldom hurt with us except in very ſevere winters. Of this there are two varieties, one with plane leaves, the other with leaves waved on the edges.

3. The narrow-leaved Bay, with very long narrow leaves, not ſo thick as thoſe of the two preceding, and of a light green: the branches are covered with a purpliſh bark, and the male flowers come out in ſmall cluſters from the axils of the leaves, ſitting cloſe to the branches.

[It is to be found in the nurſeries with variegated leaves, and other trifling varieties are mentioned in the old authors.

The leaves and berries of this well-known ſpecies have an aromatic, aſtringent taſte and a fragrant ſmell: the berries are much ſtronger than the leaves: both are accounted ſtomachic, carminative, and uterine, in

[c] Marſden's Sumatra, p. 120—123. [b] Browne. [f] Hort. kew. [a] Thunberg. [g] Gerarde. [e] Hort. kew.

which intentions the leaves are infused and drank as a tea, and the eſſential oil of the berries adminiſtered on ſugar, or diſſolved by means of mucilages or in ſpirit of wine in the doſe of a few drops. The principal uſe of Bay leaves and berries however in the preſent practice is external; viz. for fomentations, &c. &c.

There is ſome confuſion among perſons ignorant of botany, between the Sweet Bay [1] what we now commonly call Laurel (Prunus Lauroceraſus), which is known only to more modern times in Europe. What we now call Bay was formerly called Laurel, and the fruit of it only named Bayes.

In Greek it is Δαφνη; in German, *Lorbeerbaum*; in Daniſh, *Laurbertræe*; in Swediſh, *Lagerbærstrad*; in French, *Laurier*; in Italian, *Allora*; in Spaniſh, *Laurel*; in Portugueze, *Loiro*, *Loireiro*; in Ruſſian, *Lawr* or *Lawra wse derewo*.

This is certainly the true *Laurus* of the Romans, and *Daphne* of the Greeks, deſtined to furniſh the Delphic wreath, to grace the head of the triumphant hero, to guard the gate of the Ceſars and the Pontifex maximus, to be placed on the houſes of the ſick, and to be worn on the head of the prieſteſs of Delphi, who alſo chewed the leaves, and threw them on the ſacred fire.

10. This is a large tree with aſcending branches. The branches, and particularly the ſhoots are tubercled with ſcars from the fallen leaves; they are alternate, curved inwards, wrinkled and ſmooth. Leaves ſcattered, acuminate with a bluntiſh point, quite entire, ſmooth, veined, reflex, four inches long. Petioles ſemicylindric, grooved, ſmooth, reflex. Flowers terminating, below racemed, above panicled. Panicle trifid. Ovate, red nectareous ſcales at the baſe of the filaments, which vary in number from ſeven to nine; ſix outer, and one, two or three inner: they are unequal, flat, and nearly equal to the calyx. Anthers compreſſed, four-celled. Germ roundiſh. Style very ſhort. Berry globular, ſmall, brown [2].

Native of Madeira; the Canary iſlands, Virginia, Japan, Cochinchina.]

Mr. Miller ſays it was brought from the Canary iſlands to Portugal, where it has been propagated in ſo great plenty, as to appear now as if it were a native of that country. In the year 1620 it was raiſed in the Farneſian garden from berries brought from India, and was ſuppoſed to be a baſtard ſort of Cinnamon.

[Loureiro obſerves that the wood is of a yellow colour, not heavy, good for building, but better ſtill for furniture. This wood is called *Vigniatico* in the iſland of Madeira, and is probably what is imported into England under the name of Madeira Mahogany. It is hardly to be diſtinguiſhed from Mahogany, except that it is ſomewhat leſs brown [3].

It appears from Rea's Flora, that it was cultivated here in 1665.

11. Native of Madeira and the Canary iſlands. Introduced in 1760, by Lord Adam Gordon [4].]

12. The Alligator or Avocado Pear grows to the height of thirty feet or more in the Weſt Indies, and has a trunk as large as our common Apple-trees; the bark is ſmooth, and of an aſh colour: the branches are beſet with pretty large, oblong, ſmooth leaves, like thoſe of Laurel, of a deep green colour. The flowers are for the moſt part produced towards the extremities of the branches. The fruit is the ſize of one of our biggeſt pears, incloſing a large ſeed with two lobes, included in a thin ſhell.

[The branches are very ſucculent and ſoft. The pulp of the fruit is covered with a tough ſkinny coat, and contains a large rugged ſeed, which is wrapped up in one or two thin membranous covers. This fruit is held in great eſteem in the Weſt Indies: the pulp is of a pretty firm conſiſtence, and has a delicate rich flavour; it gains upon the palate of moſt perſons, and becomes ſoon agreeable even to thoſe who cannot like it at firſt; but it is ſo rich and mild, that moſt people make uſe of ſome ſpice or pungent ſubſtance to give it a poignancy; and for this purpoſe, ſome make uſe of wine, ſome of ſugar, ſome of lime-juice, but moſt of pepper and ſalt. This fruit ſeems equally agreeable to the horſe, the cow, the dog and the cat, as well as to all ſorts of birds; when plentiful, it makes a great part of the delicacies of the negroes [5].

Native of the Weſt Indies. Cultivated in 1739 by Mr. Miller [6].]

13. In ſome ſituations near the ſea this riſes with a ſtraight large trunk to a conſiderable height; but in the inland parts of the country it is of an humbler ſtature. The leaves are much longer than thoſe of the common Bay, and are a little woolly on their under ſide; their edges are a little reflexed; the veins run tranſverſely from the midrib to the ſides. The male flowers come out in long bunches from the axils of the leaves; the female flowers in looſe bunches on pretty long red peduncles. Berries blue in red cups: [grow two and ſometimes three together. Theſe trees are not common in Virginia, except in ſome places near the ſea. In Carolina they are every where ſeen, particularly in low ſwampy lands. The wood is fine-grained, and of excellent uſe for cabinets, &c. Some of the beſt reſembles watered Satin, and is very beautiful [7].

Cultivated in 1739, by Mr. Miller [8].

Plumier, regarding it as a genus diſtinct from Laurus, gave it the name of *Berbonia* from Gaſton Bourbon, ſon of Henry IV. and uncle of Louis XIV.

14 to 21. All theſe ſpecies are natives of Jamaica [9].

17. This is called Loblolly Whitewood, or white Sweetwood. The berries are as large as Cherries, plump and black, and the cups pretty thick and ſwelling. The leaves and tender ſhoots make excellent fodder for cattle.

20. This grows to about twelve feet in height, is four inches in diameter near the root, and divides into a great number of branches near the top. Berries oblong, even, elliptic, ſeldom leſs than an inch in length: they are black, very ſucculent, and contain a ſingle two-lobed kernel, without any partial covering [10].

22. This is a ſmooth tree, with the branches and ſhoots in threes; branches round, knobbed, aſh-coloured, divaricated; ſhoots angular. Leaves ſcattered at the ends of the ſhoots, on very ſhort petioles, acuminate with a blunt point, obſcurely ſerrate with a reflex margin; ſhining above, with the midrib ſtanding out; pale underneath, ſmooth, from an inch to an inch and half in length. Flowers uſually ſolitary, but ſometimes two together. Fruit oblong, with the piſtil permanent.

Native of Japan.

23. Stem ſhrubby, very much branched. Branches in threes or thereabouts, wrinkled, tubercled, aſh-coloured, ſmooth, curved inwards. Shoots four, five or more together forming a ſort of umbel, angular, upright. Leaves ſcattered about the ends of the twigs, petioled, blunt, margined, nerved, ſhining above, paler underneath, ſmooth, an inch or more in length. Drupe, or rather berry globular, blue the ſize of a pea.

Native of Japan [11].]

24. This riſes with a ſhrubby branching ſtalk eight or ten feet high, covered with a purple bark. Leaves oppoſite, near two inches long and one inch broad, ſmooth on their upper ſide, but veined on their under, where they are rough. Berries red, nearly the ſize and ſhape of the common Bay-berry.

[Linnæus remarks that the fruiting peduncles are coloured.

Native of North America, in ſwampy lands. It was introduced in 1765, by Mr. John Cree [12].]

25. This riſes to the height of ten or twelve feet, dividing into many branches. Leaves near three inches long, and an inch and half broad, ſmooth on their upper ſurface, but with many tranſverſe veins on their

[1] Thunb. and Loureiro. [2] Hawkſw. voy. 2. p. 5. [3] Hort. kew. [4] Catesby. [5] Hort. kew. [6] Swartz. [7] Browne. [8] Thunberg. [9] Hort. kew.

under ſide. Flowers of a white herbaceous colour, with ſix ſtamina in each.

[Involucre ſeſſile, four-leaved, much reſembling that of Cornus, including five petioled florets, the length of the involucre. Proper calyx (or corolla) ſix-parted, yellow, with linear ſegments. Stamens eight or nine, the length of the calyx, appendicled on the ſides. Germ ovate, within the calyx. Style ſimple[a]. Number of petals and ſtamens uncertain; ſometimes eight of the former and twelve of the latter[b].

Native of Virginia; whence it was ſent by Baniſter to Compton Biſhop of London, and cultivated in his garden at Fulham in 1688, by Mr. George London[c].

This tree has been confounded with the true Benzoin tree, for which ſee *Styrax Benzoin*.]

26. The Saſſafras tree is commonly rather a ſhrub, ſeldom riſing more than eight or ten feet high. (It ſometimes however grows into a large tree.) The leaves are of different ſhapes and ſizes; ſome oval and entire, about four inches long and three broad; others are deeply divided into three lobes; theſe are ſix inches long, and as much in breadth from the extremity of the two outſide lobes; they are placed alternately on pretty long foot ſtalks, and are of a lucid green; they fall off early in the autumn, and in the ſpring, ſoon after the leaves begin to come out, the flowers appear juſt below them, on ſlender pedunclcs, each ſuſtaining three or four ſmall, yellow (greeniſh white) flowers, which have five oval, concave petals, and eight ſtamina in the male flowers, which are upon different plants from the hermaphrodite flowers. Theſe are ſucceeded by an oval berry, which, when ripe, is blue.

[Ehret, in the year 1735, obſerved the male flowers in the nurſery of Mr. Chriſtopher Gray at Fulham to have uſually nine ſtamens, with glands between them uncertain in their number. Theſe flowers had a ſimple ſtyle, a ſtigma variouſly conſtructed, and no germ. He alſo examined the female flowers in Mr. James Gordon's nurſery at Mile End, and found the petals ſmaller, ſix ſtamens with an uncertain number of glands, from three or four to nine, ſtyle ſimple crowned with its ſtigma, and a germ[d]. From this deſcription it appears that the two ſorts of flowers ſhould have been called imperfect hermaphrodites, rather than male and female.

Cateſby deſcribes the Saſſafras as a ſmall tree, the trunk uſually not a foot thick. The leaves divided into three lobes by very deep inciſures. In march bunches of ſmall five-petalled flowers coming forth, ſucceeded by berries, in ſize and ſhape not unlike thoſe of the Bay-tree, hanging on red foot-ſtalks, with a red calyx, reſembling that of an acorn: they are at firſt green, and when ripe blue.

This tree is deſcribed at full length in the ſecond volume of Nova Acta Nat. Cur. by Trew, who has there given an ample account of its Natural Hiſtory. He there obſerves that the male flowers have eight or nine ſtamens, and ſometimes as many as thirteen, and ſix glands; two to each inner filament: the female or rather hermaphrodite flowers only four ſtamens without any glands.

The wood of this tree, which is of a light and ſpongy texture, has a fragrant ſmell, and a ſweetiſh aromatic taſte, and with the bark, is much uſed in the Materia Medica. It gives out its virtues both to ſpirit and water, but moſt readily to the former.

Saſſafras is uſed as a mild corroborant, diaphoretic, and ſweetener, in ſcorbutic, venereal, cachetic, and catarrhal diſorders. Infuſions made in water from the cortical or woody part raſped or ſhaved, are commonly drank as a tea: and that, in ſome conſtitutions, from its fragrance, is ſaid to affect the head at firſt; which inconvenience ceaſes on continuing its uſe a little time. It is made an ingredient in ſeveral diet-drinks, both empyrical and ſuch as are uſed in regular practice.

Native of almoſt all America, commonly in a ſwaſhy ſoil, never in ſwamps. It was alſo obſerved by Loureiro in the north of Cochinchina near Tunquin. It has withſtood the cold of ſeveral winters at Mrs. Colliſon's at Peckham, Mr. Bacon's at Hoxton, Mr. Gray's at Fulham, Mr. Gordon's at Mile-end, &c. &c. and was cultivated before 1633, by Mr. Wilmot, at Bow[e].

A decoction of Saſſafras with ſugar was ſold in coffee-houſes at the end of the laſt century, under the name of *Bochet*[f]. There was a ſhop in Fleet-ſtreet for the ſale of it within theſe few years, and perhaps others. The bark has been ſubſtituted in America for ſpice. It is ſaid that bedſteads made of the wood will never be infeſted with bugs[g]. Loureiro remarks, that it is very proper for making cabinets in hot climates, on the ſame account, becauſe the ſmell repels inſects. Willdenow however doubts whether the Cochinchineſe Saſſafras be the ſame with the American.

27. This is a tree with the branches warted by the fallen petioles. Leaves alternate, quite entire, petioled, naked, paler underneath. Peduncles from the axils of the leaves ſolitary or in pairs, with three or four umbels, as in Cornus, many-flowered. Involucre four-leaved; leaflets the length of the umbel, ovate, concave, blunt, hirſute on the outſide. Pedicels ſhort, hirſute. Calyx minute, hirſute. Petals ſometimes ſmall, but in general none. Stamens twelve to fifteen, with the filaments hirſute on the outſide, ending in dilated anthers. Three or four corpuſcles pedicelled and peltate, ſhorter than the ſtamens; probably the nectaries. Germ oblong, rough-haired. Style longer than the ſtamens. Stigma peltate. It has the appearance of a Laurus, but perhaps it may be a ſpecies of Tomex.

Native of Tranquebar in the Eaſt Indies, whence it was ſent by König[h].

28. This is a ſmall tree, five feet high, very much branched, with an unarmed twiſted trunk. Leaves quite entire, with terminating nerves, ſmooth, alternate, duſky green above, pale beneath, petioled. Flowers white. Common calyx four-leaved; leaflets roundiſh, concave, the two outer ſmaller, hairy: containing five peduncled florets. Proper calyx none. Corolla ſix-petalled; petals ovate, concave, almoſt equal. Filaments nine, flattiſh, ſhorter than the corolla; the three inner biglandulat: anthers compreſſed, blunt. Germ ovate, ſuperior: ſtyle ſhort: ſtigma blunt. Berry ovate, juicy, ſmooth, red, ſmall. Root thick, vertical, many-cleft, brown, oily. The whole plant is extremely bitter, and has the taſte and ſmell of Myrrh; whence the trivial name.

Native of Cochinchina. The root is warm, diuretic, emmenagogue, antiputreſcent, and anthelmintic. A red oil expreſſed from the berries, and having the ſmell and taſte of the plant, is uſed by the natives in the itch, wounds, puſtules and putrid ulcers, againſt worms and inſects that attack the human body. Loureiro ſuſpects that this may be the plant which affords the true Myrrh.

29. This is a large tree, with ſpreading boughs. Leaves quite entire, flat, cortaceous, veined, petioled, alternate, duſky green. Flowers reddiſh white, in axillary corymbs. Calyx (or corolla) cup-ſhaped, coloured, ſix-parted, with oblong, upright ſegments. Nectary of ſix peduncled glands. Stamens nine, unequal, of which three are appendicled; all collected into three bundles. Anthers oblong, flattiſh, truncate, not opening longitudinally, but emitting the pollen by four holes. Germ roundiſh. Style filiform, equal to the ſtamens. Stigma blunt. Berry roundiſh, fleſhy, very ſmall.

Native of mountains in Cochinchina.

30. This alſo is a large tree with ſpreading branches. Leaves acuminate, quite entire, veined, pale, odorous, hard, ſhining, reflex, alternate. Flowers white in looſe racemes. Calyx (or corolla) fleſhy, lobed, ſharply ſix-cleft, inferior, permanent. Stamens nine, flat, widening above, and thence emitting four very ſlender filaments from four holes, with as many oblong, two-celled little anthers. Nectary glandiliferous. Berry oblong-ovate, black.

Native of Cochinchina in mountain woods.

[a] Linn. ſyſt. [b] Colden. [c] Raii hiſt. and hort. kew. [d] Eph. nat. cur. [e] Hort. kew. from Ger. emac. [f] Houghton's collections, 3. 65. [g] Catlin in med. acad. Amer. vol. 1. [h] Retzius.

This and the preceding have a great affinity with Ocotea guianenſis of Aublet, 780. t. 310.—Poroſtema of Schreber, n. 1226.

31. This is a middle-ſized and very branching tree; the branches ſpreading. Leaves quite entire, flat, ſhining, two inches long, alternate, petioled. Flowers white, on one-flowered, lateral peduncles. Common calyx four-leaved: leaflets roundiſh, concave, coloured, deciduous; containing five florets. Petals ſix, roundiſh, ſpreading, unequal, with the border bitten. Nectary of ſix, ſeſſile, oblong, reflex glands. Filaments nine very ſhort, ſix declining to the petals, the other three upright, without glands. Six of the anthers compreſſed and ſquare, with four oblique cells. Germ roundiſh, ſuperior. Style none. Stigma ſimple. Berry globular, black, peduncled, very ſmall. Seed globular.

Native of Cochinchina, and probably alſo of China.

Berries corroborant, cephalic, ſtomachic and carminative. A decoction of them is of ſervice in the vertigo, hyſterics, palſy, &c. The bark has the ſame qualities, but in an inferior degree. The natives uſe the freſh berries as a ſauce for fiſh. The ſmell is fragrant: the taſte aromatic and warm. They have the ſize, colour and form of Black Pepper; and being faſtened to a long ſlender peduncle, are not unaptly called *Piper caudatum* or tailed Pepper.

The fruit having the form, ſize and quality of the Cubebe, Loureiro ſuppoſes this to be the tree which produces it: but the Cubebe is repreſented as a climbing plant, and the younger Linnæus decides that it is a ſpecies of Pepper.

32. This is a large tree with ſpreading branches. Leaves acuminate, quite entire, ſcattered, petioled, five inches long. Flowers polygamous, greeniſh yellow: in the hermaphrodites, calyx ſpreading bell-ſhaped, ſix-cleft, with ſharp ſegments. Filaments nine, awl-ſhaped, ſhorter than the calyx, very hairy; with oblong, two-celled, incumbent anthers. Germ roundiſh. Style thick, equal to the calyx. Stigma bifid, reflex. Berry globular, coriaceous, ſmall. Male flowers on a diſtinct plant, with a ſix-leaved calyx; the leaflets ovate, concave, lanuginoſe. Filaments nine, ſhort, hairy, with flat, four-celled anthers.

Native of mountain woods in Cochinchina.

The wood is yellow, durable, and fit for building or turning[1].

This ſpecies reſembles the 27th deſcribed by Retzius[2].

Loureiro remarks, that in all the ſpecies of Laurus which he found in India, he obſerved always hermaphrodite flowers, berries and not drupes, and the leaves perennial: but the latter circumſtance is common to almoſt all trees in the torrid zone.]

PROPAGATION AND CULTURE.

1, 2. Cinnamon and Caſſia are not ſo tender as moſt perſons imagine, and the tender treatment of the plants brought to England has generally deſtroyed them. Great heat is certainly prejudicial to them; when the plants therefore have taken new roots in the pots or tubs, they ſhould in ſummer be placed in a glaſs-caſe, where they may have plenty of air in warm weather; and in winter they ſhould be placed in a ſtove moderately warm.

3. In Europe this tree is propagated by layers, which are generally two years, and ſometimes longer, before they take root, ſo that the plants are very ſcarce; and as all thoſe which I have ſeen flower are male trees, ſo there can be no hopes of procuring ſeeds from them here: but if the berries of this, and alſo of the Cinnamon-tree, were procured from the places of their growth, and planted in tubs of earth, as is directed for the Saſſafras-tree, there may be a number of theſe plants procured in England: and if they were ſent to the Britiſh colonies in America, they might be there cultivated, ſo as to become a public advantage; eſpecially the Cinnamon-tree, which will grow as well in ſome of our iſlands in the Weſt Indies, as it does in the native places of its growth, and in a few years the trees might be had in plenty, for they propagate eaſily by the berries, as the French experienced in their American iſlands. The Portugueze brought ſome of the Cinnamon-trees from the Eaſt Indies, and planted them on the iſland of Princes, on the coaſt of Africa, where they now abound, having ſpread over a great part of the iſland.

The Camphire-tree does not require any artificial heat in winter, ſo that if it be placed in a warm dry green-houſe it will thrive very well. During the winter ſeaſon it muſt be ſparingly watered, and in the ſummer be placed abroad in a warm ſituation, where it may be defended from ſtrong winds, and not too much expoſed to the direct rays of the ſun. But during this ſeaſon it muſt be frequently refreſhed with water.

It may be propagated by laying down the young branches in autumn, which ſhould be treated in the ſame manner as is directed for L. Benzoin.

9, 10, 13. Theſe may be propagated by layers, and the common ſort (n. 9.) is generally propagated by ſuckers; but thoſe plants never keep to one ſtem, but generally ſend out a great number of ſuckers from their roots, and form a thicket, but do not advance in height; therefore the beſt way to have good plants, is to raiſe them from the berries, which they can be procured, for the plants which come from ſeeds, always grow larger than the others, and do not put out ſuckers from their roots, ſo may be trained up with regular ſtems. The beſt way is to ſow the berries in pots, and plunge them into a moderate hot-bed, which will bring up the plants much ſooner than if they are ſown in the full ground, and they will have a longer time to get ſtrength before winter; but the plants muſt not be forced with heat, therefore they ſhould be inured to bear the open air the beginning of June, into which they ſhould be removed, where they may remain till autumn; then the pots ſhould be placed under a common frame, that the plants may be protected from hard froſt, but in mild weather they may enjoy the free air; for while the plants are ſo young, they are in danger of ſuffering in hard froſt, even the common ſort of Bay. The ſpring following, thoſe ſorts which will not live in the open air, ſhould be each tranſplanted into ſeparate pots; but the common ſort may be planted in nurſery-beds ſix inches aſunder each way, where they may grow two years, by which time they will be fit to plant where they are deſigned to grow. The other ſorts muſt be conſtantly kept in pots, and ſhould every year be new potted, and as they advance in growth, they muſt have larger pots. As theſe plants require ſhelter in winter, a few of each ſort will be enough for a large green-houſe.

The common Bay will make a variety in all evergreen plantations; and as it will grow under the ſhade of other trees, where they are not too cloſe, it is very proper to plant in the borders of woods, where it will have a good effect in winter.

[Mr. Evelyn makes mention of Bay-trees thirty feet high, and almoſt two feet in diameter in the trunk. In the laſt century abundance of theſe trees were raiſed and kept in tubs, with curious round heads, and brought over here from Holland and Flanders[3]. In a warm dry ſandy or gravelly ſoil the Bay however will grow to the height of thirty or forty feet: but to ſecure its fine verdure it ſhould be planted in ſituations defended from north and north-eaſt winds, from which it ſometimes ſuffers in ſevere winters; generally however recovering in ſummer. The Bay ſhould never have a branch taken from it but in the ſpring. As a plant of elegance and beauty, yielding a moſt refreſhing and ſalubrious ſmell to a conſiderable diſtance, it cannot be too much encouraged[4]: and to perſons of claſſical taſte it can never fail to furniſh many pleaſing ideas, by recalling to their minds various fine paſſages and alluſions of the ancient poets.

The berries are ripe the end of january or beginning of february, when they ought to be gathered and preſerved in dry ſand till the beginning of march. Then, or as ſoon as the weather becomes favourable, on a ſhady border of rich looſe unlunged ſoil, made fine and well protected, drop the berries in rows fifteen

[1] Loureiro. [2] Willdenow. [3] Hought. collect. 3. 54. [4] Boutcher.

inches

inches aſunder, and four inches in the row, ſifting over them fine rich mould an inch thick. As ſoon as you perceive the plants to heave up the earth, refreſh them frequently but moderately with water, in the morning, when cold, in the evenings when mild weather, and continue to do ſo all the ſummer months. Let them remain two years, watering the ſecond ſummer.

Such as are intended to be increaſed by layers, may be laid down in march or auguſt; the latter is the beſt ſeaſon, and by the ſecond ſpring will make good plants.

The Bay will alſo grow by cuttings, but in the open ground ſlowly: in the beginning of april therefore prepare a moderate hot-bed of tanners bark, and cover it eight inches deep with rich looſe freſh earth. Plant the cuttings five inches deep, and eight or nine aſunder, rubbing off their leaves; water them gently every evening while the bed continues warm, and cover the glaſſes with mats during the heat of the day. When the cuttings have ſhot, let them receive all mild gentle ſhowers, and the evening dews. The beginning of auguſt the glaſſes may be taken off, and replaced when the weather begins to be froſty; keeping them open every mild day. The beginning of april following, or as ſoon as the weather becomes temperate, remove both glaſſes and frames; continue frequent and plentiful waterings during the ſummer months as the weather may require, and the ſucceeding april, the plants will be ſtrong, well rooted, and fit for removal.

The plants raiſed in any of theſe ways may now be removed to the nurſery; when having cut away their ſuperfluous roots and branches, attentively encouraging the leading ſhoot, plant them in a well-ſheltered quarter of light mould, in rows three feet and a half aſunder and eighteen inches in the row. Dig the ground autumn and ſpring; keep it clean, looſe and mellow in ſummer, and prune the plants annually in april. Let them continue three, but not more than four years, before they are planted out, where they are to remain.

The gold-ſtriped Bay is tender, commonly kept in pots, and houſed with hardy greenhouſe plants. It will ſtand in the open ground, but will be tarniſhed and ſometimes much injured in ſevere winters. It is a ſtrong rich variegation. The method of increaſing it is by budding it on the plain ſort.*]

The broad-leaved and narrow-leaved Bay are not ſo hardy as the common ſort, and will ſcarcely live abroad whilſt young, in common winters, without ſhelter. In ſevere winters the old trees are frequently killed, or at leaſt the branches are much injured. The plants therefore are frequently kept in tubs and houſed in winter: as are thoſe of the tenth or Indian Laurel always.

Although ſome plants of L. Borbonia have lived abroad in a mild winter, when planted in a warm ſituation, yet the firſt ſharp winter deſtroys them; they muſt be kept in pots or tubs therefore, and houſed in winter.

12. The Alligator Pear is propagated by ſeeds, which ſhould be obtained as freſh as poſſible from the countries of its growth; if they are brought over in ſand they will be more likely to grow than when dry. Set them in pots filled with rich light earth; plunge them into a hot-bed of tanner's bark, which ſhould be kept pretty warm; water them frequently but moderately when the earth appears dry. In five or ſix weeks the plants will come up; treat them very tenderly by keeping up the bed to a due temperature of heat; and when the weather proves warm admit the freſh air by raiſing the glaſſes a little. When they are about four inches high tranſplant them carefully, and where there are ſeveral plants in one pot, part them, preſerving a ball of earth to the root of each, and put them into ſeparate ſmall pots filled with light rich earth, which plunge into a hot bed of tanner's bark, ſhading them until they have taken new root; after which freſh air ſhould be admitted to them, in proportion to the warmth of the ſeaſon. Towards michaelmas the plants muſt be removed into the ſtove, and plunged into the bark bed, where during the winter ſeaſon they ſhould be kept in a moderate warmth, and muſt be gently watered twice a week. In the ſpring the plants ſhould be ſhifted into pots a ſize larger, and the bark-bed ſhould be then renewed with freſh tan, which will ſet the plants in a growing ſtate early, whereby they will make great progreſs the following ſummer. Theſe plants muſt be conſtantly kept in the ſtove, for they are too tender to bear the open air in this country at any ſeaſon, but in warm weather they ſhould have a large ſhare of air admitted to them.

24, 25, 26. Theſe three ſorts will live in the open air in England, but the Saſſafras is often injured by very ſevere froſts, eſpecially if it be in an expoſed ſituation; therefore theſe plants ſhould have a warm ſituation and a looſe ſoil; and in moiſt ground this, and alſo the twenty-fourth ſort, will thrive much better than in a dry ſoil; for when they are planted on a hot gravelly ſoil, they frequently die in ſummer when the ſeaſon proves dry. They are all of them now much cultivated in England, to add to the variety of ſhrubs, but they are not very ornamental plants; though indeed the Saſſafras makes a good appearance in ſummer, when it is fully clothed with its large leaves, which being of different ſhapes, makes an agreeable variety, when intermixed with ſhrubs of the ſame growth.

26. The Saſſafras-tree is commonly propagated by the berries, which are brought from America; but theſe berries generally lie in the ground a whole year, and ſometimes two or three years before they grow, when they are ſown in the ſpring; therefore the ſureſt method of obtaining the plants will be, to get the berries put into a tub of earth ſoon after they are ripe, and ſent over in the earth; and as ſoon as they arrive, to ſow the berries on a bed of light ground, putting them two inches in the earth; and if the ſpring ſhould prove dry, the bed muſt be frequently watered, and ſhaded from the great heat of the ſun in the middle of the day; with this management many of the plants will come up the firſt ſeaſon, but as a great many of the berries will lie in the ground till the next ſpring, ſo the bed ſhould not be diſturbed, but wait until the ſeaſon after, to ſee what will come up. The firſt winter after the plants come up, they ſhould be protected from the froſt, eſpecially in the autumn; for the firſt early froſt at that ſeaſon is apt to pinch the ſhoots of theſe plants, which, when young, are tender and full of ſap, ſo will do them more injury than the ſevere froſt of the winter; for when the extreme part of the ſhoots are killed, it greatly affects the whole plant.

When the plants have grown a year in the ſeed-bed, they may be tranſplanted into a nurſery, where they may ſtand one or two years to get ſtrength, and may then be tranſplanted into the places where they are to remain for good.

There have been ſome of theſe plants propagated by layers, but theſe are commonly two, and ſometimes three years before they put out roots; and if they are not duly watered in dry weather, they rarely take root; ſo that it is uncertain whether one in three of theſe layers ſucceed, which renders theſe plants ſcarce in England.

24. Willow-leaved Bay may alſo be propagated by ſeeds, when they can be procured, and by layers, which put out roots pretty freely.

25. The Benjamin-tree alſo, as it is falſely called, may be propagated by ſowing the berries. They generally lie long in the ground, ſo that unleſs they are brought over in earth, they often fail. But this may likewiſe be increaſed by layers, which put out roots freely, when the young ſhoots are made choice of.

[LAURUS. See *Cavella, Kiggelaria, Magnolia, Medeola, Myrica, Rufcus, Viburnum, Ocalaria, Winterania.*]

LAWSONIA. (*From Iſaac Lawſon, M.D. author of a new voyage to Carolina, Lond.* 1709. 4°.)

Lin. gen. n. 482. *Retch. n.* 521. *Schreb. n.* 655. *Juſſ.* 331.

Henna. *Ludw.* 143. Alcanna. *Gærtn. t.* 110.

Claſſ. 8. 1. Octandria Monogynia.

Nat. order of *Salicariæ*, Juſſ.

* Buttcher.

GENERIC CHARACTER.

CAL. *Perianth* four-cleft, small, permanent.
COR. *Petals* four, ovate-lanceolate, flat, spreading.
STAM. *Filaments* eight, filiform, length of the corolla, in twin pairs between the petals. *Anthers* roundish.
PIST. *Germ* roundish. *Style* simple, length of the stamens, permanent. *Stigma* headed.
PER. *Capsule* (or berry) globose with a point, four-celled.
SEEDS many, cornered, pointed.

ESSENTIAL CHARACTER.

Cal. four-cleft. *Pet.* four. *Stam.* in four pairs. *Capf.* four-celled, many-seeded.

SPECIES.

1. Lawsonia inermis. *Smooth Lawsonia.*
Lin. spec. 498. *fyst.* 362. ◦ *Reich.* 2. 163. *suppl.* 219. *fl. zeyl. n.* 135. *mat. med.* 102. *Gron. orient.* 47.
Ligustrum ægyptiacum. *Alp. ægypt.* 47. *ed.* 1. *f.* 18.
—latifolium. *Bauh. pin.* 476.
Alkanna s. Henna arabum. *Walth. hort.* 3. *t.* 4. .
Alcanna arabum. *Bellon. itin.* 35.
Poutaleraje. *Rheed. mal.* 4. 117. *t.* 57.
Branches unarmed, leaves subsessile ovate sharp at both ends.

[2. Lawsonia Acronychia.
Lin. fyst. 362. *suppl.* 219. *Forst. fl. austral. n.* 165.
Acronychia lævis. *Forst. gen.* 27.
Branches unarmed, leaves on long petioles wedge-shaped.]

3. Lawsonia spinosa. *Prickly Lawsonia.*
Lin. spec. 498. *Reich.* 2. 163. *fl. zeyl. n.* 134. *Hasselqu. itin.* 464. *Linn. cochinch.* 229.
Alcanna spinosa. *Gærtn. fruct.* 2. 133.
Rhamnus malabaricus. *Pluk. phyt. t.* 220. *f.* 1.
Cyprus Alcanna. *Rumph. amb.* 4. 42. *t.* 17.
Mail-Anschi. *Rheed. mal.* 1. 73. *t.* 40.
Branches spiny.

[4. Lawsonia falcata.
Linn. cochinch. 229.
Adulterina, Daun Salawar. *Rumph. amb.* 6. 58. *t.* 25. *f.* 1.
Leaves sickle-shaped, slightly crenate.]

DESCRIPTION, *&c.*

1. This rises with a shrubby stalk eight or ten feet high. The branches come out by pairs opposite; they are slender and covered with a whitish yellow bark. Leaves small, opposite, oblong, ending in acute points, pale green. Flowers in loose terminating bunches, gray or dirty white. Petals small, turning back at the top.

Native of India, Egypt, &c. The leaves of this shrub are much used by the Egyptian women, to colour their nails yellow, which they esteem an ornament. [Cultivated in 1739, by Mr. Miller[a].

2. This differs from the preceding in having the leaves on long petioles, somewhat jointed at the insertion; the calyx extremely small; the petals not flat and ovate, but linear, and having bent claws[b]. From this latter circumstance Forster gave it the name of *Acronychia*, from ακρος, *extremus* and ονυξ, *unguis*. But it does not seem to have any character to distinguish it from Lawsonia.

Native of New Caledonia: where it was found the 11th of September, 1774.]

3. This rises with a woody trunk eighteen feet high or more. The wood is hard and close, covered with a light gray bark. Branches alternate. Leaves oblong oval. At the joints where the leaves are placed come out single, strong, sharp thorns. Flowers in loose bunches from the sides of the branches, pale yellow, of a disagreeable scent.

[Loureiro describes it as eight feet high, with few, long, spreading branches, having a few straight spines terminating the shoots. Leaves broad-lanceolate, quite entire, sessile, opposite, subumentose, small. Flowers white, in racemed, terminating corymbs. Calyx bell-shaped, with acute, coloured segments. Petals curled and plaited, inserted into the calyx, than which they are somewhat longer. Stamens quickly falling.

Linnæus and Loureiro call the fruit a capsule, Gærtner names it a dry berry, globular flatted a little at top, crowned by the style, obscurely four-grooved, somewhat coriaceous, honey or ochre-coloured, four-celled. Seeds in each cell five to nine, variously angular, sharply pyramidal, ferruginous, suberose-barked. The pericarp does not divide into regular valves.

Native of the East Indies. Mr. Miller, who cultivated it in 1759, says that he received specimens of it also from the Spanish West Indies.

4. This shrub or small tree is six feet high, and very much branched. Leaves acuminate, smooth, petioled, scattered, strong-scented. Flowers white, in a racemed terminating corymb. Fruit a superior, roundish, small, four-celled berry, containing many seeds. The fruit has frequently three, two or even one cell only.

Native of Cochinchina.]

PROPAGATION AND CULTURE.

These plants are propagated by seeds, sown on a hot-bed early in the spring, that the plants when they come up may have time to get strength before winter. When the plants are fit to remove, plant each in a small pot filled with light sandy earth, and plunged into a hot-bed of tanner's bark, where they must be screened from the sun till they have taken new root. Then treat them as the Coffee tree, only giving them less water, especially in winter. They are too tender to thrive in the open air, they must therefore constantly remain in the stove, having plenty of air in hot weather.

[LAXMANNIA. *(From Erhart Laxmann, a Swede. Member of the Academy at Petersburgh, and Professor there. He travelled in Siberia.)*
Lin. gen. Schreb. n. 1746.
Cyminosma. *Gærtn. t.* 58.
Class. 6. 1. Hexandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-shaped, compressed, four-toothed, rather acute, inferior, very small.
COR. *Petals* four, linear, leathery, long, upright at the base, spreading, with inflected tip, a villose line on the upper part, two more approximated than the rest.
STAM. *Filaments* six, linear below, upright, awl-shaped at the tip, spreading, rather shorter than the corolla. *Anthers* roundish, affixed to the back.
PIST. *Germ* roundish, extremely villose. *Style* shorter than the stamens, thick, cornered. *Stigma* simple.
PER. *Berry* subglobose, tetragonal at the top, four-celled; the *cells* covered by a membrane.
SEEDS solitary, oblong, compressed.

ESSENTIAL CHARACTER.

Cal. one-leafed, four-toothed, inferior. *Cor.* four-petalled. *Berry* four-celled. *Seeds* solitary.

Gærtner describes the fruit under the name of Cyminosma Ankenda, and refers to Ankænda of *Hort. mal.* 23. and *Burm. zeyl.* 27.

Mr. Dryander remarks, that Gærtner's first species, *t.* 58. *f.* 2.—H, cannot be the same with Dr. Koenig's Jambolifera, as the petals are nearly of the same length with the calyx: the other species, which Gærtner describes with petals three times the length of the calyx, may perhaps be the same as Dr. Koenig's plant, and if so, it is figured in *Rheed. mal.* 5. *t.* 15. which figure agrees tolerably well with Dr. Koenig's specimen in regard to flowers and leaves, and as to fruit with Gærtner, *t.* 58. *f.* 1. Mr. Dryander has given the description of the flower from Koenig's manuscripts, which may be compared with Gærtner and with Schreber's character of Laxmannia above. He remarks that the four stamina, which alternate with the petals, have no doubt been taken for petals by Gærtner, who counts eight petals permanent below the fruit[c]. Possibly after all, this plant may be a species of Jambolifera. See *Calyptranthes*.

Forster has given the name of Laxmannia to a Synegenesious plant, which has the air of a Bidens.]

LAYING of Trees and Shrubs. This operation is thus performed:

First, having well dug the ground and made it very light, take some of the most flexible boughs, and lay them into the ground about half a foot deep, pegging them down with forked sticks, if necessary, leaving the

[a] Hort. kew. [b] Linn. suppl. [c] Linn. transf. 2. 313.

end of the layer a foot or a foot and half out of the ground; keep them moiſt during the ſummer ſeaſon, and they will probably have taken root and be fit to remove in autumn; or if not, they muſt remain another ſeaſon.

Secondly: Tie a piece of wire hard round the bark of the bough, at the place you intend to lay in the ground, and twiſt the ends of the wire, ſo that they may not untie, prick the part above the wire through the bark with an awl in ſeveral places, and then lay it in the ground as before directed. This method will often ſucceed when the other fails.

Thirdly: Cut a ſlit upwards at a joint, as is practiſed in laying Carnations, which by gardeners is called tonguing the layers.

Fourthly: Twiſt the part of the branch deſigned to lay in the ground like a withy, if it be pliable, and lay it in the ground as directed above.

Fifthly: Cut a circle almoſt round the bough that is deſigned to be laid half an inch, where it is to lay in the ground.

Though branches may be laid at any time, yet the proper ſeaſon for laying hardy trees that ſhed their leaves is october; for ſuch as are tender, the beginning of march; for evergreens, june or july.

When the boughs cannot be bent down into the ground, lay them in baſkets, boxes or pots, filled with fine mould mixed with a little rotten willow duſt, and elevated by blocks or treſſels. Too much of the head muſt not be left on; and the ſmaller the boughs are, the leſs way they ſhould be left out of the ground.

In trees of a hard wood, the young ſhoots, but in trees of a ſoft wood, the older boughs will take root beſt.

Many trees and plants will not put out roots from the woody branches, yet if the young ſhoots of the ſame year be laid in july, they will often put out roots very freely: but as theſe ſhoots will be ſoft and herbaceous, they muſt not have too much wet, which would cauſe them to rot; cover, therefore, the ſurface of the ground with moſs, which will prevent it from drying too faſt, and a little water will ſuffice.

[To raiſe trees by layers in quantity, a ſufficient number of trees muſt be headed down for ſtools, within a few inches of the ground, in autumn; and the ſummer following they will afford plenty of young ſhoots proper for laying in the autumn. In many trees, however, it will be better to wait two years.

The ground in the mean time ſhould be dug in winter; and conſtantly hoed, as the weeds riſe, in ſummer.

After the layers are taken up, the ſtools muſt have all the wounded parts taken away, and the old branches ſhould be cut off pretty cloſe to the ſtem: in the ſpring they will ſhoot out freſh branches, which may be laid the ſecond year after. Nurſerymen, who raiſe great quantities of trees this way, have two quarters of ſtools, to come in alternately, and furniſh a crop every year*.

LEADWORT. See *Plumbago*.

LEATHERWOOD. See *Dirca*.

LEBBECK. See *Mimoſa*.

LECHEA. (*So named by Kalm, from John Leche, Profeſſor at Aboa in Sweden, author of* Flora Scanica. 1744.)

Lin. gen. n. 109. *Reich. n.* 116. *Schreb. n.* 142. *Juſſ.* 393. *Gaertn. t.* 129.

Claſſ. 3. 3. Triandria Trigynia.

Nat. order of *Caryophylli*.

GENERIC CHARACTER.

CAL. *Perianth* three-leaved; *leaflets* ovate, concave, extremely ſpreading, permanent.

COR. *Petals* three, linear, narrower than the calyx, but almoſt longer, concave.

STAM. *Filaments* three, (ſometimes four or five,) capillary, longer than the corolla, incumbent on the piſtil, equal. *Anthers* roundiſh.

PIST. *Germ* ovate. *Style* none. *Stigmas* three, feathery, divaricated.

PER. *Capſule* ovate, three-ſided, three-celled, (one-celled. *G.*) three-valved; and alſo with three internal *valves* converging towards the exterior ones, conſtituting partitions.

SEEDS ſolitary, ovate, cornered inward.

OBS. *In* L. major *three are four ſtamens, of which the two ſuperior are approximated.* Clayt. R.

ESSENTIAL CHARACTER.

Cal. three-leaved. *Pet.* three, linear. *Caſſ.* three-celled, three-valved, with as many internal ones. *Seeds* ſolitary.

SPECIES.

1. Lechea minor.
   Lin. ſpec. 133. *ſyſt.* 130. *Reich.* 1. 252. *amoen.* 3. 10. *Gaertn. fruct.* 2. 227. *Gron. virg.* 16.
   Capraria foliis integerrimis. *Gron. virg. ed.* 1. 75.
   Scoparia fol. tenuiſſimis, &c. *Raii ſuppl.* 132.
   Leaves linear-lanceolate, flowers paniculed.
2. Lechea major.
   Lin. ſpec. 133. *ſyſt.* 130. *Reich.* 1. 252. *amoen.* 3. 11. *f.* 4.
   Menandra ramis alternis. *Gron. virg. ed.* 2. 20.
   Leaves ovate-lanceolate, flowers lateral, wandering.
3. Lechea chilenſis.
   Lour. cochinch. 60.
   Leaves ovate-lanceolate, ſpathes three-flowered, terminating.

DESCRIPTIONS, *&c.*

1. Root fibrous, perennial, putting up ſeveral upright, ſimple ſtems, paniculed at top, and round. Leaves ſcattered, upright, quite entire, ſharp, above ſmooth and ſhining, beneath ſomewhat pubeſcent, with a reflex margin, on very ſhort petioles. Flowers numerous, on terminating, peduncled racemes.

Towards the root the branches are oppoſite or in threes; frequently alſo the leaves are in fours, ovate, and more hairy[a].

Capſule the ſize of the head of a ſmall pin, ovate-globular, very obſcurely if at all three-cornered, one-celled, half-three-valved; the valves marked within with a longitudinal, raiſed, deeper coloured ſtreak. Receptacle three ſhort linear ſcalelets, ſpringing from the middle of the baſe, and lying on the belly of the ſeeds. Seeds three, oblong, acuminate at both ends, three-ſided, convex on one ſide, angular on the other, obſcurely dotted, brown. It is conſtantly one-celled, and has no inner valves. The embryo is not circular, as in moſt of its congeners, but almoſt ſtraight[b].

Native of North America, Virginia, Canada.

2. Stems purpliſh, round, with ſimple, alternate, remote branches. Leaves alternate, rugged above, tomentoſe beneath, with a reflex margin, ſcarce manifeſtly petioled. Flowers two, three or four from the uppermoſt ſhoots[c]. Clayton aſſigns four ſtamens to the flower; the two upper ones approximating.

Native of North America, Virginia, Canada.

The plant deſcribed by Linneus for Lechea major is ſuppoſed to be Ciſtus canadenſis. But the plant intended by Kalm for Lechea major is very different, as may be ſeen by comparing the ſpecimens in the Bankſian herbarium.

3. Stem annual, manifold, creeping, ſhort. Leaves marked with lines, ſmooth, with ſheathing petioles. Flowers from a large blunt ſpathe. Petals blue, with claws. Styles three, equal to the ſtamens, with ſimple ſtigmas. Capſule ſuperior, three-lobed, three-valved, three-celled, with one ſeed in each cell. This plant ſeems at firſt ſight to be related to Commelina and Tradeſcantia, but it has not either villoſe filaments like the latter, or cruciate nectaries like the former. Native of China, near Canton[d].

LECYTHIS. (*From* Λεκυθος, *a pot. The fruit reſembling a pot with its lid, or a cup and cover.*)

Lin. gen. n. 664. *Reich. n.* 720. *Schreb. n.* 904. *Laeſl.* 189. *Jacqu. amer.* 168. *Juſſ.* 327. *Aubl. t.* 284, 285.

Claſſ. 13. 1. Polyandria Monogynia.

Nat. order of *Myrti*, Juſſ.

[a] Linn. amoen. [b] Gaertner. [c] Loureiro. [d] Linn. amoen.

* Hunter's Evelyn.

GENERIC CHARACTER.

CAL. *Perianth* six-leaved: *leaflets* roundish, concave, permanent.

COR. *Petals* six, oblong, obtuse, flat, very large: of which the two upper ones are very spreading.

Nectary petal-form, one-leafed, tongue-shaped: flat at the base, perforated for the germ, marginated: *a strap* bent upwards from the lower side of the flower: linear, outwardly convex, thick at the tip, ovate, together with the stamens covering the organs.

STAM. *Filaments* extremely plentiful, inserted on every side into the interior disk of the base of the nectary, very short, thicker above. *Authers* oblong, small.

PIST. *Germ* depressed, acuminated, girt with the receptacle of the flower. *Style* very short. *Stigma* rather obtuse, conic.

PER. roundish at the base, woody, girt above by the rudiments of the calyx, truncated, subquadrilocular, circumcised, with orbiculated operculum.

SEEDS several, glossy, with rough margin.

ESSENTIAL CHARACTER.

Cal. six-leaved. *Cor.* six-petalled. *Nect.* ligulate, staminiferous. *Peric.* circumcised, many-seeded.

SPECIES.

1. Lecythis grandiflora.
Aubl. guian. 712. *t.* 283, 284, 285.
Leaves ovate, peduncles of the flowers thick.

2. Lecythis amara.
Aubl. guian. 716. *t.* 286, 285.
Leaves ovate-lanceolate, acuminate, fruit small, with a bitter kernel.

3. Lecythis parviflora.
Aubl. guian. 717. *t.* 287, 285.
Leaves ovate-lanceolate acuminate, fruit small two-celled, lid with the appendix woody, produced inwards.

4. Lecythis Jacapucaya.
Aubl. guian. 718. *t.* 288.
Jacapucaya. *Marcgr. bras.* 128.
Jaçapucaio. *Pis. bras.* 135.
Leaves lanceolate-oblong acuminate, fruit large, with an eatable kernel.

5. Lecythis Idatimon.
Aubl. guian. 721. *t.* 289.
Leaves ovate-lanceolate acuminate, fruit small, four-celled.

6. Lecythis minor.
Aubl. guian. 723. *Jacqu. amer.* 168. *t.* 109. *pist.* 82. *t.* 160.
L. Ollaria. *Lin. spec.* 734. *syst.* 494. *Reich.* 2. 586.
Leaves lanceolate-oblong, petioled.

DESCRIPTIONS, *&c.*

These are trees or shrubs, with alternate leaves; flowers in terminating spikes, and from the axils of the shoots; in the spikes alternate, on pedicels that have a single bractle at the base, and frequently two scales under the calyx. It is peculiar to this genus to have a pitcher-shaped body in the centre of the flower, which Linnæus calls the nectarium, inserted into the calyx below the petals, perforated in the middle for the passage of the style, shaped like a petal, coriaceous, entire at the edge, not staminiferous on the edge as in Pitigara (Gustavia) and Butonica, but covered on the inside with numerous subsessile stamens, and produced on the side into a membranaceous bilamellated strap. Calyx six-lobed at top, equal, the lobes deciduous. Petals six, inserted into the calyx under the divisions, and fastened to the nectary, coriaceous and concave. Germ half inferior, ending in a conical style, and a blunt stigma. Capsule woody, four-celled, but sometimes varying in the number of cells from two to six, differing in form, size and density; the vestiges of the calyx remain on it about half way down, at the top it is cut round, and furnished with a lid, which is produced or continued down into a central angular receptacle, and fastened to the partitions of the capsule. Seeds in each cell solitary or few, inserted into the receptacle, angular, covered by a membranaceous aril*.

1. This tree grows to a very large size (to the height of thirty feet). Leaves strong, thick, waved, seven inches long, and three inches wide, ending in a little point, midrib prominent the whole length underneath. Flowers at the end of the shoots from the axils of the leaves, and also from the branches and shoots themselves. The pedicel enlarges as it approaches the calyx, which is of a reddish colour on the inside. Corolla rose-coloured; two petals longer and wider, and four smaller. Capsule shaped like an urn, hard, woody, thick, about seven inches in height, four inches or more in diameter, and the opening of the cover two inches and a half, rounded next the pedunele, convex at top, and ending in a point; the remains of the calyx form a woody border, and above that is a collar near an inch high, which in the flower was covered by the claws of the petals. The periphery of the opening, which is closed by a lid or cover that descends the whole height of the collar, and often to the very bottom, is convex in its outer face, but the inner is produced into a long, woody, conical body, having several sides, to which are attached large oblong kernels, of an irregular shape, enveloped in a membrane, and very good to eat.

Native of the forests of Guiana; flowering in january, and fruiting in april. Called by the Caribbs *Canari Mokaque*, by the French *Marmite de Singe*, by Mons. Aublet *Quatele à grande fleur*.

2. This is also a very lofty tree. Flowers small, yellow, with two or three scales on the peduncle. Capsule the size of an egg, thin, hard and woody, in the form of a little oval pot; the cover is divided at bottom into four parts, to each of which an oblong, angular, bitter kernel is attached. This is eaten by monkeys. The Creoles call it *Petite Marmite de Singe*. Mons. Aublet names it *le Quatelé amer*.

There is a variety of it with a scale at the base of the peduncles, and the capsule compressed on one side.

3. This is not a very high tree. The boughs and twigs bend towards the ground. Leaves shorter than those of the preceding. Flowers much smaller, of a golden yellow colour, and smelling very sweet. Capsule small, thin, brittle; cover produced internally into a thin but strong wide partition, extending to the bottom of the capsule, and dividing it into two cells, in each of which is an oblong angular kernel, fastened to the upper part of the cell. The kernel being bitter, is eaten only by monkeys. Native of Guiana, on the banks of rivers.

4. This is a very lofty tree, the trunk attaining sixty feet in height and more, and being two feet and upwards in diameter. The bark rough and irregular. The wood white, except towards the middle, where it is red. The boughs extend every way at top, and the shoots are loaded with leaves ten inches long, two inches and a half wide, entire about the edge, smooth, strong, pale green, on a short petiole, which is convex underneath, and channelled above. Flowers at the extremity of the shoots in pendant racemes, on fleshy pedicels, thickening as they approach the flower, and having a deciduous scale at the base. Calyx cut into six unequal sharp, narrow, fleshy reddish segments. The corolla consists of six unequal petals, white, with rose-coloured edges, wide, very thick and fleshy at the claws; four smaller, and two larger. Nectary rose-coloured. Capsule thick, hard, woody, oval, rounded at bottom, convex at top, with a point in the middle, which is the remains of the style; it is about four inches in diameter, and five, six or more inches high. The cover falls off when the fruit is ripe; it is boxed into the hole of the disk that bears the stamens some lines in depth, and is produced into a woody, conical, angular body to the bottom of the capsule, which contains several oblong kernels, irregular in shape, and fastened to the different faces of this body. Immediately under the cover, towards the upper part, this capsule has a prominent border, marked by the six pieces of the calyx; and above this is a collar, which in the flower was covered by the claws of the petals, and which forms the periphery of the aperture when the cover has fallen off.

The

* Juſſieu.

The Portugueze turn boxes and other toys out of theſe capſules. The kernels are eaten; they are ſweet, delicate, and preferable to Almonds. (They are ſold in London under the name of Braſil nuts). Birds and monkeys feed much on them. On this account the Creoles of Cayenne call the fruit of this and the other ſpecies *Canari Makaque* or *Marmite de Singe*[a]. In Braſil they extract an oil from the kernels, which is much eſteemed. The Indians uſe the bark for making cordage, and as oakum for ſtopping the ſeams of boats. The wood being hard and durable, is excellent for mill-work. The capſules are made into drinking cups, pots, &c. Pilo relates, that a ſingle tree will yield fruit ſufficient to feed a moderate army.

Native of America; Braſil, Guiana. Introduced into the iſle of France before 1761, by M. le Comte d'Eſtaing.

5. This reſembles the preceding ſpecies in its leaves, and riſes to the ſame height. The trunk alſo is as large. Flowers axillary, at the ends of the ſhoots, on ſimple peduncles that bear ſeveral alternate flowers, having two ſcales at their baſe. Pedicels red, with ſmall whitiſh glands. Calyx veined with red. Corolla roſe-coloured. Capſule woody, an inch high, and an inch or more in diameter, rounded at the baſe, and convex at the top; about the middle it has a circular border, formed by the remains of the calyx, and above that a collar forming the opening, which is cloſed by a lid, convex, and terminating in a blunt point; within it has four cells, and a brown, oblong, bitter kernel faſtened to each.

Native of the foreſts of Guiana, and called Idatimon by the Caribbs.

There is a variety of this with yellow flowers[b].

6. This is an elegant, branching, upright tree, ſixty feet high. Leaves acuminate, ſerrate, ſmooth, ſubdiſtich, half a foot in length. Racemes terminating, and frequently an axillary flower at the uppermoſt leaves. Pedicels one-flowered, thick, very ſhort. Flowers large, the corolla and nectary white, the ſtamens and corpuſcles of the nectary yellow. Fruit very hard, brown, two inches in diameter. The cover falls off when the fruit is ripe; the dried pulp and ſeeds follow; but the pot or body of the capſule hangs on frequently two years in an inverted ſtate. The ſeparation of the cells is commonly incomplete, and in each there are two or three ſeeds, and ſometimes only one, in all about eight. Monkeys are fond of theſe, whence the inhabitants call the tree *Ollita de mono*. Jacquin relates, that having eaten a whole nut, he was ſeized with a nauſea in half an hour after, accompanied with a giddineſs of the head. The flowers are infeſted with a ſort of black waſp, which attacks thoſe who gather them. Native of woods about Carthagena in New Spain, flowering in June and July. The fruits are ripe in december[c].

Jacquin is of opinion that his L. minor is very different from the Lecythis of Loefling, and probably alſo from the Jacapucaya of Marcgraaf. Aublet ſuppoſes L. minor of Jacquin and L. Ollaria of Linnæus to be the ſame ſpecies, and diſtinct from Jacapucaya of Marcgraaf, n. 4.

LEDON. See *Ciſtus*.]

LEDUM (*a ladendo edore, from its diſagreeable injurious ſcent. Linn.*)

Lin. gen. n. 546. *Reich. n.* 591. *Schreb. n.* 744. *Gærtn. t.* 112. *Juſſ.* 159.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Bicornes.—Rhododendra*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, very ſmall, five-toothed.

COR. one-petalled, flat, five-parted: *diviſions* ovate, concave, rounded.

STAM. *Filaments* ten, filiform, ſpreading, length of the corolla. *Anthers* oblong.

PIST. *Germ* roundiſh. *Style* filiform, length of the ſtamens. *Stigma* obtuſe.

PER. *Capſule* roundiſh, five-celled, gaping five ways at the baſe.

SEEDS numerous, oblong, narrow, ſharp on each ſide, extremely ſlender.

OBS. *In Syſt. Veg. R. p.* 337 *the calyx it called quinquefid; the corolla flat, and five-parted.*

ESSENTIAL CHARACTER.

Cal. five-cleft. *Cor.* flat, five-parted. *Capſ.* five-celled, gaping at the baſe.

SPECIES.

1. Ledum paluſtre. *Marſh Ledum.*
Lin. ſpec. 561. *ſyſt.* 402. *Reich.* 2. 289. *fl. lapp. n.* 160. *fl. ſuec. n.* 352. *mat. med.* 115. *Gærtn. fruct.* 2. 145. *Hort. kew.* 2. 65. *Pallas roſ.* 1. 2. 50. *Gmel. ſib.* 4. 127. *Du Roi harbk.* 1. 361. *Fl. dan. t.* 1031. *Krock. ſilef. n.* 623.
L. ſileſiacum. *Cluſ. pann.* 68. *Park. theat.* 75.
Ciſtus Ledon foliis Roſmarini ferrugineis. *Bauh. pin.* 467. *Raii hiſt.* 1006. *Dulham. arb.* 1. 168. *n.* 13. *t.* 67.
C. L. ſileſiacum. *Ger.* 1106. *emac.* 1288. 11.—item roriſmarini folio. *Ger.* 1106. 12. *emac.* 1289. 12.
Roſmarinum ſylveſtre. *Camer. epit.* 546. *Park. theat.* 75.
β. L. decumbens.
Leaves linear, rolled back at the edge, tomentoſe underneath.
[2. Ledum latifolium. *Broad-leaved Ledum, or Labrador Tree.*
Ait. hort. kew. 2. 65. *Jacqu. ic.* 3. 464. *collect.* 2. 308.
L. groenlandicum. *Fl. dan.* 1. 567. *Gunn. norv.* 1067. *Retz. faun.* 436.
Leaves oblong, rolled back at the edge, tomentoſe underneath, flowers ſuperintendrous.
3. Ledum buxifolium. *Box-leaved Ledum.*
Ait. hort. kew. 2. 65. *Berg. in act. petrop.* 1777. *part.* 1. *p.* 213. *t.* 3. *f.* 2.
L. ſerpillifolium. *L'Herit. ſtirp. nov.* 2. *t.* 10.
Leaves ovate-oblong, flat, ſmooth.

DESCRIPTIONS, *&c.*

1. Root branched, running widely and deeply into the ground. Stems ſhrubby, ſlender, three or four feet long, dividing into ſimple branches, and covered with a brown bark, which is tomentoſe or villoſe whilſt they are young, but afterwards becomes ſmooth. Leaves linear-lanceolate, duſky green above, and ſmooth, underneath covered with a brown pile, quite entire, reſembling thoſe of Roſemary, but wider, petioled, perennial. Flowers on pedunckes an inch or more in length, nodding before and after flowering, whitiſh, in axillary bundles or corymbs[a]. Capſule ſmall, obovate, terminated by a long permanent ſtyle: valves coriaceous; partitions membranaceous, ſpringing from the edges of the valves, doubled, opening at their inner angle by a longitudinal chink. Receptacles five, filiform, curved a little, ſpringing from the upper part of the axis of the fruit, and hanging down freely in the cavity of the cells. Seeds extremely numerous and ſmall, irregularly ſhaped like ſaw-duſt, pointed at each end, of a brownith ſtraw-colour[b].

Native of the North of Europe—β. Dwarf Ledum, of Hudſon's Bay. It flowers here in april and may. Introduced in 1762 by Mr. John Buſh[c].

Mr. Miller ſeems to confound it with Andromeda polifolia.

2. This ſhrub grows three or four feet in height, with a trunk as thick as a man's finger; branches the firſt years woolly and whitiſh, the ſecond tomentoſe and ruſt-coloured, afterwards ſmooth and brown. Leaves ſcattered alternately, on ſhort petioles, quite entire, perennial, blunt, an inch or an inch and half in length; when young pale green, hairy above and woolly white beneath, when older ſmooth, dark green, and ſometimes ruſt-coloured beneath. Common pedunckes terminating, ſcarcely an inch long, upright, covered with imbricate ruſt-coloured ſcales. Pedicels from each ſcale filiform, ſomewhat villoſe, corymbed. Flowers very like thoſe of the preceding, except in having only five ſtamens. In moſt of them, indeed, one fifth part is wanting in all the parts[d].

Native of Greenland, Hudſon's Bay, Labrador, Newfoundland and Nova Scotia. It flowers here in

[a] Aublet. [b] Ibid. [c] Jacquin.

[a] Krocker. [b] Gærtner. [c] Hort. kew. [d] Jacquin.

april and may, and was introduced in 1763 by Mr. Bennet[a].

Bees are very fond of the flowers of these plants. Animals do not browze on them, and they are reputed in some degree poisonous: they are, however, put into beer in order to inebriate. The smoke of them destroys bugs and other insects. The Russians are said to use them in tanning leather. A decoction is given in the itch, &c.[b]

3. This is a small shrub, scarcely a foot in height. Stem upright, roundish, rugged with scars, ash-coloured. Branches at stated intervals, in a sort of whorl, leafy or scarted, each subdivided and upright. Leaves like those of Box, scattered, frequent, on short petioles, blunt, two or three lines in length, somewhat wrinkled above, smooth beneath, dotted, shining on both sides, the edges rolled back. Corymbs of flowers terminating, simple, on one-flowered, pubescent peduncles. Bractes oblong, blunt, subimbricate, spreading. Calyx smooth, five-parted, five-cornered at the base; segments lanceolate, acute, erect. Corolla white; petals five, blunt, longer than the calyx, sessile, spreading. Filaments longer than the corolla, from upright spreading. Anthers purple, ovate, small, flattish on one side, twin and grooved on the other. Germ superior, grooved all round and rugged. Style cylindric, upright. Stigma simple, subemarginate, truncate. Capsule ovate, acute, somewhat wrinkled, three-celled, three-valved; the valves opening longitudinally on their inner side[c].

Native of New Jersey and Carolina in North America. Introduced in 1736 by Peter Collinson, Esq. It flowers in april and may[b].]

PROPAGATION AND CULTURE.

These shrubs growing on mosses or bogs, where the roots spread freely, cannot be preserved in gardens, at least so as to thrive, but in a proper soil and a shady situation. The plants must be procured from the places of their growth, and taken up with good roots; they must be planted in a border of bog earth, and frequently watered.

[LEDUM. See *Cistus*, *Kalmia*, *Rhododendron*.

LE-CHEE or Li-tchi. See *Sapindus*.]

LEEKS. See *Allium Porrum*.

[LEEA. (*So named by David van Royen from James Lee, nurseryman at Hammersmith.*)

Lin. gen. Reich. n. 1158. *Schreb. n.* 1432. & *emend. p.* 796. *mant.* 17. *Juss.* 153. Aquifolia. *Lin. mant.* 2. 146. *Gærtn. t.* 57. & 108. *Cavan. diss.* 7. *t.* 218.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Tribilatæ*.—*Sapotæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-shaped, coriaceous, five-toothed, permanent.

COR. one-petalled. *Tube* length of the calyx. *Border* five-cleft; *divisions* ovate, acute.

Nectary placed on the tube of the corolla, and shorter than it, upright, pitcher-shaped, five-cleft: *lobes* emarginate.

STAM. *Filaments* five, inserted below, within the nectary, between the lobes, incurved. *Anthers* ovate, versatile, before impregnation converging and covering the stigma.

PIST. *Germ* subglobose, superior? *Style* simple, shorter than the nectary. *Stigma* headed.

PER. *Berry* orbiculate, depressed, quinque-torulose, one-celled.

SEEDS five, on one side gibbose, on the other cornered.

ESSENTIAL CHARACTER.

Cor. one-petalled. *Nect.* on the tube of the corolla, upright, five-cleft. *Berry* five-seeded.

SPECIES.

1. Leea sambucina. *Elder-leaved Leea.*
Aquifolia sambucina. *Lin. syst.* 243. *Reich.* 1. 568. *mant.* 211. *Gærtn. fruct.* 2. 127. *Burm. ind.* 73. *t.* 24. *f.* 2. (Staphylæa.)
Stem, peduncles and leaves smooth.

2. Leea æquata. *Shrubby Leea.*
Lin. syst. 855. *Reich.* 4. 149. *mant.* 124.
Leaves smooth, stem and peduncles scurfy.

3. Leea crispa. *Fringe-stalked Leea.*
Lin. syst. 855. *Reich.* 4. 149. *mant.* 124.
Stem angular fringed curled.

DESCRIPTIONS, &c.

1. This is a small tree resembling the Elder. Leaves like those of Sambucus canadensis, alternate, petioled, pinnate: divisions at the base nearer, often ternate, or even pinnate: leaflets oval-oblong, acuminate, serrate. Peduncles opposite to the leaves, usually trichotomous[a]. Berry marked with from three to six swellings, black, aromatic, containing from three to six seeds[b].

Native of the East Indies, Africa and New South Wales.

Gærtner has another species (vol. 1. 275.) which he calls *Aquilicia Otillis*, and suspects to be the same with Leea æquata (*n.* 2.) It differs, according to him, from Leea sambucina in the number of seeds, the pale colour of the berry, and the entire want of any aromatic flavour.

2. Stem round, pubescent. Leaves alternate, pinnate: leaflets in fives, petioled, lanceolate, acuminate, serrate, a span long, two inches wide, smooth, but when young pubescent underneath. Corymbs trichotomous. Native of the East Indies. Introduced before 177[c], by Mr. James Lee[c].

3. Root tuberous. Stem somewhat woody but annual, jointed, three feet high, with curled membranaceous angles. Leaves alternate, pinnate, with the rachis or midrib margined: leaflets petioled, three or five, oval-oblong, marked with lines, smooth, sharply serrate, with transverse nerves interwoven with parallel transverse streaks. Stipules solitary, under the leaves, semilunar, ciliate along the keel. Peduncle corymbed. Flowers snowy-white, very small. The nerves are opposite in both these species[a]. Native of the Cape of Good Hope. Introduced in 1767, by Mr. William Malcolm. It flowers in october[a].

LEERSIA. (*So named by Solander and Swartz. from John Daniel Leers, author of Flora Herborunensis.*)

Swartz. prodr. 21. *Lin. gen. Schreb. p.* 818.
Asprella. *Lin. gen. Schreb. n.* 105.
Homalocenchrus. *Mieg. Hall. Allion.*

Class. 3. 2. Triandria Digynia.

Nat. order of *Gramina* or *Grasses*.

GENERIC CHARACTER.

CAL. none.

COR. *Glume* bivalve: *valves* navicular, concave, compressed, ciliate-prickly on the back, nearly equal: the exterior larger, oblong, mucronated; the interior twice as narrow, linear, acute. (In the emendations, p. 818, the corolla is described thus, viz. *Glume* bivalve, one-flowered, shut.)

Nectary two-leaved: *leaflets* lanceolate, acute.

STAM. *Filaments* three, capillary, shorter than in the corolla. *Anthers* oblong.

PIST. *Germ* ovate, compressed; *Styles* two, capillary, short. *Stigmas* feathered.

PER. none. Corolla includes the seed.

SEED single, obovate, compressed.

OBS. *The number of stamens varies, from one to six.* Swartz.

ESSENTIAL CHARACTER.

Cal. none. *Glume* two-valved, closed.

SPECIES.

1. Leersia monandra.
Swartz. prodr. 21.
Panicle spreading, spikes remote, loose, spikelets directed all one way, roundish, one-stamened, glumes even.

2. Leersia hexandra.
Swartz. prodr. 21.
Panicle spreading, spikelets alternate, six-stamened, glumes almost even.

3. Leersia oryzoides.
Swartz. prodr. 21.
Phalaris oryzoides. *Lin. spec.* 81. *syst.* 104. *Reich.* 1. 151. *Schreb. gram.* 2. *t.* 2. *Jacqu. vind.* 206.

[a] Hort. kew. [b] Kracker. [c] Berg. in act. petrop. [d] Hort. kew.

[a] Linn. mant. [b] Gærtner. [c] Hort. kew. [a] Linn. mant. [b] Hort. kew.

Homalocenchrus. *Hall. helv. n.* 1411. *Mieg. in act. helv.* 4. 307. *Pollich pal. n.* 56.

Oryza glumis carina hifpidia. *Gron. virg.* 153. 11.

Gramen paluſtre paniculâ ſpeciosa. *Bauh. pin.* 3. *prodr.* 7.

Gr. miliaceum pal. ſerotinum, &c. *Monti prodr.* 51. *Segu. veron.* 1. 351.

Panicle ſpreading, ſpikelets three-flowered, keel of the glumes ciliate.

1, 2. Natives of Jamaica.

3. Native of Virginia, in marſhes. Introduced into Italy along with Rice. Switzerland; the Palatinate, Perſia.

It is a tall Graſs, two feet high and more, with rough leaves, and an upright, ſtiff, branching panicle. The pedicels are flexuoſe; and the flowers white, with green lines.

LEGNOTIS. (*From* λεγνωτὸς, *fimbriatus, fringed; the petals being fringed.*)

Swartz. prodr. 84. *Lin. gen. Schreb. n.* 900.

Caſſipourea. *Aubl. guian.* 211. *Juſſ.* 432*.

Claſſ. 13. 1. Polyandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, half four or five-cleft, permanent: *diviſions* ovate, acute, upright.

COR. *Petals* four or five, longer than the calyx. *Claws* ſlender, almoſt the length of the calyx, inſerted into the receptacle. *Borders* ovate, fringed with a great many villoſe diviſions.

STAM. *Filaments* ſixteen, twenty, or more, as far as fifty, filiform, equal, length of the calyx, inſerted into the receptacle. *Anthers* oblong, upright.

PIST. *Germ* roundiſh. *Style* cylindric, length of the ſtamens. *Stigma* headed.

PER. *Capſule* large, three-cornered, three-celled, three-valved, elaſtic.

SEED ſolitary, on one ſide convex, on the other cornered.

OBS. *The number of parts of the fruit is ſometimes increaſed by a fourth.*

ESSENTIAL CHARACTER.

Cal. five-cleft. *Pet.* five, jagged, inſerted into the receptacle. *Capſ.* three-celled.

SPECIES.

1. Legnotis elliptica.

Swartz. prodr. 84.

Leaves elliptic, flowers pedicelled.

2. Legnotis Caſſipourea.

Swartz. prodr. 84.

Caſſipourea guianenſis. *Aubl. guian.* 529. *t.* 211.

Leaves ovate, flowers ſeſſile.

DESCRIPTIONS, *&c.*

1. Native of Jamaica*.

2. This is a middle-ſized tree; the trunk five feet or more in height, with a gray bark. The wood is white. It has many branches at top, putting forth oppoſite ſhoots, on which are oppoſite almoſt ſeſſile leaves, joined at the baſe by a very ſhort acute ſtipule. The leaves are entire, ſhining, pointed. Flowers axillary, ſeveral together, enveloped in two ſmall braſtes. Calyx hard, cortaceous. Petals white. Native of Guiana, where it flowers in January*.

LEMNA. (Λεμνὰ *or* Λεμνὸς *of Theophraſtus.* Lens *of Pliny.*)

Lin. gen. n. 1038. [*Reich. n.* 1130. *Schreb. n.* 1400. Lenticula. *Mich.* 11. *Dill. gen.* 6. *Juſſ.* 19. Hydrophace. *Buxb. cent.* 11. *t.* 37. *f.* 2.

Claſſ. 21. 2. Monoecia Diandria.

Nat. order of *Miſcellaneæ.—Naiades*, Juſſ.

GENERIC CHARACTER.

** Male Flower.*

CAL. one-leafed, roundiſh, gaping on the ſide, obliquely dilated outwards, obtuſe, ſpreading, depreſſed, large, entire.

COR. none.

STAM. *Filaments* two, awl-ſhaped, incurved, length of the calyx. *Anthers* twin, globoſe.

PIST. *Germ* ovate. *Style* ſhort, permanent. *Stigma* obſcure.

PER. abortient.

** Female Flower* in the ſame plant with the male.

CAL. as in the male.

COR. none.

PIST. *Germ* ſubovate; *Style* ſhort, permanent. *Stigma* ſimple.

PER. *Capſule* globoſe with a point, one-celled.

SEEDS ſome, oblong, ſharp on each ſide, nearly the length of the capſule, ſtriated on one ſide.

OBS. *Ehrhart and Hedwig have ſeen hermaphrodite flowers.* S.

ESSENTIAL CHARACTER.

MALE. *Cal.* one-leafed. *Cor.* none.

FEM. *Cal.* one-leafed. *Cor.* none. *Style* one. *Capſ.* one-celled.

SPECIES.

1. Lemna triſulca. *Ivy-leaved Duck's-meat.*

Lin. ſpec. 1376. *Reich. n.* 92. *fl. lapp. n.* 470. *fl. ſuec. n.* 828. *hort. cliff.* 417. *Hudſ. angl.* 399. *Wither. arr. ed.* 3. 43. *Lightf. ſcot.* 537. *Relh. cant. n.* 671. *Pollich pal. n.* 867. *Villars dauph.* 2. 21. *Scop. carn. n.* 1143. (Lenticula) *Mich. gen.* 16. *t.* 11. *f.* 5. (Lenticularia) *Hall. helv. n.* 1901. (Hydrophace).

Lenticula aquatica triſulca. *Bauh. pin.* 362. *Bauh. hiſt.* 3. 786. 1. *Raii hiſt.* 118. *ſyn.* 129.

Hederula aquatica. *Lob. ic.* 2. 36. 1. *Ger.* 681. 2. *emac.* 830. 2.

Ranunculus hederaceus aquaticus. *Park. theat.* 1216. 9.

Leaves petioled, lanceolate.

2. Lemna minor. *Leaſt Duck's-meat* or *Duckweed.*

Lin. ſpec. 1376. *Reich. n.* 92. *hort. cliff.* 417. *fl. ſuec. n.* 827. *Hudſ. angl.* 399. *Wither. arr. ed.* 3. 44. *Lightf. ſcot.* 537. *Relh. cant. n.* 672. *Gron. virg.* 143. *Pollich pal. n.* 868. *Villars dauph.* 2. 22. *Scop. carn. n.* 1142. (Lenticula) *Mich. gen.* 16. *t.* 11. *f.* 3. (Lenticularia) *Hall. helv. n.* 1900. (Hydrophace).

Lens paluſtris. *Camer. epit.* 852. *Dod. pempt.* 587. 1. *Lob. ic.* 2. 249. 1. *Raii hiſt.* 117. *ſyn.* 129. *t.* 4. *f.* 1. *Valliſn.* 2. 81. *t.* 14. *15. & Eph. nat. cur.* 1. *app. t.* 2. *Blackw. t.* 380. *Ger.* 680. *emac.* 829. 1. *Bauh. hiſt.* 3. 773. 2.—ſ. aquatica vulgaris. *Park. theat.* 1262. 1.

Lenticula paluſtris vulgaris. *Bauh. pin.* 362. *Vaill. par. t.* 20. *f.* 3.

Leaves ſeſſile, flattiſh on both ſides, roots ſolitary.

3. Lemna gibba. *Gibbous Duck's-meat* or *Duckweed.*

Lin. ſpec. 1377. *ſyſt.* 841. *Reich.* 4. 93. *hort. cliff.* 417. *fl. ſuec. n.* 826. *Wither. arr. ed.* 3. 44. *Relh. cant. n.* 673. *Villars dauph.* 2. 22. *Mich. gen.* 15. *t.* 11. *f.* 2. (Lenticularia) *Hall. helv. n.* 1898. Hydrophace).

L. minor *β. Hudſ. angl.* 399.

Leaves ſeſſile, hemiſpherical underneath, roots ſolitary.

4. Lemna polyrhiza. *Greater Duck's-meat* or *Duckweed.*

Lin. ſpec. 1377. *ſyſt.* 841. *Reich.* 4. 93. *hort. cliff.* 417. *fl. ſuec. n.* 825. *Hudſ. angl.* 399. *Wither. arr. ed.* 3. 44. *Lightf. ſcot.* 538. *Relh. cant. n.* 347. *Pollich pal. n.* 869. *Villars dauph.* 2. 22. *Wigg. primit.* 66. *Mich. gen.* 16. *t.* 11. *f.* 1. (Lenticularia) *Hall. helv. n.* 1899. (Hydrophace).

Lenticula paluſtris major. *Raii ſyn.* 129. *t.* 4. *f.* 2. *Vaill. par. t.* 20. *f.* 2.

Leaves ſeſſile, roots cluſtered.

5. Lemna obcordata.

Vahl. ſymb. 2. 95.

Leaves ſeſſile obcordate, roots cluſtered.

6. Lemna arhiza.

Lin. ſyſt. 841. *Reich.* 4. 93. *mant.* 294.

Lenticularia omnium minima arhiza. *Mich. gen.* 16. *t.* 11. *f.* 4.

Leaves in pairs, rootleſs.

DESCRIPTIONS, *&c.*

1. Stem dichotomous, filiform, divaricated, having a lanceolate leaf at the angle of the branches, but proliferous ones terminating the branches: that is, ſimilar leaves growing out of their ſides at right angles: where theſe three leaves are conjoined there ſhoots out a pen-

dent

* Swartz. * Aublet.

dent radicle, with a conical papilla at its base[a]. Linnæus obſerves, that the ſtems are flatted and proliferous, croſſing each other, and thus reſembling in the mode of growth Cactus Opuntia or Indian Fig. Dr. Witherling adds, that the leaf-ſtalks iſſue from the edge of another leaf, from a fiſſure parallel to the ſides of the leaf.

Native of moſt parts of Europe in ditches and ſtagnant waters; flowering from june to ſeptember.

2. The leaves of the common Duckweed are very ſmall, of a roundiſh ovate form, collected into heaps, by twos or threes, and forming extenſive green plats on ſtagnant waters, and covering the ditches; each leaf drops a ſingle radicle[b].

It is common in moſt parts of Europe, and flowers from june to ſeptember. Linnæus ſays in the Dog-days.

This plant affords nouriſhment not only to Ducks, but to the freſh-water Fly-type, Phalæna Lemnata, &c. Its quick and extenſive propagation makes it troubleſome in ſome caſes, but at the ſame time it muſt be conſidered that it arreſts a vaſt quantity of inflammable air from putrid water, and converts it into vital elaſtic air, adapted to reſpiration[c].

3. This differs from the preceding in having the leaves obovate, or narroweſt where they are joined together, the under ſurface ſlightly convex, and generally tinged with purple, the upper ſurface very convex, white, of a reticulated ſpongy appearance, and filled with water, ſomething reſembling the internal ſtructure of Scirpus lacuſtris, but not ſo regular[d]. Roots fibrous, from the centre of the under ſide of the leaf. Leaves three, four or five together, one growing out of the edge of the other[e]. Capſule two-celled, containing two ſeeds, ſomewhat compreſſed, and a little depreſſed in the middle, more globular when further advanced[f].

According to Gerard and Hudſon this is a mere variety of the preceding.

Native of ſeveral parts of Europe, in ditches and ponds; flowering in july and auguſt. Obſerved by Dr. Stokes in Worceſterſhire, ſept. 8, 1776.

4. The leaves of this are much larger than in the common ſort; they are thick, ſucculent, inflated, oblong-cordate, blunt, grooved above, bright green, ſmooth, purple underneath, five lines long, and four wide. This ſpecies is alſo diſtinguiſhed by its dropping packets of thick black fibres from the lower ſurface of the leaves[g]. The flowers are the ſame as in the preceding, but are placed differently; they are to be found between the duplicature of each lamina, on that ſide where one leaf inſinuates itſelf into the other. The fruit is larger and more flatted[h].

Linnæus ſays, it floats on the ſurface of the water on the appearance of the ſwallows, and ſinks again at their diſappearance. All the ſpecies ſink in the winter ſeaſon, and riſe again in the ſpring.

Native of moſt parts of Europe, in ditches, ponds, &c. flowering in july and auguſt.

5. Leaves very ſmall, the upper ſurface in front bright green, but the hinder part, with the lower ſurface, and roots purple; they have a longitudinal groove running along the middle which is forked in front, each branch running to the end of each lobe, and dividing them as it were in two. Native of the Eaſt-Indies[i].

6. This has commonly two leaves cohering together, one ſmaller than the other, and no roots[k]. This latter circumſtance makes it very probable that it is only Lemna polyrhiza in a naſcent ſtate, as Wiggers has obſerved.

Native of Italy and France.

Theſe plants are all annual, and float on ſtagnant water. Their flowers were obſerved in Italy long ſince by Micheli and Vaillant, but not being produced ſo freely in more northern climates, they were long thought by ſome to be cryptogamous plants. The fructification, however, has been well aſcertained by Ehrhart and Gmelin in L. gibba, by Linnæus in L. minor, and by Gmelin in L. polyrhiza[l]. Dr. Withering alſo, having examined ſome of them in a flowering ſtate, bears witneſs to the accuracy of Micheli's figures.

LEMNA. See *Marſilea*.

LEMNISCIA. (*Lemniſcus, faſciola a fillet or riband or bandage; from the form of the petals.*)

Lin. gen. 870. *Schreb.* 1202.

Vantanea. *Aubl.* 1. 230. *Juſſ.* 434.

Claſſ. 15. 1. Polyandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leaved, five-toothed, acute, ſhort.

COR. *Petals* five, linear, long, acute, recurved, growing to the nectary.

Nectary cup-ſhaped, fleſhy, very ſhort, girding the germ.

STAM. *Filaments* numerous, (ſeventy to eighty), capillary, longer than the corolla, inſerted into the nectary. *Anthers* roundiſh, ſmall.

PIST. *Germ* roundiſh, immerſed into the nectary. *Style* filiform, length of the ſtamens. *Stigma* obtuſe.

PER. ....., five-celled.

SEEDS ſolitary.

ESSENTIAL CHARACTER.

Cal. five-toothed. *Cor.* five-petalled, recurved.

Nect. cup-ſhaped, girding the germ.

Per. five-celled. *Seeds* ſolitary.

SPECIES.

1. Lemniſcia guianenſis.

Vantanea guianenſis. *Aubl. guian.* 572. *t.* 229.

DESCRIPTION, *&c.*

The ſtunk of this tree riſes from fifteen to twenty feet in height, and is a foot in diameter. The bark is brown and ſmooth. The wood white and compact. Abundance of twiſted branches ſpread in every direction. Leaves alternate, ſmooth, firm, entire, ovate, acuminate, on a ſhort petiole; the largeſt leaves are five inches in length, and two in breadth. Flowers at the ends of the ſhoots, very numerous, in large corymbs, on a woody peduncle. Corolla of a fine coral red.

Native of Guiana, where it is called *Jouantan*, whence Aublet has conſtructed its name. It flowers in auguſt[m].

LESION TREE. See *Citrus*.

LENS. See *Ervum*, [*Glycine*, *Hedyſarum*, *Lemna*, *Marſilea*, *Medicago*, *Mimoſa*, *Riccia*.

LENTAGO. See *Viburnum*.

LENTIBULARIA. See *Utricularia*.

LENTICULA. See *Adoxoides*, *Callitriche*, *Fucus*, *Lemna*, *Marſilea*, *Piſtia*.

LENTICULARIA. See *Lemna*.

LENTIL. See *Ervum*.]

LENTICUS. See *Piſtacia* [& *Schinus*.

LEONTIS. See *Phlomis*.

LEONTICE. (*in abbreviation, by Linnæus, of the* Leontopetalon *of Tournefort. Adopted from Pliny. Aviſon from Ant.*)

Lin. gen. n. 493. *Reich. n.* 456. *Schreb. n.* 571. *Juſſ.* 287. Leontopetalon. *Tournef.* 484.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Corydalis*. *Berberides*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* ſix-leaved, caducous; *leaflets* linear, expanding: the alternate ones ſmaller.

COR. *Petals* ſix, ovate, twice the length of the calyx.

Nectary of ſix ſcales, which are ſemi-ovate, ſpreading, foot-ſtalked, inſerted into the claws of the petals, equal.

STAM. *Filaments* ſix, filiform, very ſhort. *Anthers* upright, two-celled, two-valved, gaping at the baſe.

PIST. *Germ* oblong-ovate. *Style* ſhort, ſomewhat columnar, obliquely inſerted into the germ. *Stigma* ſimple.

PER. *Berry* hollow, globoſe-acuminate, inflated, one-celled, ſubſucculent.

SEEDS few, globoſe.

ESSENTIAL CHARACTER.

Cal. ſix-leaved, deciduous. *Cor.* ſix-petalled. *Nect.* ſix-leaved, placed on the claws of the corolla, ſpreading.

SPECIES.

[a] Lightfoot. [b] Woodward. [c] Pollich. [d] Villers, Pollich. [e] Withering. [f] Wiggers. [g] Vaill. [h] Linn. mant. [i] Villars. [k] Wiggers. [l] Wiggers. [m] Aublet.

SPECIES.

1. Leontice Chrysogonum. *Oak-leaved Leontice.*
Lin. spec. 447. *Reich.* 2. 66. *hort. cliff.* 122. *Gron. orient.* 113.

Leontopetalo affinis, foliis quernis. *Bauh. pin.* 324. *Mor. hist.* 2. 285. *f.* 3. *t.* 15. *f.* 7.

Chrysogonum Dioscoridis. *Raium. itin.* 119. *t.* 21. *Rai hist.* 1326. *Bauh. hist.* 3. 876. *f.* 2. *Park. theat.* 683.

Leaves pinnate, common petiole simple.

2. Leontice Leontopetalum. *Decompound-leaved Leontice, or Lion's-leaf.*
Lin. spec. 448. *Reich.* 2. 67. *hort. cliff.* 122. *Gron. orient.* 114.

Leontopetalon. *Bauh. pin.* 324. *Cam. epit.* 565. *Ger.* 182. *emac.* 236. *Park. theat.* 682. *Mor. hist.* 2. 285. *f* 3. *t.* 15. *f.* 6. *Raii hist.* 1326. *Bauh. hist.* 3. 489.

Leaves decompound, common petiole trifid.

[3. Leontice Thalictroides. *Columbine-leaved Leontice.*
Lin. spec. 448. *Reich.* 2. 67. *Gron. virg.* 151, 52. *Cold. uveeb.* 75.

Stem-leaf triternate, floral leaf biternate.]

DESCRIPTIONS, *&c.*

1, 2. These two plants have large tuberous roots about the size of those of Cyclamen, covered with a dark brown bark. Leaves on slender petioles from the roots, about six inches long. Those of the first are single, having many leaflets ranged along the midrib; but the petioles of the second are branched into three smaller; upon each of these are ranged several leaflets, in the same form as pinnate leaves. The flowers are on naked pedunclcs: in the first sort they are yellow; in the second they are smaller and paler.

Native of the islands of the Archipelago, and of the corn fields about Aleppo, flowering at Christmas. Here they do not flower till the beginning of april, and they do not produce seeds.

2. [This was cultivated before 1597, by Lord Zouch, as appears from Gerarde's herbal*. Rauwolf observed it about Aleppo; it has been found in several parts of the Levant: and Matthiolus says, that he remarked it in the fields of Tuscany, &c. and that it is common in Apulia.

3. Stem simple. Leaves triply-ternate, on long common petioles; the middle proper petioles shorter, the side ones scarcely any. Leaflets smooth, ovate, the middle ones often three-lobed. Raceme simple, terminating, loose, upright*.

Native of North America. Introduced in 1784, by Mr. William Young*.]

PROPAGATION AND CULTURE.

When seeds are procured from abroad (which should be sent in sand), sow them as soon as they arrive, and cover them with glasses in the winter. In spring, when the plants begin to appear, admit free air to them whenever the weather is mild. If they are not too close, let them remain unremoved till the second year; but where they are very close, take up a part of the roots in october, and plant them close to a warm wall; and in november lay some old tanner's bark over the surface, three or four inches thick. Take this off again in march, before the roots begin to push, leaving a thin covering to prevent the spring winds from drying the ground. These roots should have a dry loose soil, and must be seldom removed. October is the best time for removing them.

The plants are very difficult to preserve in England, for the roots will not thrive in pots; and in the full ground, the frost frequently destroys them in winter, especially when the roots are young. Before the severe winter of 1740, Mr. Miller had some of the roots in a south-west border, that flowered several years, without any shelter.

[These and most tender bulbs do best in a south border in front of a greenhouse or stove, covered with glasses.

LEONTICE LEONTOPETALOIDES. See *Taccа*.]

* Hort. kew. * Gron. virg. * Hort. kew.

LEONTODON. (*Asclla. alvus, Lion's-teeth. So called from the toothing of the leaves.*)
Lin. gen. n. 912. [*Reich.* n. 991. *Schreb.* n. 1237. *Gærtn. t.* 158. Taraxacum, *Hall. Juss.* 169. Dens Leonis. *Tournef. t.* 266. *Vaill. act. gall.* 1721. 50. 12.

Chaff. 19. 1. Syngenesia Polygamia Æqualis.

Nat. order of *Compositæ Semiflosculosi. Cichoraceæ*, Juss.

GENERIC CHARACTER.

CAL. *Common* imbricate, oblong, *scales interior* linear, parallel, equal; *exterior* fewer, often reflex at the base.

COR. *Compound* imbricate, uniform: *corollets* hermaphrodite numerous, equal.
Proper one-petalled, strap-shaped, linear, truncated, five-toothed.

STAM. *Filaments* five, capillary, very short. *Anthers* cylindric, tubular.

PIST. *Germ* subovate. *Style* filiform, length of the corollet. *Stigmas* two, revolute.

PER. none. *Calyx* oblong, straight, at length reflex.

SEEDS solitary, oblong, rough. *Down* capillary, footstalked.

REC. naked, dotted.

ESSENTIAL CHARACTER.

Cal. imbricate, with loofish scales. *Down* capillary. *Recept.* naked, dotted.

SPECIES.

1. Leontodon Taraxacum. *Common Dandelion.*
Lin. spec. 1122. *frh.* 715. *Reich.* 3. 631. *fl. lapp.* n. 280. *fl. suec.* n. 693. *mat. med.* 128. *Woodv. med. bot.* 7. *hort. cliff.* 386. *Gærtn. fruct.* 2. 363. *Hudf. angl.* 339. *Curt. lond.* Lighsf. *scot.* 432. *Reib. cant.* n. 566. *Gron. virg.* 176. 114. *Thunb. jap.* 304. *Gmel. fib.* 2. 14. *Pollich pal.* n. 734. *Fl. dan. t.* 574. *Krock. siles.* n. 1266. *Allion. pedem.* n. 758. *Mill. illustr. Blackw. t.* 1. & 501. *Bulliard. f.* 217. *Zorn. ic. t.* 69.
Taraxacum. *Hall. helv.* n. 56.—officinale. *Wigg. primit.* 56. *Villars dauph.* 3. 72. *Wither. arr. ed.* 3. 679.
Dens leonis. *Ger.* 228. 1. *emac.* 290. 1. *Raii hist.* 244. *syn.* 170. *Pet. brit. t.* 11. *f.* 7. *Matth.* 506. *Dod. pempt.* 636. 1. *Lob. obs.* 117. 2. *ic.* 1. 232. 2. *Mor. hist. f.* 7. & 8. *f.* 1.—vulgaris. *Cumer. epit.* 286. *Park. theat.* 780. 1.—latiore folio. *Bauh. pin.* 126.
Hedypnois. *Fuchs. hist.* 680. *Bauh. hist.* 2. 1035.—Taraxacum. *Scop. carn.* n. 957.
β. Dens leonis angustiore folio. *Bauh. pin.* 126. *Park. theat.* 780. *Raii syn.* 171. *Pet. brit. t.* 11. *f.* 8. *Segu. ver.* 2. 188.
γ. L. Taraxacon. *Wither. arr. ed.* 3. 679.
L. palustre. *Lyons. forest.* 48. *Hudf. angl.* 3. *Reib. cant.* 9. *Krock. siles.* 3. 284. *Wigg. prim.* 56.
Hedypnois paludosa. *Scop. carn.* n. 958.
Lower calycine scales reflex, leaves runcinate toothletted even.

2. Leontodon bulbosum. *Bulbous Dandelion.*
Lin. spec. 1122. *Reich.* 3. 632. *Gouan hort.* 410. *flor.* 348. *Savi. monsp.* 297 n. 223. (Taraxacum).
Chondrilla bulbosa. *Bauh. pin.* 130.
C. altera Dioscoridis. *Col. ephr.* 1. *t.* 4.
C. pusilla marina lutea bulbosa. *Lob. ic.* 330.
Leaves oblong-ovate somewhat toothed smooth, calyx even, scape rough-haired at top.

3. Leontodon aureum. *Golden Dandelion.*
Lin. spec. 1122. *frh.* 715. *Reich.* 3. 632. *Jacqu. vind.* 268. *austr.* 3. 53. *t.* 297.
Andryala aurea. *Scop. aun.* 2. 59.
Hieracium aureum. *Scop. carn.* n. 965.
Taraxacum. *Hall. helv.* n. 57. *t.* 1.
Dens leonis fol. extremo subrotundis, flor. aureis. *Raii exter.* 399. *Segu. ver.* 3. 265.
Hieracium alterum minus 4. *Col. ephr.* 2. 32. *t.* 29.
Leaves runcinate, stem one-leafed, calyx hispid.

4. Leontodon muricatum.
L'Herit. stirp. nov. 173. *t.* 82.
Leaves runcinate rugged, calyxes muricated imbricate loose somewhat reclining.

DESCRIPTIONS, *&c.*

Most of the species that were ranged by Linnæus under this genus have been separated by subsequent authors,

authors, on account of a difference in the calyx, down, and receptacle. Leontodon hiſpidum, hirtum, dantubiale, haſtile, tuberoſum, autumnale, pyrenaicum, alpinum, may be found under *Apargia*; and Leontodon tomentoſum is the ſame with *Tuſſilago albicans*. Perhaps none of the ſpecies but the firſt ought to have remained under this genus. The following are the generic characters of the three genera into which this has been ſeparated.

APARGIA. *Cal.* ſubimbricate with linear parallel unequal ſcales.
Down plumoſe, ſubſeſſile.
Rec. naked, ſubvilloſe.

HEDYPNOIS. *Cal.* calycled with ſhort ſcales.
Down none to the outer ſeeds: the inner have five, almoſt erect, awned chaffs.
Rec. naked.

LEONTODON. *Cal.* imbricate with looſiſh ſcales.
Down capillary.
Rec. naked, dotted.

Haller has L. Taraxacum and aureum only under the name of *Taraxacum*, and aſſociates moſt of the other Leontodons with *Picris*. Scopoli ſeparates theſe from Picris, and L. Taraxacum and paludoſa, under Fuchſius's name of *Hedypnois*. Wiggers diſtinguiſhes L. Taraxacum, by its ſtipitate capillary down, under the name of *Taraxacum*, and refers thoſe which have a ſeſſile plumoſe down to *Leontodon*. He would aſſociate L. paludoſum with *Chondrilla*, were it not for the difference of habit. But there is no end to reform in the genera of the claſs Syngeneſia.

1. Root perennial, tapering, milky, pale brown. Leaves varying from pinnatifid or deeply runcinate in a very dry ſituation to nearly entire in a very moiſt one, generally ſmooth, but ſometimes a little rough. A ſingle, large yellow flower is ſupported on a hollow milky ſcape, covered with a kind of down towards the top. Calyx ſmooth, glaucous; the ſcales perfectly ſmooth, the loweſt turning back. The flowers ſometimes contain more than one hundred and forty florets. Seeds a little crooked, flattiſh, ſomewhat four-cornered, ſtriated or grooved, prickly at top, of a pale olive colour. Down on a long ſtipe or foot-ſtalk, ſimple not feathered, ſhorter than the ſtipe. Receptacle naked, full of little holes[a].

Common all over Europe in meadows, on walls, dry banks, &c. A common weed in gardens.[b] It flowers from april to ſeptember. The flowers expand about five or ſix in the morning, and cloſe early in the afternoon[c]. As the flower advances the calyx is gradually preſſed out at top; when the flowering is paſt, it contracts again into a conical form; and finally, when the ſeeds are mature, the calyx is again puſhed back, and the aggregate of down aſſumes a ſpherical form, till the whole is looſened and diſſipated by the wind.

Early in the ſpring, whilſt the leaves are hardly unfolded, they are no bad ingredient in ſalads. The French eat the roots, and the leaves blanched, with bread and butter. Its diuretic effects have given it a vulgar name, not only in England, but other European nations. The expreſſed juice has been given to the quantity of four ounces, three or four times a day; and Boerhaave had a great opinion of the utility of this and other milky plants in viſceral obſtructions. When a ſwarm of locuſts had deſtroyed the harveſt in the iſland of Minorca, many of the inhabitants ſubſiſted upon this plant. Goats eat it, ſwine devour it greedily, ſheep and kine are not fond of it, horſes refuſe it; ſmall birds are fond of the ſeeds. Phalæna faſcelina and Thrips Phyſapus feed upon it[d].

Our common name of Dandelion is corrupted from the French *Dent de Lion*, which was given it from the toothing of the leaves.

Leontodon paluſtre ſeems ſcarcely to be any thing more than a variety. In this ſpecies which varies ſo much in the leaves, the having few notches or being even almoſt entire, can hardly be admitted as a ſpecific difference: and though the lower calycine leaflets are erect, yet finally they become reflex. The plant is ſmaller, neater, and more levigated and glaucous than the common Dandelion; but all this may be owing to ſituation.

2. Root tuberous. Leaves attenuate-petioled, ſubſpatulate[e].

Native of Montpellier and Italy.

3. Root perennial, end-bitter, the thickneſs of a reed or of the human finger, with long white fibres, white on the inſide, but uſually blackiſh without. Leaves all radical, ſometimes very few, ſometimes more, oblong, narrowing gradually towards the baſe, bright green, ſmooth on both ſides, unequally ſinuate-toothed, blunt ſometimes with a ſmall point. Scape one or two, round, ſtriated, upright, ſmooth below, but hiſpid towards the top with black hairs, and having a ſmall ſcale or two at different heights; it is from three to ten inches high, and has one flower at the top; ſometimes, but very ſeldom, there is a branch with a ſecond flower. The flower is elegant, each floret being yellow on the inſide but ſaffron-coloured on the outſide, both colours turning deeper. Calycine ſcales lanceolate-oblong, acute, erect, dark green, hiſpid with black hairs, with ſhort ſcales at the baſe. Seeds linear, with a ſeſſile, ſnowy-white, ſimple down[f].

Linnæus remarks, that it has the leaves of L. Taraxacum, but ſmaller and blunter. The ſcape naked and ſtriated, with a linear leaflet in the middle. The calyx brown, upright, rough-haired at the baſe, with the keels of the leaflets ciliate. The corolla tawny, red underneath. The receptacle villoſe.

This plant, having a ſimple down, cannot be an *Apargia*; and having the down ſeſſile, the ſcales of the calyx erect, and the receptacle villoſe, it is not a *Leontodon*.

Native of Switzerland, Auſtria, and Italy. Introduced in 1769, by Monſ. Richard[g].

4. The whole plant is rugged and milky. Root perennial, fuſiform, almoſt ſimple. Stems diffuſed, a foot and half high, branched, round, flexuoſe, ſomewhat ſtriated, muricated, milky, red. Branches alternate, reſembling the ſtem. Root-leaves proſtrate, petioled, longer: ſtem-leaves half-embracing, alternate, ſpreading: both having a red rib, villoſe-muricate, very rugged, from ſix to nine inches long, and two inches broad. Peduncles one, two or three, one-flowered, almoſt upright, the length of half the plant, round, muricated, bracted. Flowers yellow, two inches in diameter. Seeds narrow-oblong, ſharp at both ends, ſtriated, rufous. Down ſtiped, feathered, ſpreading. Receptacle naked, flat, dotted.

The flowers are not radical as in Leontodon, it has leaves like it, but the whole plant is muricated. It has the calyx of Scorzonera tingitana and picroides, but the down is ſtiped. It differs from Crepis in having an imbricate calyx[h]. It has the ſtiped down of Leontodon; but it is feathered or plumoſe, as in Apargia.

Native of the coaſt of the Mediterranean near Tunis and Algiers, where it was firſt obſerved by René Louiche Deſfontaines[i].

LEONTODON. See *Apargia*, *Crepis*, *Hedypnois*, *Hieracium*, *Tragopogon*, *Tuſſilago*.

LEONTODONTOIDES. See *Hyoſeris*.

LEONTOPETALO AFFINIS. See *Leontice*.

LEONTOPETALOIDES. See *Tacca*.

LEONTOPETALON and LEONTOPETALUM. See *Leontice*.

LEONTOPODIUM. See *Filago* and *Plantago*.]

LEONTURUS. (*From* λεων *and* ουρα; *Lion's tail.*)
Lin. gen. n. 722. *Reich. n.* 780. *Schreb. n.* 977. *Juſſ.* 114. Cardiaca. *Tournef.* 87.
Claſs. 14. 1. Didynamia Gymnoſpermia.
Nat. order of *Verticillatæ*. *Labiatæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, cylindric-cornered, pentagonal, five-toothed, permanent.

COR. one-petalled, ringent. *Tube* narrow. *Border* gaping. *Mouth* long. *Upper lip* longeſt, ſemicylindric, concave, gibboſe, rounded-obtuſe at the tip, entire, villoſe. *Lower lip* reflex, three-parted; *diviſions* lanceolate, about equal.

[a] Curtis, Woodw. [b] Withering. [c] Linn. Withering. [d] Gouan. [e] Jacquin. [f] Horn. kew. [g] L'Heritier. [h] Ibid.

STAM. *Filaments* four, covered beneath the upper lip, of which two are shorter. *Anthers* oblong, compreſſed, biſid in the middle, incumbent, ſprinkled with very ſmall, elevated, globoſe, gloſſy, ſolid *points*.

PIST. *Germs* four. *Style* filiform, of the length and ſituation of the ſtamens. *Stigma* biſid, acute.

PER. none. *Calyx* unchanged containing the ſeeds, which are ſhorter than it.

SEEDS four, oblong, convex on one ſide, cornered on the other.

OBS. *The lips of the corolla differ in the different ſpecies.*

ESSENTIAL CHARACTER.

Anthers having ſhining dots ſprinkled over them.

SPECIES.

[1. Leonurus Cardiaca. *Common Motherwort.*
Lin. ſpec. 817. *fyſt.* 538. *Reich.* 3. 67. *hort. cliff.* 313. *fl. ſuec. n.* 532. *mat. med.* 150. *Hudſ. angl.* 261. *Wither. arr. ed.* 3. 534. *Lightf. ſcot.* 316. *Relh. cant. n.* 443. *Engl. bot.* 286. *Scop. carn. n.* 703. *Pollich pal. n.* 571. *Gouan illuſtr.* 36. *Gmel. ſib.* 3. 238. *Neck. gallob.* 258. *Fl. dan. t.* 727. *Allion. pedem. n.* 118. *Villars dauph.* 2. 391. *Kreck. ſilef. n.* 949. *Bulliard fr.* 273. *Zorn. ic.* 114. *Thunb. jap.* 247.

Cardiaca. *Fuchſ. biſt.* 395. *Blackw. t.* 171. *Hall. helv. n.* 274. *Dodſt. bot.* 651. *Bauh. biſt.* 3. 320. *Park. theat.* 42. 7. *Raii biſt.* 571. *fyn.* 239. *Rivin. mon. t.* 20. *f.* 1. *Dod. pempt.* 94. *Lob. obſ.* 278. 1. *ic.* 1. 516. 1. *Lonic.* 110. 3.

Marrubium Cardiaca dictum. *Bauh. pin.* 230. *Mor. hiſt. ſ.* 11. *t.* 9. *f.* 18. *Gor.* 569. *emac.* 705.

Stem-leaves lanceolate trifid.

2. Leonurus criſpus. *Curled Motherwort.*
Lin. ſyſt. 538. *Murr. in comm. gott.* 1777. *p.* 44. *t.* 4.

Cardiaca criſpa. *Raii hiſt.* 572. *Mill. dict. ed.* 7.

All the leaves acutely ſerrate, very much wrinkled, unequally reflex at the edge, ſtem-leaves five-lobed.

3. Leonurus Marrubiaſtrum. *Small-flowered Motherwort.*
Lin. ſpec. 817. *fyſt.* 538. *Reich.* 3. 68. *mant.* 412. *Jacqu. auſtr.* 5. 3. *t.* 405. *Scop. carn. n.* 704. *Kreck. ſilef. n.* 950. *Allion. pedem. n.* 119. *Laur. cochinch.* 360.

Marrubiaſtrum foliis Cardiacæ. *Becc. muſ.* 2. 120. *t.* 98.

Sideritis fol. ovatis lanc. inciſo-ſerratis. *Lin. cliff.* 213. *Sauv. monſp.* 279.

Leaves ovate and lanceolate ſerrate, calyxes ſcarce ſpiny.

4. Leonurus tataricus. *Tartarian Motherwort.*
Lin. ſpec. 818. *fyſt.* 538. *Reich.* 3. 68. *hort. upſ.* 171. *Gmel. it.* 1. 111. *ſib.* 3. 238. *n.* 63.

Sideritis fol. tripartito-multifidis. *Lin. hort. cliff.* 313. *upſ.* 169.

Cardiaca fol. ternius & profundius inciſis, glabra ſ. villoſa. *Amm. ruth.* 62. 63. *Mill. fig.* 53. *t.* 80. *Dict. ed.* 7. *n.* 3.

Leaves three-parted jagged, calyxes villoſe.

5. Leonurus ſibiricus. *Siberian Motherwort.*
Lin. ſpec. 818. *fyſt.* 539. *Reich.* 3. 68. *hort. upſ.* 170. *Gmel. ſib.* 3. 239.

Ballote inodora, foliis Coronopi. *Amm. ruth. n.* 60. *t.* 8.

Leaves three-parted multifid linear blunniſh.

DESCRIPTIONS, &c.

1. The root ſeems to be perennial, though moſt authors mark it as biennial. Stem upright, hard, from two to three feet in height, grooved, pubeſcent at the angles and joints, branched, frequently purple. Leaves lanceolate and acutely three-lobed, with ſome notches beſides; uppermoſt undivided; loweſt very much and obtuſely lobed and broad, ſomewhat like thoſe of the Gooſeberry. Whorls of flowers numerous. Corolla whitiſh on the outſide, elegantly ſtained with paler and darker purple within. Calyx ſtreaked with five green lines, and every outer one ſubtended by a ſetaceous bractæ. Filaments hairy. Anthers brown, before they burſt ſprinkled with white globular points, looking like enamel. Linnæus chiefly diſtinguiſhes the genus from Phlomis by this minute circumſtance.

The herb is bitter and tonic, with no very pleaſant though pungent ſmell. It was formerly uſed in the cardialgia, whence its old name, but it is now become wholly obſolete, except perhaps among cow-leeches and farriers. Bees are fond of the flowers.

Native of many parts of Europe on banks or under hedges, in a gravelly or calcareous ſoil. Near Combe wood, Surrey[a]. Oxfordſhire, Cambridgeſhire, Norfolk and Suffolk; Monmouthſhire.

Motherwort in German is called *Herzgeſpann* or *Herzkraut*. In Daniſh, *Hiertespan*. In Swediſh, *Benaſſla*. In French, *Agrimoine, Cardiaque, la Cordiale*. In Italian, Spaniſh and Portugueze, *Agripalma, Cardiaca*.

2. This is a biennial plant. Stems ſeveral, from two to three feet in height, upright, deeply hollowed on each of the four ſides, ſmooth except at the joints, where they are hairy. Branches ſcarcely any at bottom, but deceaſſately oppoſite at top, ſlender, the length of a foot and more. Internodes a hand and half, a hand, or leſs in length. Leaves very much wrinkled, tomentoſe, ſoft, pale green, reflex, unequally ſerrate with ſharp ſerratures, but entire at the baſe of the leaf and the origin of the lobes, acuminate, oppoſite. Lower ſtem-leaves very large, roundiſh, five-lobed or ſometimes ſeven-lobed; lobes ſub-ſerrate, ovate-oblong, approximating, bent back variouſly, the middle one trifid, the next biſid, the reſt multifid; the upper leaves and thoſe on the branches wedge-ſhaped, three-lobed, the lobes ſeldom divided, acuminate, the uppermoſt undivided but ſerrate. Petioles three times the length of the leaves, channelled, horizontal or declining. Whorls very numerous, terminating, diſtant, compoſed of many axillary flowers heaped together in four diviſions. Involucres briſtle-ſhaped: briſtles almoſt preſſed cloſe, to each diviſion five, ſhorter than the calyx, green, and below them a leaf on each ſide. Flowers ſeſſile, white. It is very nearly allied to the preceding; but that is of a darker green and more hirſute, the ſtems are not only hairy at the angles but over the whole ſurface, the ſides are flatter, the branches more ſpreading, and of a duſky purple colour. Leaves narrower, the margin of the whole leaf and of the lobes ſtraighter, perfectly flat and not reflex at the edge; the uppermoſt trifid, not at all ſerrate, and the reſt leſs ſerrate, with the ſerratures ruder and more equal; the lobes alſo of the ſub-axillary leaves ſo narrow as not to cover each other, and blunter. Whorls more numerous, and nearer, with larger and diſtant bractes. Flowers ſmaller. Calyx duſky-red. Corolla pale red, ſeldom white, with the upper lip narrower, leſs tomentoſe. The upper end of the ſeeds obtruncated, ſmooth or ſubtomentoſe, not hirſute[b].

Native of Switzerland and the South of France. Ray had it from London before the year 1686. Mr. Miller aſſerted, before 1759, that having frequently raiſed it from ſeed, it was a diſtinct ſpecies from the common one.—In the Kew catalogue (3. p. 494.) it is ſaid to be a native of Siberia, and to have been introduced in 1784, by William Pitcairn, M. D.

3. This is an annual or biennial plant, with ſomething of the ſame ſmell with Lamium. From a branched, fibrous, whitiſh root, a ſtem riſes three feet in height, (and even almoſt twice as high in gardens) upright, leafy, branched. Leaves petioled, acuminate, veined: the lower leaves in the cultivated plant rounded-ovate and wide. The ſtem, branches, calyx, corolla, and back of the leaves are ſoft with villoſe hairs, ſcarcely viſible without a glaſs. There are about twenty flowers in a whorl, they are ſmall, and are ſupported by a many-leaved involucre of ſetaceous ſpiny bractes. The toothlets of the calyx end in a ſtiff ſphinle. Corolla fleſh-coloured: throat long, very much curved inwards above the tube: upper lip rounded: lateral ſegments of the lower lip half-ovate; the middle one twice as wide and roundiſh. Anthers ſubovate, dirty green, twin, cylindric, without any of thoſe ſhining dots which Linnæus gives for the eſſential character[c].

Linnæus adds, that the calyx is five-cleft and awned,

[a] Engl. bot. Relh. Lightf. Wither. [b] Murray.
[c] Jacquin.

that there are awns also under the whorls; that the corolla is scarcely longer than the calyx, like that of *Nepeta*, with the helmet or upper lip entire, and the middle segment of the beard or lower lip not crenate.

Loureiro says that the flowers are saffron-coloured, and that he remarked the little shining, raised, subglobular dots scattered over the anthers, which he found to be the vesicular conglobate pollen, separately or in small particles jointly shining on the germ, the filaments, and the inside of the tube of the corolla, on which it fell.

Native of Austria, and in Hungary more abundant[a]. In Bohemia, the Ukrain, Germany, and even Java[a]. In Piedmont[b]. On the eastern coast of Africa in Zanguebar[c]. Cultivated in Chelsea garden in 1713. It flowers from june to august[a].

4. This is a biennial plant. It differs from the common sort in having the leaves divided to the petiole, and the segments of the leaves under the whorls commonly serrate and gashed[d]. Corolla flesh-colour: upper lip erect, vaulted, covering the filaments: lower lip trifid, the lateral segments approximating to the upper lip, the middle one obcordate[e].

Native of Russia. Gmelin says it grows all over Siberia. Mr. Miller received the seeds from Dr. Amman of Peterburgh, and cultivated this plant in 1756. He says, there are two distinct varieties, one with smooth stalks and leaves, and the other very hairy[f]. Linnæus also remarks that the plant from the East Indies is more smooth.

5. This also is a biennial plant. Stems several, from eighteen inches to a yard in height, tinged with purple: branches seldom more than two or three pairs. Flowers in close whorls, the lower three or four inches from each other, the upper much closer; corolla red, the outside paler and hairy; filaments red. Structure of the flower as in the common Ballote. Under each whorl two soft leaves, divided like those of Coronopus, into three principal segments, the lower wider and cut into more parts, the upper narrower and seldom subdivided, sometimes having violet-coloured spots on them[g].

Gmelin affirms that it is a mere variety of the preceding, with much larger flowers, and the upper lip almost equal to the lower.

Native of Siberia and China.

Mr. Miller cultivated it in 1759[a]. Probably intending in the eighth edition of his Dictionary to remove these plants from Cardiaca, under which name the first, fourth and fifth stand in the seventh edition, to Leonurus, he has there omitted them wholly. He says, that the seeds of L. sibiricus were sent him from Venice by the Chevalier Rathgeb, who received them from Istria. The two species, under the name of Leonurus in the eighth edition of the Dictionary, belong to the genus *Phlomis*.

PROPAGATION AND CULTURE.

2. These plants, when once planted in a garden, will soon multiply, especially if the seeds be permitted to scatter. The roots will continue many years.

3, 4, 5. These rise easily from seeds, sown in the spring upon a bed of common earth, and require no other care, but to keep them clean from weeds, and thin them where they are too close. In autumn they may be transplanted where they are designed to flower and seed, and require no farther culture.

LEONURUS. See *Galeopsis* and *Phlomis*.

LEOPARD'S-BANE. See *Doronicum*.]

LEPIDIUM, (*of Pliny, Ἀνάβασις of Theophrastus; from* λεπὶς, *a scale.*)

Lin. gen. n. 801. *Reich. n.* 865. *Schreb. n.* 1077. *Gærtn. t.* 141. *Juss.* 241. *Tournef. t.* 103.

Nasturtium. *Tournef. t.* 102.

Class. 15. 1. Tetradynamia Siliculosa.

Nat. order of *Siliquosæ* or *Cruciformes*. *Cruciferæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved: *leaflets* ovate, concave, deciduous.

COR. four-petalled, cross-shaped. *Petals* obovate, twice the length of the calyx: with narrow *claws*.

STAM. *Filaments* six, awl-shaped, length of the calyx, the *two opposite* ones shorter. *Anthers* simple.

PIST. *Germ* heart-shaped. *Style* simple, length of the stamens. *Stigma* obtuse.

PER. *Silicle* heart-shaped, emarginate, compressed, sharp on the margin, two-celled: *valves* navicular, keeled, opposite the lanceolate *dissepiment*.

SEEDS some, ovate-acuminate, narrower at the base, nodding.

OBS. *In* Nasturtium. Tourn. *the pericarp is sharp on the margin, and commonly more emarginate at the tip.*

In Lepidium. Tourn. *the pericarp is obtuse on the margin, and not emarginate at the tip.*

Iberis *has a difformous flower, which is unusual in this class: the* ruderale *is apetalous, and the* alpinum *is tetrandrous.*

ESSENTIAL CHARACTER.

Silicle emarginate, cordate, many-seeded: *valves* keeled, contrary.

SPECIES.

1. Lepidium perfoliatum. *Variant-leaved Pepperwort.*
Lin. spec. 897. *syst.* 586. *Reich.* 3. 216. *hort. diff.* 331. 3 *suppl.* 183. *Gron. orient.* 196. *Pallas it.* 2. 329. *Jacqu. austr.* 4. 24. *t.* 346. *Trew. ror.* 2. 4. *t.* 13. *Mor. hist.* 2. 294. *f.* 3. *t.* 25. *f.* 6. (Thlaspi).

Thlaspi alexandrinum. *Bauh. pin.* 108. *prodr.* 60. *Tourn. inst.* 2. 933. *Raii hist.* 834. *Park. theat.* 849. *n.* 3.

T. verum Dioscoridis 1. *Zan. hist. ed.* 2. 191. *t.* 73. *Raii hist.* 830.

Nasturtium orientale, &c. *Zan. hist.* 2. 172. *t.* 129. *Tournef. inst.* 214.

Stem-leaves pinnate-multifid, branch-leaves cordate embracing entire.

2. Lepidium vesicarium. *Bladdery Pepperwort.*
Lin. spec. 898. *Reich.* 3. 216.

L. orientale, Nasturtii folio, caule vesicario. *Tournef. cor.* 15. *Bauh. cent.* 1. 17. *t.* 26.

Joints of the stem inflated.]

3. Lepidium nudicaule. *Naked Pepperwort.*
Lin. spec. 898. *syst.* 586. *Reich.* 3. 216. *amæn.* 4. 273. *Loefl. it.* 155. *Gouan illustr.* 40. *Sauv. monsp.* 228. 284. *Villars dauph.* 3. 285. *Crantz. cruc.* 83.

Nasturtium minimum vernum, &c. *Magn. monsp.* 127. *fig.*

Scape naked quite simple, flowers four-stamened, leaves pinnatifid.

[4. Lepidium procumbens. *Prostrate Pepperwort.*
Lin. syst. 586. *Reich.* 3. 217. *Sauv. monsp.* 228. *Allion. pedem. n.* 926. *Crantz. cruc. fasc.* 3. *n.* 4.

Nasturtium pumilum supinum vernum. *Magn. monsp.* 185. *t.* 184. *Rob. ic.* 244. *Ger. prov.* 346. *n.* 2.

Leaves pinnate-pinnatifid the outmost larger, scape naked, stems prostrate racemiferous.

5. Lepidium alpinum. *Alpine Pepperwort.*
Lin. spec. 898. *syst.* 586. *Reich.* 3. 217. *amæn.* 4. 321. *Jacqu. vind.* 258. *austr.* 2. 23. *t.* 137. *Fl. dan. t.* 569. *Hall. helv. n.* 516. *Allion. pedem. n.* 927. *Villars dauph.* 3. 284. *Krock. sil. f.* 1017.

L. Halleri. *Crantz. austr.* 5. *t.* 1. *f.* 3.

Draba Nasturtiolum? *Scop. carn. n.* 791.

Nasturtium. *Ger. prov.* 347. *n.* 4.—alpinum. *Crantz. cruc.* 80. *n.* 4. *t.* 1. *f.* 3.—tenuissime divisum. *Bauh. pin.* 105. *Bauh. hist.* 2. 918. *Raii hist.* 826.

Cardamine alpina. *Ger.* 202. *f.* 6. *emac.* 260. *f.* 6.—minima. *Clus. hist.* 2. 128. *Park. theat.* 827. *n.* 4.

Thlaspi montanum minimum. *Dalech. hist.* 1180.

Leaves pinnate quite entire, scape subradicate, silicles lanceolate mucronate.]

6. Lepidium petræum. *Rock Pepperwort.*
Lin. spec. 899 *syst.* 586. *Reich.* 3. 217. *fl. suec. n.* 573. *Hudf. angl.* 280. *Wither. arr. ed.* 3. 567. *Engl. bot.* 111. *Jacqu. austr.* 2. 19. *t.* 131. *Hall. helv. n.* 515. (Nasturtium). *Villars dauph.* 3. 284.

[a] Jacquin. [b] Hort. kew. [c] Linn. [d] Gmelin. [e] Amman. [f] Allion. [g] Linn. [h] Hort. kew. [i] Loureiro. [k] Mill. ⅌.

3. 284. *Krock. filef. n.* 1018. *Allion. pedem. n.* 928. *Rob. ic.* 244. *Lour. cochinch.* 395.

L. Linnæi. *Crantz. auſtr.* 7. *t.* 2. *f.* 4. 5.

Naſturtium petræum. *Crantz. crucif.* 80. *n.* 5. *t.* 2. *f.* 4. 5.—annuum. *Pluk. phyt. t.* 206. *f.* 4.

N. pumilum vernum. *Bauh. pin.* 105.

Naſturtiolum montanum annuum tenuiſſime diviſum. *D. Bebart. Raii ſyn.* 304.

Cardamine puſilla ſaxatilis montana diſcoides. *Col. ecphr.* 1. 274. *t.* 273.

Leaves pinnate quite entire, petals emarginate ſmaller than the calyx.

[7. Lepidium cardamines.

Lin. ſpec. 899. *ſyſt.* 586. *Reich.* 3. 218. *Loeſ. it.* 154. *amoen.* 4. 278. *Act. Stockh.* 1755. *p.* 273. *t.* 8. 9. *Arduin. ſpec.* 1. 19. *t.* 18.

Root-leaves pinnate, ſtem-leaves lyrate.

8. Lepidium ſpinoſum. *Prickly Pepperwort.*

Lin. ſyſt. 586. *Reich.* 3. 218. *mant.* 253. *Arduin. ſpec.* 2. 34. *t.* 16.

Leaves pinnate, leaflets lunate, the outer elongated, branches mucronate.]

9. Lepidium ſativum. *Garden or Common Creſs.*

Lin. ſpec. 899. *Reich.* 3. 218. *vir. cliff.* 63. *hort. upſ.* 183. *cliff.* 331. 4. *mat. med.* 159. *fl. ſuec. n.* 571. *Ludvo. elt. t.* 166. *Zorn. ic. t.* 16. *Villars dauph.* 3. 285. *Krock. filef. n.* 1019. *Gærtn. fruct.* 2. 281.

Naſturtium ſativum. *Crantz. auſtr.* 21.

N. hortenſe. *Dod. pempt.* 711. *Dalech. hiſt.* 655. *Ger.* 194. *emac.* 250. *Park. theat.* 824. *Raii hiſt.* 825. *Blackw. t.* 23.—vulgatum. *Bauh. pin.* 103. *Mor. hiſt.* 2. 200. *ſ.* 3. *t.* 19. *f.* 1.

N. vulgare. *Bauh. hiſt.* 2. 912.

β. N. hortenſe criſpum. *Bauh. pin.* 104. *prodr.* 44. *t.* 43.

Flowers tetradynamous, leaves oblong multifid.

10. Lepidium lyratum.

Lin. ſpec. 899. *Reich.* 3. 219.

L. orientale naſturtii criſpi folio. *Tournef. cor.* 15. *itin.* 2. 339.

Leaves lyrate curled.

11. Lepidium latifolium. *Broad-leaved Pepperwort, or Dittander.*

Lin. ſpec. 899. *ſyſt.* 586. *Reich.* 3. 219. *hort. cliff.* 330. *fl. ſuec. n.* 533. *Hudſ. angl.* 279. *Wither. arr. ed.* 3. 567. *Lightf. ſcot.* 339. *Engl. bot.* 132. *Crantz. auſtr.* 11. *Pallas it.* 1. 238. *Fl. dan. t.* 557. *Allion. pedem. n.* 929. *Villars dauph.* 3. 285. *Blackw. t.* 448. *Kniph. cent.* 3. 53. *Sabb. hort. rom.* 4. *t.* 15. *Bauh. pin.* 97. *Raii hiſt.* 828. *ſyn.* 304. *Petiv. brit. t.* 48. *f.* 10. *Mor. hiſt. ſ.* 3. *t.* 21. *f.* 1.

L. Plinii. *Dod. pempt.* 716. 1.

L. Ægineræ. *Tabern.* 456. *Camer. epit.* 378. *Lob. obſ.* 172. 4. *ic.* 1. 318. 2.

L. Pauli. *Bauh. hiſt.* 2. 490. 1. 2.

L. *Fuchſ. hiſt. t.* 484.

Raphanus ſylveſtris officinarum. *Ger.* 187. *emac.* 141.

Piperitis ſ. L. vulgare. *Park. theat.* 855. 1.

Naſturtium. *Hall. helv. n.* 505.

Leaves ovate-lanceolate entire ſerrate.

[12. Lepidium oleraceum. *Notch-leaved Pepperwort.*

Forſk. æſcul. 69. *ſer. auſtral.* 46. *n.* 248. *Ait. hort. kew.* 2. 374. *Nov. act. upſ.* 3. 193.

L. bidentatum. *Nov. act. nat. cur.* 6. 324. *t.* 5. a.

Leaves elliptic-oblong acute ſerrate, flowers four-ſtamened.]

13. Lepidium ſubulatum. *Awl-leaved Pepperwort.*

Lin. ſpec. 899. *Reich.* 3. 219. *D'Aſſo arrag. n.* 586. *t.* 6. *f.* 3.

L. capillaceo fol. fruticoſum hiſpanicum. *Tournef. inſt.* 216.

Naſturtium. *Hall. helv. n.* 506.

Leaves awl-ſhaped undivided ſcattered, ſtem ſuffruticoſe.

[14. Lepidium graminifolium. *Graſs-leaved Pepperwort.*

Lin. ſpec. 900. *ſyſt.* 586. *Reich.* 3. 219.

Thlaſpi luſitanicum umbellatum, gramineo folio, flore albo. *Tournef. inſt.* 213.

Leaves linear, the upper ones quite entire, ſtem panicled woodlike, flowers ſix-ſtamened.

15. Lepidium ſuffruticoſum.

Lin. ſyſt. 586. *Reich.* 3. 220. *mant.* 91.

Leaves lanceolate-linear ſlender quite entire, ſtem ſuffruticoſe.

16. Lepidium didymum. *Procumbent Pepperwort.*

Lin. ſyſt. 586. *Reich.* 3. 220. *mant.* 92. *Wither. arr. ed.* 3. 567. *Engl. bot.* 248.

L. anglicum. *Hudſ. angl.* 280.

Flowers two-ſtamened, leaves pinnatifid, fruits twin.]

17. Lepidium ruderale. *Narrow-leaved Pepperwort.*

Lin. ſpec. 900. *ſyſt.* 587. *Reich.* 3. 220. *fl. ſuec. n.* 572. *hort. cliff.* 335. *Hudſ. angl.* 279. *Wither. arr. ed.* 3. 568. *Lightf. ſcot.* 340. *Relh. cant. n.* 471. *Pallas it.* 1. 213. *Pollich pal. n.* 606. *Neck. gallob.* 275. *Fl. dan. t.* 184. *Villars dauph.* 3. 286. *Krock. filef. n.* 1020. *t.* 29, 30. *Crantz. crucif.* 85.

Iberis ruderalis. *Crantz. auſtr.* 21.

Naſturtium. *Hall. helv. n.* 508.—ruderale. *Scop. carn. n.* 801.

N. ſylveſtre oſyridis folio. *Bauh. pin.* 105. *Park. theat.* 829. *Mor. hiſt.* 2. 301. *ſ.* 3. *t.* 19. *f.* 7. *Raii ſyn.* 303. *Petiv. brit. t.* 50. *f.* 1.

N. ſylveſtre. *Bauh. hiſt.* 2. 914. *Raii hiſt.* 825.

Thlaſpi angulliſolium. *Fuchſ. hiſt.* 307.

T. minus. *Ger. emac.* 262. 4.

T. minimum. *Dod. pempt.* 713. 1. *Trog.* 83. 2.

Flowers two-ſtamened apetalous, root-leaves tooth-pinnate, branch-leaves linear quite entire.

18. Lepidium virginicum. *Virginian Pepperwort.*

Lin. ſpec. 900. *Reich.* 3. 221. *Kniph. cent.* 10. *n.* 55. *Gron. virg.* 76. 97. *Brown. jam.* 272.

Iberis humilior annua virginiana ramoſior. *Mor. hiſt.* 2. 311. *ſ.* 3. *t.* 21. *f.* 2. *Sloan. jam.* 1. 195. *t.* 123. *f.* 3. *Raii hiſt.* 827.

Flowers ſubtriandrous? tetrapetalous, ſtem-leaves lanceolate-linear ſerrate pinnatifid, lower ones pinnate.

[19. Lepidium divaricatum. *Divaricated Pepperwort.*

Ait. hort. kew. 2. 375.

Leaves pinnatifid, ſtem very much branched, ſilicles ovate ſubemarginate.]

20. Lepidium Iberis. *Buſhy Pepperwort.*

Lin. ſpec. 900. *ſyſt.* 587. *Reich.* 3. 221. *mant.* 425. *hort. cliff.* 331. *Gmel. ſib.* 3. 254. *D'Aſſo arrag.* 587. *Allion. pedem. n.* 930.

Iberis. *Dod. pempt.* 714.—2. *Tabern.* 457.—latiore folio. *Bauh. pin.* 97.

Flowers two-ſtamened four-petalled, lower leaves lanceolate ſerrate, upper leaves linear quite entire.

21. Lepidium bonarienſe.

Lin. ſpec. 901. *Reich.* 3. 222. *Murr. prodr.* 165. *Pallas it.* 2. 729.

Thlaſpi bonarienſe multiſciſſum, flore inviſibili. *Dill. elth.* 381. *t.* 286. *f.* 370.

Flowers two-ſtamened? four-petalled, petals minute, all the leaves pinnate-multifid.

22. Lepidium chalepenſe.

Lin. ſyſt. 587. *Reich.* 3. 222. *amoen.* 4. 321. *cent.* 169.

Draba chalepenſis repens humilior, &c. *Mor. hiſt.* 2. 314.

Leaves ſagittate ſeſſile toothed.

[23. Lepidium Piſcidium.

Forſk. æſcul. 70. *ſer. auſtral. n.* 249.

Leaves elliptic-oblong acute quite entire, flowers tetradynamous.

DESCRIPTIONS, &c.

1. Root annual. Stem about a foot high, round, upright, ſmooth, tinged with purple, dividing into many ſlender branches. Root-leaves and lower ſtem-leaves, and ſometimes the loweſt on the branches bipinnatifid; with narrow, acuminate, flat ſegments: the next to theſe leſs divided have an entire embracing baſe: the upper ones are all quite entire, heart-ſhaped, embracing, ſome ſharp, others blunt: all glaucous, ſomewhat thick; ſome very ſmooth, others having hairs at the edge and on the upper ſurface, viſible only with a glaſs. Flowers in corymbs, or long looſe ſpikes from the ends of the branches; they are ſmall and compreſſed: calycine leaflets blunt, upright, yelloviſh green, two oblong, the other two twice as broad and ovate: petals ſpatulate, narrow, yellow, flat, blunt, a little

little longer than the calyx. Silicles orbiculate, compreſſed, ſcarcely emarginate, and the terminating ſtyle ſo ſhort as to be ſcarcely obſervable; they are ſmooth, and there is a ſingle ſeed of a bay colour in each cell [a].

Native of Auſtria and the Levant. Cultivated in 1640, according to Parkinſon. It flowers in july [b].

2. Leaves like thoſe of Iberis vulgaris. Flowers white. Silicles ſmall, acuminate, containing a ſingle ſeed in each cell. It is an annual plant, native of Iberia and Media, in dry places. It flowers there in july and auguſt [c].]

3. This is a ſmall annual plant, [with many linear root-leaves, pinnatifid or toothed at the top, tender, ſmooth,] ſpreading on the ground. Among theſe riſes a naked ſtalk, two or three inches high, terminated by five or ſix ſmall white flowers, [with equal petals. Silicles flatted, emarginate,] incloſing four or five roundiſh ſeeds.

[Gouan mentions a variety with all the leaves cordate-ovate on long petioles; and ſays that he has often remarked ſix ſtamens.

Native of Spain and the South of France. Cultivated by Mr. Miller in 1768. It is diſtinct from *Iberis radicaulis*.

4. This alſo is an annual plant. Some of the leaves are ovate and entire, others three-lobed, five-lobed, lyrate. Scapes radical, and ſome peduncules from the ſtem, longer than the leaf. Calycine leaflets concave. Petals wedge-ſhaped, white, not longer than the calyx. Stamens ſix. Style ſcarcely any. Silicle like that of *Draba verna* [d].

Allione remarks, that the ſtems are not really naked, but leafy, and that the miſtake has ariſen from the leaves falling off very eaſily.

Gouan affirms, that the ſpecimens of L. petræum, which he received from Haller and Jacquin, differed in nothing from this.

Native of the South of France and the county of Nice.

5. Root perennial, ſlender. The whole plant is ſmooth, and has the ſame taſte with Creſs. Stems very ſhort, clothed with alternate leaves, putting out round, upright ſcapes, from one to two inches long, with flowers in a corymbed raceme. Leaves thick, the firſt ſimple, ovate-roundiſh, and wider; the next trifid, with the end one larger; the reſt pinnate, with two or three pairs of leaflets, and an odd one frequently a little larger; leaflets quite entire, lanceolate. Calycine leaflets ſomewhat oblong, ſpreading very much. Petals milk white, quite entire, wide. Stamens always ſix, tetradynamous. Germ ovate-oblong. Style ſhort, crowned with a blunt thickiſh ſtigma. Silicle ovate or lanceolate, compreſſed, with the ſtyle at the end. Seeds few [e].

Native of the Alps of Germany, Switzerland, and Italy. Introduced in 1775 by Doctors Pitcairn and Fothergill. It flowers from april to june [f]; in the Alps from may to auguſt.

6. Root biennial (annual, *Lin. Jacqu.*) taper and fibrous. Stem much and alternately branched (from near the root, ſpreading. Leaves dark green, elegantly pinnate, or rather very deeply pinnatifid, with an odd lobe; the ſegments oval or ſpatulate, more or leſs pointed, entire, ſmooth, (from ſix to twelve pairs.) Flowers in a cloſe corymb, gradually lengthening out into a ſpike, very minute, erect. Calyx and corolla ſpreading: calycine leaflets ovate, concave. Petals ſomewhat obovate, but narrow, about the length of the calyx or ſhorter, ſometimes but not always ſlightly notched at the tip. Stamens ſix, of which from the ſmalneſs of the flower, the inequality can ſcarcely be perceived, but the ſhorteſt ſtand remote from the others. Silicle exactly oval, flat, with the remains of the ſtyle in a minute notch at the tip, ſmooth; valves with a ſharp but not dilated keel. Seeds two in each cell, on ſlender footſtalks. This has the proper ſilicle of a *Lepidium*; in ſome of the foreign ſpecies it approaches ſo to that of *Thlaſpi*, that it is ſcarcely poſſible to define the limits of the two genera [g].

[a] Jacquin. [b] Hort. kew. [c] Boxbaum. [d] Linn. mant. [e] Jacquin. [f] Hort. kew. [g] Engl. bot.

Native of ſeveral parts of Europe, as Oeland, Auſtria, Switzerland, Dauphiné, Sileſia, England, and according to Loureiro, of China. With us it is found on St. Vincent's rocks and walls near Briſtol, at Uphill in Somerſetſhire, near Pembroke, &c. flowering in march and april.

7. This is a biennial plant. The root-leaves bear a great reſemblance to thoſe of Cardamine, whence the trivial name: they have three or five pairs of ovate leaflets, the end one larger than the reſt. Stems a ſpan high, branched, terminated by a raceme of white flowers. Stem-leaves ſmaller, compoſed of five leaflets, the odd one larger and ovate.

Native of Spain, by way ſides in a dry clay ſoil [a].

8. This is an annual plant. Root-leaves pinnate, petioled, decurrent; lower leaflets roundiſh, creſcent-ſhaped, palmate in front; outer much larger, outwardly ſemipinnatifid with linear ſegments, the odd one entire. Stem-leaves few, linear, erect, ſcarcely divided. Stem a ſpan high, ſtiffiſh, thickiſh, awl-ſhaped, branched at bottom: branches awl-ſhaped, quite ſimple, ſtiff, ſpiny at the end. Flowers ſcattered, white, on a very ſhort ſtiff pedunele. Calyx ſmall, ovate, upright, gaping, pale, deciduous. Petals obovate, twice as long as the calyx, ſpreading between the ſegments of the calyx. Stamens white, ſimple, the length of the calyx. Silicle wedge-form, bifid, ſtiff, compreſſed at the tip, ſubſeſſile.

Native of the Levant [b].

9. Root annual, white, fuſiform, ſlender. Stem upright, round, ſmooth, from a foot to two feet in height, branched at top; both ſtem and branches terminated by looſe narrow ſpikes of flowers. Leaves oblong, alternate, pinnate, the pinnæ of the lower multifid, of the upper more entire, linear or lanceolate. Flowers ſmall. Calyx very ſmall, greeniſh. Petals white, larger than the calyx. Silicle roundiſh, without any ſtyle; the valves winged, whence Crantz makes it a *Thlaſpi*. Seeds ſmall ruſeſcent, ovate, marked with lines, having a ſharp taſte, like Muſtard [c]. According to Gærtner, the ſilicle is ovate, a little notched at each end, compreſſed; keel of the valves ending in a membranaceous margin: partition lanceolate, contrary to the valves. Seeds ſolitary, ovate, compreſſed a little, with a depreſſed line along the middle on each ſide, ſmooth, ferruginous or ſulvous, mucilaginous. He remarks, that thoſe ſpecies which have ſimple cotyledons and ſeveral ſeeds, may be referred to *Thlaſpi*; and ſuch as have one ſeed only in each cell to *Naſturtium*.]

Of the Garden Creſs, ſo much uſed in winter and ſpring ſalads, there are ſeveral varieties, one with broad leaves, another with curled leaves, and the common ſort. [Linneus remarks, that in the common ſort the leaves are multifid; that there is one variety in which they are lanceolate, entire and gaſh-ſerrate; and another in which they are pinnate and curled; but that no one can doubt their being of the ſame ſpecies who conſiders the fructification, ſtructure, taſte and appearance of the plants.

The native place of this commonly cultivated plant being unknown, Linneus ſuſpects it to have had its origin from *L. ruderale*, but this notion has not obtained credit. It is inſerted by Linneus, Krocker and Villars in their local floras.

The young plant has the ſmell and taſte of this natural order, but in a far inferior degree to Scurvygraſs; it may be however of ſome uſe as a diuretic and antiſcorbutic, if taken largely.]

10. This is a biennial plant. The lower leaves, which ſpread on the ground, are near two inches long, and about half an inch broad. Stalks a foot high, dividing into a great number of ſlender branches, having ſmall oblong leaves on them, which are cut on their ſides, and a little curled on their edges. The ſtalks and leaves are of a gray colour inclining towards hoarineſs. The flowers are produced in cluſters at the end of the branches; they are very ſmall and white, appear in july, and are ſucceeded by roundiſh bordered ſeed veſſels, which are compreſſed, and have one

[a] Linn. amœn. [b] Linn. mant. [c] Krocker.

small oblong seed in each cell, ripening in the autumn. Native of the Levant, and Spain. [Cultivated by Mr. Miller in 1759.

11. Root perennial, long, branching, spreading very far. Stems erect, a yard high and more, alternately branched, leafy, round, smooth, frequently flexuose, panicled at top with numerous branches of small white flowers, in little corymbs. Leaves alternate, acute, broad-lanceolate, lengthened out at the base and tip, serrate in the middle, glaucous especially beneath [1]. Silicle heart-shaped, with a short style and globular stigma. The young leaves are eaten sometimes in salads: they have a pungent acrid taste [2]. This plant is one of the acrid antiscorbutics, and was formerly used in the place of Horse-radish. An infusion of it vomits [3]. Having a hot biting taste like Pepper, and the leaves having been often used by the country people to give a relish to their viands instead of Pepper, it had the appellation of *Poor-man's Pepper*.

[Native of several parts of Europe. In Britain, at Hythe near Colchester, Heybridge near Maldon, in marshes near Grays, and other places in Essex: below Shetingham cliffs in Norfolk: between Beningborough and Mutton in the North Riding of Yorkshire: near Seaton, plentifully: about the castle of Weems, in Fifeshire, &c. It flowers in july.

12. Stem perennial, herbaceous, round, from upright ascending, with panicled branches, from a foot to a yard in height. Leaves scattered, alternate, attenuated at both ends; deeply serrate, spreading, smooth; the upper ones smaller, serrate only at the tip. Petioles shorter by half than the leaves, flat, keeled on the outside. Universal pedunctes terminating, round, even, leafless: racemes simple, during the time of flowering contracted, corymbed, whilst fruiting cylindrical. Pedicels very many, scattered, filiform, round, spreading, half an inch long, one-flowered. Flowers white, two lines in diameter. Silicles ovate-cordate, compressed, with one ovate, acute, reddish yellow seed in each cell.

Native of **New Zealand**, especially at Charlotte Sound.

This plant, with Apium or Smallage and Tetragonia halimifolia, was of considerable service to the ships crews under Captain Cook, when they lay in Charlotte Sound [4].

Introduced in 1779, by Jonas Dryander, M. A.[5]

13. Root perennial, producing a tuft of permanent leaves and branches. Stems scarcely a span high, simple, subtomentose. Leaves linear, acute, flat above, semicylindric beneath. Racemes terminating, and from the axils of the upper leaves, simple. Petals white. Silicle as in L. roderale. Stamens fix.

Native of Spain [6]. Cultivated by Mr. Miller in 1768.

14. Root perennial. Stature of L. sativum. Stems round, smooth and even. First root-leaves pinnate-lyrate; lower stem-leaves serrate, upper linear, quite entire. Flowers small, white. Calyxes tinged with purple. It resembles Iberis graminifolia, but is distinct from it. When adult, it casts the leaves.—Native of the South of Europe [7].

15. Stems upright, filiform, green. Leaves narrow-lanceolate, quite entire, even, thin not fleshy, green, spreading, often several at the buds. Corymbs small, white. Petals scarcely longer than the calyx, distant. Stamens fix, with yellow anthers. Fruit of Nasturtium. It differs from the preceding in being two feet high, with flat leaves; the lower serrate; calyxes red; petals broader, obovate.—Native of Spain [8].

16. Root annual, small, fibrous. Stems procumbent, hairy, alternately branched, leafy. (Linneus says they are a foot long and even.) Leaves alternate, smooth, pinnatifid: the lobes notched especially on the fore side. Spikes generally opposite to the leaves, many-flowered, soon lengthened out into racemes. Flowers very small, with two or four stamens, scarcely more. Silicle very distinctly two-lobed, rugged, very much resembling that of *Cochlearia Coronopus*, to which this plant is very nearly related as to generic character; and indeed Linneus says, it is an intermediate species between the two genera [9].

This plant escaped Ray and Dillenius. Hudson mentions it as a native of Devonshire and Cornwall, among rubbish. About Exeter, Truro and Penryn. At Dale, near the entrance of Milford Haven. It flowers in july.

17. Root annual or biennial. Stem a foot high, usually crooked, woody, stiff, branched. Leaves fleshy, smooth. Peduncles slender. Flowers very small, in clustered spikes or racemes. Calyxes pale yellow. Haller, (in the second edition of Stirp. Helvet.) Gouan and others affirm that there are no petals, and Pollich could never find any. Scopoli on the contrary says that it is not apetalous, and De Necker describes each of the four petals as obovate, clawed, and twice as long as the calyx. The truth seems to be that the petals are more frequently wanting, but that they do exist; and accordingly Haller, in the first edition of his Stirpes Helveticæ describes the flowers as white, though very small. Linneus assigns two stamens only to the flowers, this seems generally to be the case, but there are sometimes four, though Gouan could never discern that number. Scopoli affirms that the flowers are never diandrous in Carniola. Silicles numerous, small, much compressed, containing one seed in each cell. The plant has a pungent taste, and a fetid smell like a fox [10].

Native of most parts of Europe, in waste places, especially near the sea coast. Malden, Essex. Wisbeach, Cambridgeshire. Yarmouth, Lynn, and Clay, Norfolk. By the Severn above Worcester; near King's Weston below Bristol. Truro, Cornwall. Coast of Scotland. It flowers in june and july.

18. Root annual, single, white, an inch long. Root-leaves an inch in length, half of them being foot-stalk, and reddish, with three or four deep jags, at the beginning oval, half an inch broad, indented about the edges, smooth, dark green. Stalk round, whitish green, a foot and half high, having longer, narrower, deeper cut leaves set thick about it without any order; the branches also come out frequently on all sides, and round them many flowers, small, white, four-petalled, on peduncles the eighth part of an inch in length. Silicle round, emarginate, containing one oblong reddish seed in each cell.

Native of all the Caribbee islands [11], and Virginia. Cultivated in Chelsea garden in 1713. It flowers in june and july [12]. In the West Indies the inhabitants eat the leaves in their salads, as we do those of L. sativum or Garden Cress.

[19. Native of the Cape of Good Hope, where it was found by Mr. Francis Masson. Introduced in 1774. It flowers from may to august [13].

20. This has a long fleshy root, which runs deep into the ground, and sends out many oblong leaves spreading flat on the ground. Stalks slender, stiff, branching out horizontally on every side, about two feet high. The flowers come out in small close clusters at the ends of the branches: they are white, and appear in june and july. The seeds ripen in autumn. The plant is recommended as having the same qualities with L. latifolium, and is sometimes called *Sciatica* Cress.

Native of the South of France, Italy, Sicily, [Germany, Spain, Siberia.—Cultivated in 1683 by Mr. James Sutherland [14].]

21. Leaves and stalks much like those of Garden Cress, but more divided, and of a different taste and smell. Petals so small as to be almost imperceptible; and only two stamens to each flower. [Murray affirms that it has six stamens. Dillenius observed only two. The number certainly varies much in this genus. Dillenius describes this plant as two feet high and more, with many branches very full of leaves in bundles, resembling those of Tansey, but less cut, and

[1] Engl. bot. [2] Lightf. [3] Withering.
[4] Forst. elcul. [5] Hort. kew. [6] Linn.
[7] Ibid. [8] Linn. mant.

[9] Engl. bot. and Linn. mant.
[10] Haller. Woodw. Wither. Lightf. [11] Sloane.
[12] Hort. kew. [13] Ibid. [14] Ibid.

having small hairs on the back and along the edges. Flowers in oblong terminating spikes, that lengthen out as the fructification advances. Flowers so small as not to be seen with the naked eye. Petals roundish, white, reflex. Silicles small, compressed, emarginate, with one compressed, yellowish seed in each cell [a].

Native of Buenos Ayres, Brasil and other parts of America. Cultivated before 1732 in the Eltham garden.] Mr. Miller says that the seeds came up in the earth from several parts of America. [It has also been found at the southern end of Africa.]

22. This has creeping roots. Leaves longer and narrower than those of Cochlearia Draba, and less hoary. Flowers in loose bunches at the end of the branches, small and white. [Linneus remarks, that it has the appearance of Thlaspi campestre, insomuch that it can scarcely be distinguished but by the silicles. It is to be removed from Lepidium Draba, which is a *Cochlearia*, the silicles being perfectly those of a Lepidium, and not gibbous at the base as in that.

Native of the Levant, about Aleppo.

23. Stem herbaceous, two feet high, with the branches spreading at bottom and thence ascending, round and even. Leaves alternate, spreading, loose, two inches long, the lower ones of the stem attenuated at the base. Racemes terminating, solitary, simple. Peduncles round, even, almost upright, two hands in length. Pedicels scattered, filiform, spreading, corymbed, even, one-flowered, two lines in length. Flowers small, white. Nectary of six minute, compressed green glands, between the stamens. Silicle oval, compressed, emarginate. Seeds subsolitary.

Native of the islands in the South Sea. Botany island, Teautea and Humheine. It is used by the inhabitants for taking fishes by inebriating them. It is very acrid, and was used by our circumnavigators in their salads with L. oleraceum, which it resembles, but differs in many essential marks [b].

PROPAGATION AND CULTURE.

1. Sow the seeds in autumn, for those which are sown in the spring seldom flower the same year, and are often killed by the frost in winter; whereas those which are sown in the autumn, or the plants that rise from scattered seeds always flower about midsummer, and the seeds ripen in august and september following. The plants require no other care but to thin them, and keep them clean from weeds.

3. If the seeds of this and the other annual sorts be sown in the autumn, the plants will flower in april, may or june, and the seeds will ripen in may, june or july. If these be permitted to scatter, the plants will come up in autumn, and require no other care but to thin them when they are too close, and to weed them.

9. The seeds of common Garden Cress are sown in drills pretty close, in winter on moderate hot-beds, in spring and autumn on borders, and are soon fit for use. It should be cut young, otherwise it will be too rank.

11. This, with the other perennial sorts, is easily propagated, for every piece of the root will grow and multiply wherever it is planted, and will become difficult to root out in a garden, when it is once established.

13. This may be increased by seeds or cuttings. Sow the seeds in the spring on a bed of light earth in the open air, and when the plants are fit to transplant, set a few in pots, that they may be sheltered in winter under a common frame; for in sharp winters those plants which are exposed to the open air are frequently killed. Put the remaining plants in a dry rubbishy ground, in a sheltered situation, where by growing slowly they will become more shrubby, and be in less danger of suffering by cold.

18. Sow the seeds in april upon an open bed where the plants are designed to remain; thin them where they are too close, and keep them clean from weeds. If the seeds be permitted to scatter in the autumn, the plants will come up very well. N. 10. may be propagated in the same way.

20. The roots will abide several years in a dry soil. If the seeds be permitted to scatter, they will come up early in the spring without care.

21. Sow the seeds on a moderate hot-bed in the spring, and when the plants have obtained strength transplant them on a warm border.

22. This is a perennial plant which increases by its creeping roots in great plenty.

[LEPIDIUM. See *Cochlearia*, *Iberis*, *Plumbago*, *Thlaspi*.]

LEPIDOCARPODENDRON. See *Protea*.

[LEPTAUREA. See *Zoegia*.

LEPTOSPERMUM. See *Melaleuca*.

LEPTOSTACHYA. See *Rhyma*.

LERCHEA. (*So named from John Lerche, who collected plants from 1745 to 1747 about Astrachan.* Amoen. 2. 356.)

Lin. gen. Reich. n. 891. *Schreb. n.* 1107. *mant.* 155. *Juss.* 421.

Class. 16. 2. Monadelphia Pentandria.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, five-toothed, permanent.

COR. one-petalled, funnel-form. *Tube* longer than the calyx. *Border* five-parted, rather erect.

STAM. *Filaments* scarce any, but the tube of the germ. *Anthers* five, oblong, seated on the tube of the germ.

PIST. *Germ* subovate, superior, terminated (within the corolla) by an obtuse tube. *Style* within the tube of the germ, filiform, length of the stamens. *Stigmas* two or three, rather obtuse.

PER. *Capsule* subglobose, torulose, three-celled, sometimes two-celled.

SEEDS very many.

ESSENTIAL CHARACTER.

Cal. five-toothed. *Cor.* funnel-form, five-cleft. *Anthers* five, placed on the tube of the germ. *Style* one. *Cap.* three-celled, many-seeded.

SPECIES.

1. Lerchea longicauda,

Lin. syst. 610. *Reich.* 3. 300. *mant.* 256.

DESCRIPTION, &c.

This is an irregular growing shrub, with sordid, jointed branches. Leaves opposite, lanceolate, petioled, even, quite entire, a foot long. Stipules ensiform, shorter than the petioles. Spike terminating, filiform, a foot in length; with remote, scattered, minute flowers.—Native of the East Indies [c].

LERCHEA. See *Salsola*.

LESKIA. (*So named by Hedwig, from Nath. Godofr. Leske, Professor of Natural History and Oeconomy in the University of Leipsic.*)

Lin. gen. Schreb. n. 1657. *Hedw. fund.* 2. 93.

Hypni spec. *Linn.*

Class. 24. 3. Cryptogamia Musci.

Nat. order of *Mosses*.

GENERIC CHARACTER.

CAPS. oblong. Peristome double: the exterior with sixteen teeth, which are acute; the interior membranaceous, divided into equal segments.

MALES gemmaceous in different individuals.

Hypnum complanatum, polyanthos. *Schreb. n.* 1070. viticulosum, attenuatum. *Schreb. n.* 1037.—myosuroides, paludosum, &c.]

LETTUCE. See *Lactuca*.

——— Lamb's. See *Valeriana*.

[LEUCADENDRON. See *Protea*.

LEUCANTHEMUM. See *Chrysanthemum* and *Osteites*.

LEUCAS. See *Dryas* and *Nepeta*.]

LEUCOIUM. (*Known of Theophrastus and not of Dioscorides.* Ion violon, *Viola alba*, white Violet.)

Lin. gen. n. 402. *Reich. n.* 434. *Schreb. n.* 548. *Juss.* 55.

Class. 6. 1. Hexandria Monogynia.

Nat. order of *Spathaceæ. Narcissi*, Juss.

GENERIC CHARACTER.

CAL. *Spathe* oblong, obtuse, compressed, gaping on the flat side, withering.

COR. bell-shaped-expanding. *Petals* six, ovate, flat, conjoined at the base: with the tips thickish and stiffish.

STAM. *Filaments* six, setaceous, very short. *Anthers* oblong, obtuse, quadrangular, upright, distant.

[a] Dill. elth. [b] Forster. [c] Linn. mant.

Pist. *Germ* roundish, inferior. *Style* clavate, obtuse. *Stigma* setaceous, upright, sharp, longer than the stamens.

Per. *Capsule* top-shaped, three-celled, three-valved.

Seeds several, roundish.

Obs. L. autumnale *has a filiform style.* Lin. R.

ESSENTIAL CHARACTER.

Cor. bell-shaped, six-parted, thickened at the tips. *Stigma simple.*

SPECIES.

1. Leucoium vernum. *Great Spring Snow-drop.* *Lin. spec.* 414. *fil.* 316. *Reich.* 2. 15. *hort. cliff.* 135. *upf.* 74. *Jacqu. austr.* 4. 6. *t.* 312. *Scop. carn. n.* 392. *Villars dauph.* 2. 247. *Krock. silef. n.* 498. *Curt. magaz. t.* 46.

Galanthus vernus. *Allion. pedem. n.* 1865. *Hall. helv. n.* 1253.

L. bulbosum. *Clus. hist.* 1. 169.—vulgare. *Bauh. pin.* 55. *Rati hist.* 1144. *Rudb. elys.* 2. 95. *f.* 1.—hexaphyllon. *Dod. coron.* 202. *hist.* 230.—cum unico flore, rarius bino. *Bauh. hist.* 2. 590.—primum. *Tabern. ic.* 613.—serotinum. *Ger.* 120. 2. *emac.* 148. 3.—præcox majus. *Park. parad.* 109. *t.* 107. *f.* 9.

Narcissus septimus. *Matth.* 1246. *Cam. epit.* 957.

Narcissus Leucoium vulgare. *Tournef. inst.* 387.

Spathe one-flowered, style club-shaped, leaves flat.

2. Lencoium æstivum. *Summer Snow-drop.* *Lin. spec.* 414. *fil.* 316. *Reich.* 2. 16. *Curt. lond.* 5. 23. *Wither. arr. ed.* 3. 331. *Scop. carn. n.* 393. *Jacqu. austr.* 3. 2. *t.* 203. *Krock. silef. n.* 499. *Rob. ic.* 198.

L. bulbosum polyanthemum. *Dod. pempt.* 230.—tardius florens, floribus minoribus. *Bauh. hist.* 2. 592. *Rati hist.* 1145.—majus f. multiflorum. *Bauh. pin.* 55.—serotinum majus. *Clus. hist.* 1. 170. 1. *Park. parad.* 110. 3. *t.* 107. *f.* 11.—majus polyanthemum. *Ger. emac.* 148. 4.

Polyanthemum. *Renealm. spec.* 99. *t.* 100.

Spathe many-flowered, styles club-shaped, leaves flat.

[3. Leucoium autumnale. *Autumnal Snow-drop.* *Lin. spec.* 414. *Reich.* 2. 16. *Lueff. it.* 136.

L. bulbosum autumnale. *Bauh. pin.* 56. *Park. parad.* 110. 2. *t.* 107. *f.* 10.—tenuifolium. *Clus. hist.* 1. 170. 2. *Rati hist.* 1145.—aut. minus tenuif. *Bauh. hist.* 593. *f.* 1.—aut. minimum. *Ger. emac.* 148. *f.* 5.

Tricophyllum. *Renealm. spec.* 101. *t.* 100.

Spathe two-leaved many-flowered, styles and leaves filiform.

4. Leucoium stramosum.

Ait. hort. kew. 1. 407. *t.* 5. *Jacqu. ic.* 2. *t.* 361. *collect.* 3. 222.

Crinum tenellum. *Linn. suppl.* 194. (excl. synon.)

Spathe two-leaved many-flowered, flowers erect, style inflated at the base globular.]

DESCRIPTIONS, &c.

1. Bulb oblong, shaped like that of the Daffodil, but smaller. Leaves flat, deep green, four or five in number, broader and longer than those of the common Snow-drop (Galanthus nivalis). Scape angular, near a foot high, hollow and channelled: towards the top comes out a whitish sheath, opening on the side, out of which come two or three flowers, hanging on slender pedunicles. Corolla much larger than that of the common Snow-drop; and the ends of the petals are green. They appear in march, and have an agreeable scent, not much unlike those of the Hawthorn. [In its wild state, the scape is only half a foot in height or little more, and generally has only one flower, very seldom two. The capsule is obscurely and bluntly three-cornered. The three inner petals are narrower and a little shorter. The whole plant is very smooth[a].

The flowers, which at first sight resemble those of the common Snow-drop, are easily distinguished by the absence of the three-leaved nectary. They do not come out so soon by a month. This plant, being of a different genus from the true Snow-drop, ought certainly to have another English name; Mr. Curtis therefore calls it *Spring Snow-Flake*[b]. Parkinson had named it *Great early bulbous Violet*, and Gerarde *Late-flowering bulbous Violet*.

Native of Italy, the South of France, Germany, Austria, Switzerland.—Cultivated in 1596 by Gerarde[c].

2. Bulb the size of a Chestnut, somewhat ovate, outwardly pale brown, inwardly white; coats numerous, thin and closely compacted.] Mr. Miller says, the bulb is nearly as large as that of the common Daffodil, and very like it in shape: that the leaves also are not unlike those of the Daffodil, more in number than in the preceding, and keeled at the bottom, where they fold over each other, and embrace the stalk. [Leaves about a foot and half in length, upright, nearly linear, almost an inch in breadth, obtuse, the lower ones shortest. Scape a little higher than the leaves, hollow, slightly flatted, two-edged, a little twisted, one side sometimes obtuse, the other acute. Peduncles for the most part five from the same sheath, each supporting a single flower, angular, and of unequal lengths. Flowers pendulous, growing all one way, having little scent. Petals white, finely grooved within, not at all uniting at bottom; the tips thickish, a little puckered, and marked with a green spot. Seeds large, black and glossy[d].] The flowers appear at the end of april or the beginning of may, and there is a succession of them during three weeks, or longer in cool weather.

[Native of Hungary, Austria, Carniola, Tuscany, Silesia. Mr. Curtis first observed it in England between Greenwich and Woolwich, about half a mile below the former place, close by the Thames side, just above high water mark, with Reed, Marsh Marigold, and other common water plants, and in a similar situation to that in which it is found wild in Austria. It has also been found wild in the Isle of Dogs, which is the opposite shore. It grows here even more luxuriantly than in gardens, where it seldom has a soil or situation sufficiently moist.—Mr. Gough found it in a small island, in the river, about three miles S. of Kendal, on the dam of the gunpowder mill.

Mr. Curtis, to distinguish it from Galanthus, names it *Summer Snow-Flake*. Parkinson calls it *Great late-flowering Bulbous Violet*: Gerarde, *Great many-flowered Bulbous Violet*. In the gardens it is known by the name of *Great Summer Snow-drop*; *late* or *tall Snow-drop*.

3. Bulb thick for the size of the plant, composed of many glutinous coats, bitter, covered with a whitish membrane. Scape slender, brownish, a hand in height, supporting two or three small white flowers (sometimes only one), hanging down, having no smell. It is distinguished by its four or five capillary leaves[e]; which begin to spring up after the flower is past, when the seeds are ripening, and sometimes after the heads are ripe. They abide all the winter and spring following, and wither away in the beginning of summer; leaving the scape to appear naked. The flowers are a little reddish at the bottom next the stalk[f].

Native of Portugal, and Spain on the confines near Badajos.—Introduced in 1765, by Mr. Joshua Brooks. It flowers in september[g].

4. Bulb roundish, white, less than a hazel nut. Leaves two or three, inclosed at the base in a white sheath, filiform, dotted with white, keeled at bottom, flat, or a little convex on the back, weak and more or less lying on the ground. Scape flexuose-erect, slender, about half a foot high, roundish, terminated by a spreading umbel of from three to seven flowers. Valves of the spathe lanceolate, acute, membranaceous, opposite, sometimes equal sometimes not, pale. Peduncles filiform, one-flowered, unequal, from one to two inches in length. Flowers without scent, coming out successively. Petals white within, purplish without, oblong-lanceolate, three lines in length; the three inner bluntish: the three outer acute, with a blunt, greenish keel. Anthers purple. Germ three-cornered, green. Style white, swelled out at bottom into a body larger than the germ, plaited at bottom; thence awl-shaped, bluntly three-cornered, the length of the stamens.

[a] Jacquin. [b] Magaz. [c] Hort. kew. [d] Curtis. [e] Clusius. [f] Parkinson. [g] Hort. kew.

Stigma

Stigma obſcurely trifid. Capſule ſubglobular, three-cornered, or rather compoſed of three. The whole plant is ſmooth [1]. See *Crinum teneſſum.*

Native of the Cape of Good Hope, where it was diſcovered by Maſſon. Introduced in 1774. It flowers in november [2].]

PROPAGATION AND CULTURE.

Theſe bulbs are increaſed by offſets, which the two firſt ſorts put out pretty plentifully, in a favourable ſituation, when they are not too often removed. They ſhould have a ſoft loamy ſoil, and an expoſure to the eaſt. Plant the roots ſix inches aſunder, and four or five inches deep. They ſhould not be tranſplanted oftener than every third year.

[A north or north-eaſt border is beſt for them; and the proper ſoil a mixture of loam and bog earth. In different aſpects however their flowering may be forwarded or protracted, and thus a longer ſucceſſion of theſe and other flowers produced [3].

The fourth ſort muſt be houſed with other Cape Bulbs, and treated as they are.

LEUCOIUM. See *Aliſſum, Arabis, Biſcutella, Cheiranthus, Draba, Eryſimum, Galanthus, Heliophila, Heſperis, Verbaſcum.*

LEUCOXYLON. See *Bignonia.*

LEVISANUS. (*Altered from Leviſanus, ſo called by Petiver and Sherard, from the Reverend Mr. Lewis, who ſent ſome ſhells to Petiver from Fort St. George. See Gazoph. Petiv. 25. and Raii ſuppl.* 130.)

Lin. gen. Schreb. n. 377.

Brunia, *Gaertn. t.* 30. Brunia ſpec. *edit. pr.*

Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth common* hemiſpheric, imbricated, many-flowered, *leaflets* linear.

Perianth proper one-leafed, ſuperior, five-toothed, ſharp, upright, permanent.

COR. *Petals* five. *Claws* ſlender. *Borders* oblong, ſhorter.

STAM. *Filaments* five, capillary, inſerted into the bottom of the perianth. *Anthers* oblong.

PIST. *Germ* top-ſhaped, inferior. *Styles* two, conjoined into one, or elſe diſtinct and approximated, capillary. *Stigmas* ſimple.

PER. *Berry* corticated, ovate, incruſted by the calyx: with the tip free, two-celled.

SEEDS five or ſix, oblong, compreſſed. *Receptacle of the ſeeds* fungous, large, in the middle of the partition.

REC. *common* globoſe, villoſe, chaffy.

OBS. *The fruit of all the ſpecies is not yet known.*

ESSENTIAL CHARACTER.

Flowers aggregate. *Cal.* one-leafed, ſuperior, five-cleft. *Cor.* five-petalled, ſuperior. *Filam.* inſerted into the baſe of the perianth. *Styles* two, conjoined. *Berry* two-celled. *Seeds* five or ſix, compreſſed.

SPECIES.

1. Leviſanus nodiflorus.
   Brunia nodiflora. *Lin. ſpec.* 288. *ſyſt.* 240. *Reich.* 1. 559. *mant.* 343. *hort. cliff.* 70. *Berg. cap.* 54. *Gaertn. fruct.* 1. 152.
   Cupreſſo-pinulus capitis bonæ ſpei. *Breyn. cent.* 12. *t.* 12.
   Erica capitata f. nodiflora cupreſſiformis africana. *Pluk. phyt. t.* 346. *f.* 4.
   Scabioſæ affinis arbuſcula africana ericoides ſphærocephalos. *Raii hiſt.* 1444.
   Leaves imbricate three-ſided acute.
2. Leviſanus paleaceus.
   Brunia paleacea. *Lin. ſyſt.* 240. *Reich.* 1. 560. *mant.* 559. *Berg. cap.* 56.
   Leaves in five rows imbricate preſſed cloſe, corymb terminating, chaffs of the heads ſtanding out.
3. Leviſanus abrotanoides.
   Brunia abrotanoides. *Lin. ſpec.* 288. *ſyſt.* 240. *Reich.* 1. 560. *Berg. cap.* 59. *Burm. afr.* 266. *t.* 100. *f.* 1.
   Lewiſanus africanus, ericæ folio, capitulo majori. *Raii dendr.* 130.
   L. capenſis Serpylli folio. *Pet. gaz. t.* 5. *f.* 7.
   Erica capitata f. nodiflora, corios foliis rectis, æthiopica. *Pluk. mant. t.* 346. *f.* 7.
   Leaves linear-lanceolate ſpreading three-ſided calleus at the tip.
4. Leviſanus radiatus.
   Brunia radiata. *Lin. ſyſt.* 240. *Reich.* 1. 561. *mant.* 209. *Berg. cap.* 58.
   Phylica radiata. *Lin. ſpec.* 283. *amœn.* 4. 268.
   Staavia radiata. *Dahl. obſ.* 15.
   Chryſanthemum ericoides coronatum capitis bonæ ſpei. *Breyn. cent.* 165. *t.* 82. *Pluk. mant. t.* 454. *f.* 7. *Mor. hiſt.* 3. 21. *ſ.* 6. *t.* 3. *f.* 43.
   Leaves linear three-ſided, calyx rayed, the inner leaflets coloured.
5. Leviſanus glutinoſus.
   Brunia glutinoſa. *Lin. ſyſt.* 240. *Reich.* 1. 561. *mant.* 210. *Berg. cap.* 57.
   Staavia glutinoſa. *Dahl. obſ.* 17.
   Muſcus clavatus æthiopicus arboreſcens, &c. *Pluk. mant. t.* 431. *f.* 1.
   Leaves linear three-ſided, calyx rayed, all the leaflets coloured.

DESCRIPTIONS, &c.

1. Leaves imbricated in five, not four, rows. Calyx five-parted. Petals five, linear, having a chink on each ſide of the claw with a converging margin. Stamens filiform, long. Germ ſuperior, two-celled. Styles two, approximating [4]. Linnæus himſelf remarks, that this ſpecies is ſufficiently diſtinct from the other Brunias, by its having two ſtyles, and a ſuperior two-celled fruit. Gaertner indeed affirms, that the fruit is half inferior, but in this he is probably miſtaken. He thinks it is rather a nut than a drupa. He deſcribes it however as a juiceleſs drupa, corticated by the calyx growing very cloſely to it, ſmall, ovate, woolly: rind membranaceous, thin: ſhell hard, ſomewhat bony, two-celled, valveleſs. Receptacle double: of the fruit globular, chaffy, villoſe: of the ſeed ovate-globular, fungoſe, very large, receiving on each ſide a very thin partition, faſtened to it. Seeds five or ſix in each cell, ſmall, ovate-oblong, narrower at top, compreſſed, pale, ruſeſcent, pendulous; with a terminating ſublateral umbilicus.

Introduced in 1786, by Mr. Francis Maſſon [5].

2. This ſhrub reſembles the preceding, but it has ſmaller leaves, covering the branches. Heads or flowers many, panicled. Chaffs between the florets ſtanding out twice their length, pale, longer than the calycine leaflets. Styles two. Receptacle hairy [6].

3. Leaves bluntiſh, with a brown callority at the tip, flat above, keeled underneath, ſmooth, about two lines in length, petioled, ſcattered, approximating, on the young ſhoots hairy. Petioles broad, ſhort, from upright preſſed cloſe. Heads of flowers globular, terminating, ſubumbelled; on round peduncles, covered with ſmall, ſubimbricate, leafy ſcales, one-flowered, ſomewhat villoſe, gibboſe and ſucculent at bottom. Corolla white [7]. Germ ſuperior. Style one, emarginate [8].

Introduced in 1787, by Mr. Francis Maſſon [9].

4. Stem from a foot to two feet in height, the ſize of a ſwan's quill, upright, round, leafy, ſcarred, determinately branched, dichotomous or trichotomous; the branches rod-like, hairy. Leaves ſcattered, approximating, from upright ſpreading, petioled, acute, dark green with brown tips, having a few hairs, when more advanced naked, channelled, permanent. Petioles linear, very ſhort, erect. Hairs ſimple. Common perianth the ſize of a Pepper-corn, with blunt leaflets, hairy at the baſe; the outer ones ſhorter, rude; the inner whitiſh, the length of the diſk, ſpreading, reſembling a ray. Common corolla duſky, not at all glutinous. Receptacle hairy [10].

Introduced in 1787, by Mr. Francis Maſſon [11].

5. Stem from a foot to two feet in height, the ſize of a ſwan's quill, upright, round, grooved, ſcarred, very much branched; branches proliferous, upright, hairy. Leaves ſcattered, approximating, from upright

[1] Jacquin. and Hort. kew. [2] Hort. kew. [3] Curtis magaz.
[4] Linn. mant. [5] Hort. kew. [6] Linn. mant.
[7] Berglius. [8] Linn. [9] Hort. kew. [10] Dahl. [11] Hort. kew.

ſpreading, petioled, blunt, dark green with a brown callous dot at the tip; the younger ones having frequently a few hairs; when farther advanced naked, channelled, permanent. Petioles linear, very ſhort, upright. Hairs ſimple. Common perianth the ſize of a Pea, with the leaflets biglandular at the baſe, longer than the diſk, whitiſh, ſpreading, reſembling a ray. Common corolla duſky, very glutinous. Receptacle chaffy. This differs from the preceding, which it reſembles very much, in a proliferous ſtem, the leaflets of the common perianth all coloured, and longer than the diſk, the corolla glutinous, and the receptacle chaffy [1].

Theſe are all ſhrubs, and natives of the Cape of Good Hope.

LEVISANUS. See *Protea*.

LEVISTICUM. See *Ligusticum*.

LEYSERA. (*From Fridr. Wilh. de Leyſer, author of Flora Halenſis*, 1761.)

Lin. gen. n. 965. *Reich. n.* 1045. *Schreb. n.* 1303. *Gærtn. t.* 173. *Juſſ.* 179. Aſteropterus. *Vaill.* 1720. *Gærtn. t.* 173.

Claſſ. 19. 2. Syngeneſia Polygamia Superflua.

Nat. order of *Compoſitæ Diſcoideæ. Corymbiferæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Common* ovate, imbricate: *ſcales* obtuſe, concave, hariſh.

COR. *Compound* rayed: *corollets* hermaphrodite tubular, ſeveral, in the diſk. *Females* ſtrap-ſhaped, ſeveral, in the ray.

Proper of the Hermaphrodite funnel-form, five-toothed, rather upright.

Female ſtrap-ſhaped, lanceolate, entire.

STAM. in the Hermaphrodites. *Filaments* five, capillary, very ſhort. *Anther* cylindric, tubular.

PIST. in the Hermaphrodites. *Germ* ſmall. *Style* filiform. *Stigma* bifid.

PER. none. *Calyx* unchanged.

SEED. In the Hermaphrodites ſolitary, oblong. *Down* five-briſtled, feathery, long, within which is a very ſhort chaffy *crown*.

In the Females very ſimilar. *Down* with the chaffy *crown* alone, without feathers.

REC. naked. *Chaffs* of the ray alone ſeparating the flowers.

ESSENTIAL CHARACTER.

Cal. ſcarioſe. *Down* chaffy; in the diſk feathery alſo. *Recept.* ſubpaleaceous.

SPECIES.

1. Leyſera gnaphalodes. *Woolly Leyſera.*
Lin. ſpec. 1249. *Juſſ.* 770. *Reich.* 3. 841. *amœn.* 6. 104. *Jacqu. ic.* 3. 588. *collect.* 2. 343.
Aſteropterus luteus, laricis foliis lanuginoſis. *Vaill. act. par.* 1720. *p.* 313.
After æthiopicus, ſtœchadis foliis, flore aureo. *Herm. lugdl.* 68. *t.* 71. *Breyn. prodr.* 3. 26. *t.* 14. *f.* 3.
Leaves ſcattered, flowers peduncled.

2. Leyſera Calliconia.
Lin. ſyſt. 771. *Reich.* 3. 841. *mant.* 286.
Calliconia gnaphalodes. *Burm. prodr.* 24. *Pluk. phyt. t.* 350. *f.* 4.
Aſteropterus Calliconia. *Gærtn. fruct.* 2. 460. *t.* 173.
After africanus, ſtœchadis folio, flore aureo. *Seba muſ.* 2. *t.* 66. *f.* 6.
Leaves in three rows, flowers ſubſeſſile.

3. Leyſera paleacea.
Lin. ſyſt. 771. *Reich.* 3. 842. *Gærtn. fruct.* 2. 432. *t.* 173.
L. ericoides. *Berg. cap.* 294.
Relhania paleacea. *L'Herit. ſert.* 24.
Leaves three-ſided callous at the tip and curved back.

DESCRIPTIONS, &c.

1. This is an evergreen ſhrub, with a balſamic ſmell. The trunk and older branches leafleſs, brown; the younger ones very cloſely covered with leaves, and ſpreading out very wide. Leaves very much cluſtered, filiform, ſpreading, quite entire, hoary, woolly, flaccid, an inch long, with brown-headed hairs. Among theſe are bundles of very ſmall leaves, like the rudiments of young branches, very few however of which come to perfection. Peduncles filiform at the ends of the branchlets, ſolitary one-flowered. Calycine ſcales pale, with the middle of the back green. Corolla yellow. Seeds browniſh [2].

Native of the Cape of Good Hope. Introduced in 1774, by Mr. Francis Maſſon. It flowers from July to ſeptember [3].

2. Receptacle flat, with raiſed dots in the middle, naked, rugged, and having a ſingle row of chaffs in the circumference: chaffs ſcarioſe, white, covering the germs of the females externally, and ſcarcely or but little longer. Seeds uniform, linear-oblong, compreſſed, ſomewhat rugged at the edges and ferruginous. Pappus or down difform; in the ray ſimple, chaffy, ten-leaved; leaflets linear-acuminate, white, one-fourth of the length of the ſeed: in the diſk compoſed of five rays, which are chaffy, linear-acuminate, very ſhort; and of five others which are feathery, longer than the ſeed, and alternate with the others. Sometimes a ſingle feathered ray is added to the down of the females; and in the ſeeds of the androgynous flowers the chaffy rays are frequently augmented by a leaflet or two, ſo that from five-leaved they become from ſix to eight-leaved [4].

Native of the Cape of Good Hope.

3. Leaves with few hairs on them, with a tomentoſe groove on the inſide. The whole receptacle covered with chaffs almoſt the length of the flowers. The whole crown of the ſeed membranaceous, and none downy. Hence it agrees in character with Buphthalmum, but it reſembles the preceding ſo much, as ſcarcely to be diſtinguiſhed from it in appearance [5]. L'Heritier removes it into a new genus to which he has given the name of *Relhania*.

Gærtner deſcribes the receptacle as flattiſh, narrow, chaffy: chaffs the length of the florets, linear, very narrow, deciduous. Seeds uniform, oblong, narrowing downwards, obſcurely angular or almoſt cylindrical, ſmooth, bay-coloured. Pappus or down one-leafed, tubular, ſcarioſe, white, little leſs than a third part of the ſeed in length: the aperture of the tube in the ſeeds of the ray quite entire; in the others obſcurely and bluntly four-toothed. He refers the ſpecies with a naked receptacle and a compound down to Vaillant's genus of *Aſteropterus*.

Native of the Cape of Good Hope.

LIATRIS.

Lin. gen. Schreb. n. 1263. *Gærtn. t.* 167. Suprago. *Gærtn. t.* 166.

Anonymos. *Walt. carol.* 196. Cirſium. *Dill. elth. t.* 71, 72. *f.* 82, 83. Serratula. *Dill. elth. t.* 263.

Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ Capitatæ. Cinarocephalæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Common* oblong, imbricated with ſeveral ſubovate, unarmed, coloured *ſcales*.

COR. *Compound* tubular, uniform: *corollets* hermaphrodite, equal.

Proper one-petalled, funnel-form: *tube* inflex, *border* five-cleft, *diviſions* recurved.

STAM. *Filaments* five, capillary, very ſhort. *Anther* cylindric, tubular.

PIST. *Germ* oblong. *Style* filiform, very long, bifid to the very ſtamens, ſtraight. *Stigmas* rather ſharp.

PER. none. *Calyx* unchanged.

SEEDS ſolitary, cornered. *Down* feathery, coloured, ſeſſile.

REC. naked, flat.

ESSENTIAL CHARACTER.

Cal. oblong, imbricate, awnleſs, coloured. *Down* feathered, coloured. *Recept.* naked, hollow-dotted.

SPECIES.

1. Liatris noveboracenſis. *Long-leaved Liatris.*
Serratula noveboracenſis. *Lin. ſpec.* 1146. *Reich.* 3. 671. *hort. cliff.* 392. *Pallas it.* 321. *Dill. elth.* 355. *t.* 263. *f.* 342. *Mor. hiſt.* 3. 133. *Raii ſuppl.* 208. 1, 2. *Pluk. phyt. t.* 109. *f.* 3. (Centaurium).
Leaves lanceolate-oblong ſerrate pendulous.

[1] Dahl.
[2] Jacquin. [3] Hort. kew. [4] Gærtner. [5] Lin. ſyſt.

2. Liatris prælta. *Tall Liatris.*]
Serratula prælta. *Lin. ſpec.* 1146. *Reich.* 3. 671. *Mill. dict. n.* 8. *fig. t.* 234. *Dill. elth.* 356. *t.* 264. *f.* 343. *Boc. muſ.* 2. 45. *t.* 32. *Pluk. phyt. t.* 280. *f.* 6. (Eupatoria).
Leaves lanceolate-oblong ſerrate ſpreading hirſute underneath.

3. Liatris glauca. *Glaucous Liatris.*
Suprago glauca. *Gærtn. fruct.* 2. 403.
Serratula glauca. *Lin. ſpec.* 1146. *Reich.* 3. 671. *Mill. dict. n.* 3. *Gron. virg.* 116. *Dill. elth.* 354. *t.* 262. *f.* 341. *Pluk. mant.* 42. (Centaurium).
Leaves ovate-oblong acuminate ſerrate, flowers corymbed, calyxes roundiſh.

4. Liatris ſquarroſa. *Rough-headed Liatris.*
Serratula ſquarroſa. *Lin. ſpec.* 1146. *Reich.* 3. 671. *hort. cliff.* 392. *Mill. dict. n.* 4. *Gron. virg.* 116.
Cirſium tuberoſum, capitulis ſquarroſis. *Dill. elth.* 83. *t.* 71. *f.* 82.
Stoebe virginiana, &c. *Mor. hiſt.* 3. 137. *ſ.* 7. *t.* 27. *f.* 10.
Leaves linear, calyxes ſquarroſe ſubſeſſile acuminate lateral.

[5. Liatris ſcarioſa. *Ragged-cupped Liatris.*
Serratula ſcarioſa. *Lin. ſpec.* 1147. *Reich.* 3. 672. *Gron. virg.* 116. *ed.* 1. 92. (Cirſium). *Baniſt. virg.* 1027. *Pluk. mant.* 105. (Jacea). *Pluk. phyt. t.* 177. *f.* 4. (Eupatorio affinis).
Leaves lanceolate quite entire, calyxes ſquarroſe pedunculed blunt.

6. Liatris piloſa. *Hairy-leaved Liatris.*
Serratula piloſa. *Ait. hort. kew.* 3. 138.
Anonymos piloſus. *Walt. carol.* 197.
Leaves linear hairy, flowers axillary on long peduncles.

7. Liatris ſpecioſa. *Hairy-cupped Liatris.*
Serratula ſpecioſa. *Ait. hort. kew.* 3. 138.
Stæhelina elegans. *Walt. carol.* 202.
Leaves linear-ſickled, flowers ſeſſile in ſpikes, calycine leaflets rough-haired acute, inner elongated coloured at the tip.

8. Liatris ſpicata. *Spiked Liatris.*
Serratula ſpicata. *Lin. ſpec.* 1147. *Reich.* 3. 672. *Gron. virg.* 116.
Suprago ſpicata. *Gærtn. fruct.* 2. 402.—Liatris, *t.* 167.—Anonymos ciliatus. *Walt. carol.* 197.
Cirſium tuberoſum, lactucæ capitulis ſpicatis. *Dill. elth.* 85. *t.* 72. *f.* 83.
Jacea non ramoſa, tuberoſa radice, &c. *Baniſt. virg.* 1027.
J. anguſtifolia, tub. rad. virginiana. *Pluk. phyt. t.* 424. *f.* 6.
Stoebe virg. tub. anguſtif. capitulis ſeſſilibus. *Mor. hiſt.* 3. 137.
Leaves linear ciliate at the baſe, flowers in ſpikes ſeſſile lateral, ſtem ſimple.

DESCRIPTION, *&c.*

This genus conſiſts of ſpecies ſeparated from Serratula, on account of the down being feathered and the receptacle naked. Juſſieu ſaw the neceſſity of this, and was of opinion that theſe plants are nearer to Eupatorium or Cacalia. Gærtner ſeeing that they are diſtinct both from Serratula and Eupatorium gave them the name of *Suprago*. Walter ſaw that they were diſtinct, but did not give them a generic name.

1. Stems ſeveral, ten or twelve feet high, ſmooth, deeply ſtriated, pale green, ſtout, rigid, ſtraight, not branching except at top for the flowers. Leaves alternate, very long, narrow in proportion to their length, veined, wrinkled, roughiſh but without hairs, dark green above, ſomewhat hoary underneath. Flowers in a ſort of umbel (or corymb) at top, conſiſting of fewer heads than in L. glauca, leſs ſcattered, and ſmall in proportion to the plant. Heads more ſtrigoſe, the florets not turned ſo much outwards: calycine ſcales, eſpecially the lower narrower, and ending in ſlender oblong horns. It ſeldom flowers till the end of october. The florets are of a deep purple colour, and the calyx is ringed with purple. Seeds oblong, columnar, whitiſh: crowned with a hairy, ſtiffiſh, browniſh down. Receptacle naked.

Native not only of New York, but of Virginia, Carolina, and other parts of North America [a]. Cultivated in 1732, by James Sherard, M.D.[b]

2. Root perennial, large, ſtriking deep into the ground. Stems branching only at top, ſeven or eight feet high, purpliſh, ſtraight, deeply ſtriated. Leaves ſeven inches long, and an inch and half broad in the middle, ending in acute points, entire, deep green above, hoary on their under ſide, ſeſſile. Flowers in looſe erect bunches at the ends of the branches. Calyxes oval, compoſed of few ſcales terminating in brittles. Florets pale purple.

[Dillenius obſerves, that the leaves are ſhorter and leſs wrinkled, wider in the middle, not pendulous, as in the preceding, but either horizontal or pointing obliquely upwards; they are alſo leſs ſerrate and more minutely, yelloviſh green above, and more hoary beneath. In figure and toothing they are like Peach leaves, but differ from them in being wrinkled above and hoary beneath. The heads of flowers are ſomewhat rounder, and the cuſps or horns at the end of the calycine ſcales are ſhorter. Receptacle naked.

Native of Virginia and Carolina [c], and other parts of North America. Cultivated in 1732, by James Sherard, M.D. It flowers from ſeptember to november [d].]

3. Root perennial. Stems ſix or ſeven feet high, purple and channelled. Leaves three inches long, and an inch and half broad in the middle, ſtiff, and light green on both ſides.

[Stems ſtraight, ſmooth, unbranched except at top, where the flowering branches are a foot or eighteen inches in length, divided and ſubdivided into many others. Calyxes very dark purple. Down very prominent, of a pale or whitiſh brown. Florets dark purple, inclining to violet. The leaves are ſmooth, dark glaucous green above, paler glaucous beneath, woolly along the veins and nerves [e]. Receptacle flat, naked, obſcurely excavated, ſmooth. Seeds oblong, quadrangularly columnar, ſtriated, ſmooth, rufeſcent-bay-coloured. Down ſetaceous, thiffiſh, ſomewhat brittle, dirty white, tooth-ciliate; the outmoſt rays very ſhort, the reſt longer than the ſeed [f].

Native of Maryland, Virginia, and Carolina. Cultivated in 1732, by James Sherard, M.D. at Eltham.

4. Root tuberous. Root-leaves a foot long, and half an inch wide, rigid and nerved. Stems ſeveral, ſimple, from two to three feet in height, the thickneſs of the little finger, covered with a fine pubeſcence, and having many alternate leaves, reflex, rigid, nerved, with ſtraight veins, ſubhirſute, like thoſe of Tragopogon but not ending in ſo acute a point, not embracing the ſtem, all ſhorter than the root-leaves, gradually ſmaller and narrower towards the top of the ſtem, ſmooth above, hairy beneath and along the edges. Peduncles an inch long, alternate from the upper axils. Heads of flowers ſquarroſe, with leafy ſcales ſtanding out and bent back, keeled, ſubhirſute; with the florets turned outwards, from the middle of which very long two-parted ſtyles hang out, making them appear as it were bearded. Each floret is long, horn-ſhaped, and curved inwards; ſegments narrow, villoſe within, ſmooth without, purple. Seeds oblong, ſtriated, crowned with a feathered down. Receptacle naked.

Native of moſt of the provinces in North America [g].] Mr. Miller ſays that he received the ſeeds from Carolina. [The Kew catalogue aſſigns it to Virginia. In 1732 it was cultivated in the Eltham garden. It flowers in july and auguſt.

5. This differs very much from the preceding. The calyxes are ſquarroſe and blunt; the peduncles lateral, elongated, one-flowered, with a few leaflets; the leaves broad-lanceolate, not at all nerved, ſeſſile but not decurrent [h].]

Root large, tuberous. Stem one, ſtrong, channelled, three or four feet high. Leaves three inches long, and half an inch broad. Flowers purple, in a

[a] Dillenius. [b] Hort. kew. [c] Dillen. elth. [d] Hort. kew. [e] Dillenius. [f] Gærtner. [g] Dillenius. [h] Linn. ſpec.

long,

long, loose spike, at the upper part of the stem, on pretty long blunt peduncles, they have large rough calyxes, composed of wedge-shaped scales. The flowers at the top of the spike open first. It flowers in august, but the seeds do not ripen here.

Native of Virginia. Cultivated by Mr. Miller in 1759[1].

6. Stem hairy, from three to five feet in height. Flowers purple, sessile, subimbricate, in spikes. Calyxes many-flowered with the scales pressed close. Stems simple. If this be Anonymos pilosus of Walter.

Native of North America. Introduced in 1783 by Mr. William Young. It flowers in september and october[2].

7. Stem upright, two feet high, tomentose. Calyxes five-flowered, red at the tip[3].

Native of Carolina and Georgia. Introduced in 1787, by Messrs. Watsons. It flowers in october[4].

8. Root tuberous. Stem smooth, three feet high. Flowers purple, subimbricate, on short peduncles. Calyxes many-flowered, with the scales less obtuse and less converging[5].

Calyx subcylindric, imbricate, with oblong blunt scales, pressed close, glutinous as is the whole plant. Receptacle narrow, scrobiculate, smooth. Florets red, with the styles deeply bifid, and the stigmas filiform and very long. Seeds oblong, acuminate downwards, triangular or rhomb-compressed, striated, smooth, lead-bay-colour. Down the length of the seed, whitish, with numerous, equal, setaceous, tooth-ciliate rays[6].

Native of North America; where it is called *Throat-wort*, the root being discutient[7]. Cultivated in 1732, by James Sherard, M. D. It flowers from august to october[8].

Walter has five species besides the two mentioned above.

1. Anonymos graminifolius, n. 3. with a simple smooth stem, six feet high. Leaves long, like those of grass, subvillose within. Flowers purple, sessile, in spikes. Calyxes many-flowered, with blunt subconverging scales.

2. Anonymos ramosus, n. 4. Stem somewhat branched, four feet high, pubescent. Leaves lanceolate. Flowers subsessile, purple, in spikes. Calyxes many-flowered, with blunt subconverging scales.

3. Anonymos paniculatus, n. 5. Stem hairy, viscid, a foot high, simple. Leaves lanceolate, ascending, hairy. Panicle terminating. Calyxes simple, five-leaved, five-flowered. It varies with purple and with white flowers.

4. Anonymos uniflorus, n. 6. Stem short, branched. Leaves lanceolate. Flowers terminating. Peduncles one-flowered. Calyxes many-flowered with converging scales.

5. Anonymos odoratissimus, n. 7. Stem three or four feet high. Root-leaves obovate-oblong. Stem-leaves oblong-lanceolate, even. Flowers in corymbs, purple.

Gmelin has inserted these species among the Chrysocomas, as it should seem without any foundation.

LIBANOTIS. See *Athamanta, Cachrys, Ferula, Laserpitium, Ligusticum, Seseli, Siler, Thapsia.*]

LICHEN, [(*of Pliny. Λειχην of Dioscorides.*)

Lin. gen. n. 1202. *Reich. n.* 1319. *Schreb. n.* 1668. *Tournef.* 325. *Mich. gen.* 36–53. *Hedw. theor.* 120. *t.* 30, 31. Lichenoides. *Dill. muſc.* 124. Coralloides. *Dill. muſc.* 75. Ulnea. *Dill. muſc.* 56.

Claſſ. 24. 5. Cryptogamia Algæ.

Nat. order of *Algæ.*

GENERIC CHARACTER.

* *Male* flowers?

Veſicles conglomerated, extremely small, crowded or scattered on the disk, margin, or tips of the fronds.

* *Female* flowers? on the same, or on a distinct plant.

Receptacle roundish, flattish, convex (*Tubercle*), concave (*Scutella*), subrevolute affixed to the margin (*Pelta*), often differing from the frond in colour, within containing the seeds disposed in rows.

Obs. *The powder adhering to some Lichens seems rather to be of the nature of buds than of male fructifications.*

The extremely numerous species of this genus may be conveniently divided into the following sections, some of which by some authors are made distinct genera.

Lepra. Hall. a dusty crust, fructifications hardly any.

Tuberularia. Herpes. Hall. Verrucaria. Wigg. Hoffm. a leafless crust. The fructifications Tubercles.

Scutellularia. Patellaria. Hoffm. a leafless crust. Fr. Scutellæ or shields.

Collema. Hill. Nostoch. Hall. Fronds foliaceous, gelatinous. Frs. Scutellæ or shields.

Imbricaria. Squamaria. Hoffm. Fronds subfoliaceous, membranaceous, imbricated, depressed, flexile Fr. Scutellæ.

Physcia. Fronds foliaceous, membranaceous, depressed, or ascendent, tubular within. Fr. Scutellæ, sessile or pedunculated.

Lobaria. Pulmonarius. Hall. Fronds foliaceous, membranaceous, ascending, flexile. Fr. Scutellæ, sessile or pedunculated.

Cornicularia. Corniculatus. Hall. Fronds foliaceous, membranaceous, or cartilaginous, somewhat upright, narrowed, stiff, with somewhat sharp extremities. Fr. Scutellæ, sometimes terminal, transverse.

Stilta. Fronds foliaceous, subcoriaceous, scattered over beneath with white excavated points. Fr. Scutellæ, or Peltæ.

Peltigera. Wild. Antilyssus. Hall. Fronds foliaceous, coriaceous, ascending, soft. Fr. Peltæ.

Umbilicaria. Hoffm. Fronds foliaceous, upright, stiff, shielded. Fr. Scutellæ.

Pyxidium. Hill. Coralloides. Dillen. Stems upright, somewhat columnar, branchy, hollow within, with the appearance of a shrub; the axillæ often perforated. Fr. fungiform Tubercles.

Stereocaulon. Stems erect, rather columnar, simple or branchy, solid. Fr. Tubercles.

Usnea, Dill. Stems erect, or pendulous, filamentous, simple or branched. Fr. Scutellæ.

Of this very numerous genus Dr. Withering, in the third edition of his arrangements, has enumerated no fewer than 226 species, besides a great number of varieties. Most of these Mosses or rather Algæ are figured by Dillenius, Micheli, Hoffmann, Jacquin, Dickson, Withering, in Flora Danica, English Botany, or the Linnæan Transactions, &c.

Many of them are of considerable use, particularly in dyeing.

Lichen calcareus, so called because it is peculiar to Limestone rocks, when dried, powdered, and steeped in urine, is used to dye scarlet, by the Welch and the inhabitants of the Orkneys. The colour is said to be very fine.

L. Parellus. Litmus is prepared from this species. For this purpose it is gathered from the rocks in the north of England, and sent to London in casks[9].

L. tartareus. Common on limestone rocks in the north of England and in Scotland. It may be known by its peculiar pungent alkaline smell when moistened. It is gathered for the dyers by peasants, who can collect from twenty to thirty pounds a day, and sell it for a penny a pound. They choose such specimens as are of a firm dense texture, and never scrape the same rock oftener than once in five years. It is prepared for use with volatile alkali and alum, but the exact process is kept a secret by the manufacturers at Glasgow. When sold to the dyers, it appears in the form of a purple powder, called *Cudbear*, a corruption of Cuthbert, the name of the inventor. This powder being boiled with woollen yarn, communicates a purple colour to it; but not to vegetable substances. The colour is far from permanent.

[1] Hort. kew. [2] Ibid. [3] Walter. [4] Hort. kew. [5] Walter. [6] Gærtn. [7] Gron. virg. Hort. kew. [8] Withering.

L. Roccella or Orchall as an article of commerce is of very great importance, being extremely valuable for dyeing wool or ſilk any ſhade of purple or crimſon. For this purpoſe it is ſteeped in volatile alkali, commonly diſtilled from urine. In times of ſcarcity, it has been ſold at a thouſand pounds ſterling the ton. It comes chiefly from the Levant; and has lately been diſcovered to grow in the Britiſh dominions [a].

L. omphalodes dyes wool of a brown reddiſh colour, or a dull but durable crimſon, paler but more laſting than that of Orchall. It is prepared by the country people in Ireland by ſteeping it in ſtale urine, adding a little ſalt to it, and making it up into balls with lime. Wool dyed with it, and then dipped in the blue vat, becomes of a beautiful purple. With rotten oak it makes a good dark brown frize. Wool dyed with red wood or ſanders, and afterwards in this, which is called Cork, Corker or Arcell, becomes of a dark reddiſh brown. It has been uſed as a ſtyptic [b]; as has alſo L. plicatus; but theſe have long ſince given way to more active medicines [c].

L. rangiferinus, is well known to be the chief food of the Rein Deer, which will grow fat upon it; and this animal ſupplies every neceſſary of life for the contented Laplander; as is ſet forth at large by Linnæus, in his elegant Flora Lapponica.

L. vulpinus. In Norway they mix this ſpecies with powdered glaſs, and ſtrew it upon dead carcaſes to poiſon wolves. It dyes wool yellow.

L. prunaſtri has a remarkable property of imbibing and retaining odours, and is therefore the baſis of many perfumed powders.

L. iſlandicus. The Icelanders boil this in broth, or dry it and make it into bread. They likewiſe make gruel with it to mix with milk; but the firſt decoction is always thrown away, for it is apt to purge. It has lately got a reputation for curing conſumptive complaints. For which L. pulmonarius has been long in reputation; with more reaſon, I ſhould hope, than L. caninus for the cure of Hydrophobia.

L. pulmonarius dyes woollen cloth of a durable orange. In Herefordſhire they dye ſtockings with it of a durable brown.

L. caperatus. In the north of Ireland and in the Iſle of Man they dye wool with this of an orange colour. Serge dyed with it became of a lemon colour, but if previouſly infuſed and boiled in urine, of a ruſſet brown. It is probably what the people in the north of Ireland call *Stone-crottles*. It is alſo called *Arcell*, from its being put to the ſame uſe with Orchall.

L. puſtulatus. Linnæus ſays that a beautiful red colour may be prepared from this. It may be converted into an exceedingly black paint.

L. apthoſus. The country people make an infuſion of it in milk, and give it to children who have the thruſh. In large doſes it operates by purging and vomiting, and deſtroys worms [d].

Doubtleſs if more accurate and extenſive trials were made on theſe neglected plants, many other oeconomical uſes for them might be detected; or at leaſt many more of the ſpecies might be applied to the ſame purpoſes.

LICHEN. See *Anthoceros, Byſſus, Jungermannia, Marchantia, Mucor, Riccia, Targionia, Tremella.*

LICHEN-AGARICUS. See *Clavaria.*

LICHENASTRUM. See *Jungermannia, Mnium, Riccia.*

LICHENOIDES. See *Lichen, Lycoperdon, Tremella.*

LICUALA. (*The vernacular name of this Palm in Macaſſar.*)

Lin. gen. Schreb. n. 1691. *Thunb. nov. gen.* 70. *Gærtn. t.* 139. *Juſſ.* 39.

Claſſ. 25. 1. Appendix Palmæ. (Hexandria Monogynia, *Thunb.*)

Nat. order of *Palms.*

GENERIC CHARACTER.

CAL. *Perianth* three-parted, outwardly hairy, permanent.

COR. three-parted almoſt to the baſe: *diviſions* ovate, acute, concave, deciduous.

Nectary ſalverform, truncated, as ſhort again as the corolla.

STAM. *Filaments* ſix, inſerted into the nectary, upright, very ſhort. *Anthers* oblong, twin.

PIST. *Germ* ſuperior, convex, three-parted, ſulcated, ſmooth. *Style* ſimple. *Stigmas* two.

PER. *Drupe* globoſe, the ſize of a pea, one-celled.

SEED a hard *Nut.*

ESSENTIAL CHARACTER.

Flowers all hermaphrodite. *Cal.* and *Cor.* three-parted. *Nect.* ſalverform. *Drupe.*

SPECIES.

1. Licuala ſpinoſa.

Thunb. act. holm. 1782. *p.* 284. *nov. gen.* 70. *Act. batav.* 2. 469. *Gærtn. fruct.* 2. 268.

Licuala arbor. *Rumph. amb.* 1. 44. *t.* 9.

Corypha foliis palmatis. *Burm. ad Rumph.*

DESCRIPTION, *&c.*

Trunk an ell in height, ſcarcely ſo thick as the human arm, jointed, dividing at top into about ſix branches, each ſix ells long, hardly a finger in thickneſs, triangular, grooved above, flat beneath, the lower half ſharply ſerrate at the angles, and the teeth or ſpinules cloſely joined. Each of theſe has a leaf at top, ſpreading like a fan, and divided into rays, all ſeparated to the baſe: the lateral ones (fourteen) are narrow, blunt and jagged at the end, with four ſtrong nerves meeting at bottom: the middle ray is twenty-four or even twenty-ſeven inches long, and a foot wide at top; it has thirteen or fourteen ribs, alternately prominent on the upper and lower ſide, ſo that it may be folded up, like a fan. When the plant is mature, the flower-ſtalk emerges from the middle, as long as the branches or leaf-ſtalks, involved in ſheaths at the bottom, dividing into five ſmaller flower-ſtalks at top, about a hand in length, bearing green heads in three rows expanding into flowers [e].

There is no common ſpathe, and the partial ſpathes are wandering. Spadix branched. The fruit is a fleſhy, ſmall, oval drupe, retaining the calyx at ſome little diſtance: rind membranaceous, very thin, blackiſh brown; fleſh very little, pulpy, fugacious: ſhell bony, thin, brittle, whitiſh, elliptic-globular, finiſhing at top in a very ſharp ſhort dagger-point: it is alſo pointed at bottom, and ſtriated with a few bony nerves ſomewhat branching; within it is very ſmooth and one-celled. Rumphius compares the fruit with thoſe of the Bay for ſize and figure, except that it is rounder; he adds, that it continues long green, but finally turns brown or blackiſh. Seed elliptic, aſh-coloured, moderately convex on one ſide, and towards the baſe keeled with a very blunt angle in which the umbilical chord is immerſed; on the other ſide gibbous, and marked in the middle with a large teat covering the embryo, which is placed in the middle of the back [f].

Rumphius ſays, that the nut is oblong, very hard, and ſtriated longitudinally.

Native of Macaſſar and Celebes: where they make much uſe of the narrow leaves for tobacco pipes, and of the middle broad one for wrapping up fruit, &c. The wood is of little uſe, being not durable.

LIDBECKIA. See *Catula. Lancifia.* Gærtn, &c. *Cenia.* Juſſ.

LIGHTFOOTIA. (*So named by Swartz in honour of the Reverend John Lightfoot, M.A. author of* Flora Scotica.)

Lin. gen. n. 1609. *Swartz prodr.* 83.

Claſſ. 23. 2. Polygamia Dioecia.

GENERIC CHARACTER.

* *Hermaphrodite.*

CAL. *Perianth* four-leaved: *leaflets* ovate, concave, expanding.

COR. none.

STAM. *Filaments* numerous, filiform, ſeated on the receptacle, permanent. *Anthers* roundiſh.

PIST. *Germ* roundiſh. *Style* none. *Stigma* ſeſſile, ſomewhat headed, furrowed.

PER. *Berry* ovate, umbilicated, one-celled.

SEEDS from three to ſix, oblong, compreſſed, cornered, gloſſy.

[a] Engl. bot. [b] Withering. [c] Engl. bot. [d] Withering. [e] Rumphius. [f] Gærtner.

* *Males* on different individuals.

CAL. *Perianth* four-leaved: *leaflets* oblong, concave, equal, coloured.
COR. none.
STAM. *Filaments* numerous, (twenty-four), filiform, longer than the calyx, inserted into the receptacle. *Authers* roundish.
PIST. none.

Females on different individuals.

CAL. as in the male, but larger.
COR. none.
PIST. *Germ* oblong. *Style* none. *Stigma* elevated, quadrangular-headed, furrowed, with convoluted margins; permanent.
PER. *Berry oblong*, seated on a very small receptacle, umbilicated, one-celled.
SEEDS three, five, to six, as above.
OBS. *This genus is allied to* Prockia. *Sw.*

ESSENTIAL CHARACTER.

Cal. four-leaved. *Cor.* none. FEM. and FERM. *Stigma* sessile. *Berry* umbilicated, one-celled, with from three to six seeds.

SPECIES.

1. Lightfootia ferrara.
Swartz prodr. 83. *Vahl symb.* 3. 69.
Leaves oblong-ovate serrate acuminate, pedunckes lateral aggregate one-flowered.
2. Lightfootia theæformis.
Vahl symb. 3. 69.
Leaves lanceolate-elliptic serrate bluntish, pedunckes axillary subsolitary one-flowered.
3. Lightfootia integrifolia.
Vahl symb. 3. 70.
Leaves subcoriaceous oblong and obovate emarginate almost quite entire, pedunckes lateral subaggregate, one-flowered.

DESCRIPTIONS, *&c.*

1. Native of Montserrat.

2. This has the habit of the Tea shrub. Branches, and all the other parts smooth. Leaves petioled, alternate, two inches long and more, nerved and veined, sometimes emarginate, a little bent at the base to the petiole; which is very short, and a little edged by the leaf running down it. Pedunckes one or two, placed on a tubercle, an inch and half long, with a small scale towards the base. Calyx thin, membranaceous. Germ conical. Stigma sessile, flattish. Berry oblong, one-celled. Seeds three or four, smooth, shining. Native of the isle of Bourbon.

3. This is also a shrub, with round smooth branches, covered with an ash-coloured bark. Leaves petioled, an inch and more in length, alternate, sometimes but rarely obovate, scarce simply veined, acute at the base, subcoriaceous, obscurely crenulate, even. Pedunckes three to six, from the axils or at the sides of the branches, short, with a few scales on them. Flowers larger than in the other sorts. Calycine leaflets blunt. Stigma as in the preceding.

These agree with Prockia in calyx, stamens and habit, but differ in the stigma. Hermaphrodite flowers only having hitherto been observed, we are not certain that these two species are polygamous.

Gmelin has erred in referring Lightfootia oxycoccoides and subulata of L'Heritier to this genus; for they have nothing in common with Lightfootia of Swartz*.

Ligno Brasiliano simile. See *Cæsalpinia*.
Lignum Campechianum. See *Hæmatoxylum*.
——— Colubrinum. See *Strychnos*.
——— corneum. See *Garcinia*.
——— læve. See *Glabraria*.
——— moluccense. See *Croton*.
——— Sappan. See *Cæsalpinia*.
——— scholare. See *Ecbites*.
——— vitæ. See *Guaiacum*.
LIGTA. See *Astroemeria*.
LIGULARIA. See *Euphorbia*.]

* Vahl.

LIGUSTICUM, (*of Pliny,* Λιγυστικον *of Dioscorides, from Liguria in Italy.*)
Lin. gen. n. 346. *Reich. n.* 376. *Schreb. n.* 478. *Gærtn. t.* 85. *Tournef. t.* 171. *Juss.* 222.
Cicutaria. *Tournef. t.* 171.
Class. 5. 2. Pentandria Digynia.
Nat. order of *Umbellatæ* or *Umbelliferæ*.

GENERIC CHARACTER.

CAL. *Umbel universal* manifold; *Partial* manifold. *Involucre universal* membranaceous, seven-leaved, unequal: *Partial* scarcely four-leaved, membranaceous.
Perianth proper five-toothed, obscure.
COR. *universal* uniform: *florets* all fertile.
Proper of five petals, which are equal, involute, flat, entire, inwardly keeled.
STAM. *Filaments* five, capillary, shorter than the corolla. *Authers* simple.
PIST. *Germ* inferior. *Styles* two, approximated. *Stigmas* simple.
PER. none. *Fruit* oblong, cornered, five-furrowed, bipartile on each side.
SEEDS two, oblong, smooth, marked on one side with five elevated strize, flat on the other side.
OBS. *There are also male flowers observed.* R.

ESSENTIAL CHARACTER.

Fruit oblong, five-grooved on both sides. *Cor.* equal, with involute entire petals.

SPECIES.

1. Ligusticum Levisticum. *Common Lovage.*
Lin. spec. 359. *Reich.* 1. 688. *hort. cliff.* 97. 2. *upsal.* 62. *mat. med.* 80. *Woodv. med. bot.* 519. *t.* 190. *Gærtn. fruct.* 2. 28. *Sauv. monsp.* 261. *Villars dauph.* 2. 608. *Kruck. fasc. p.* 428. *Blackw. t.* 275. *Zorn. ic.* 233.
Angelica Levisticum. *Allion. pedem. n.* 1309.
Ligusticum vulgare. *Bauh. pin.* 157. — foliis apii. *Bauh. hist.* 3. 122.
Leviticum. *Riv. pent.* 60. — vulgare. *Mor. hist.* 3. 275. *f.* 9. *t.* 3. *f.* 1. *Ger.* 855. *emac.* 1008. *Park. theat.* 936. *Raii hist.* 477.
Leaves manifold, leaflets gashed at top.
2. Ligusticum scoticum. *Scotch Lovage.*
Lin. spec. 359. *Jacq. hist.* 283. *Reich.* 1. 689. *mant.* 354. *hort. cliff.* 97. 3. *fl. fasc. n.* 244. *Hudf. angl.* 117. *Lightf. scot.* 159. *Wither. arr. ed.* 3. 296. *Penn. tour.* 2. 24. *p.* 205. *Fl. dan. t.* 207. *Gmel. narv. n.* 254. *Gron. virg.* 31. *Pluk. phyt. t.* 96. *f.* 2.
Apium maritimum. *Lin. lapp. n.* 107.
Seseli scoticum. *Riv. pent. t.* 59.
S. maritimum scoticum. *Herm. par. t.* 227.
L. scot. apii folio. *Tournef. inst.* 324. *Raii syn.* 214. *Petiv. brit. t.* 26. *f.* 11.
Leaves biternate.
3. Ligusticum peloponnense. *Hemlock-leaved Lovage.*
Lin. spec. 360. *Jacq. hist.* 283. *Reich.* 1. 689. *hort. cliff.* 97. 1. *Gærtn. fruct.* 2. 29. *Hall. helv. n.* 758. *Scop. carn. n.* 338. *Sauv. monsp.* 250. *Gmel. sib.* 1. *t.* 45. *Jacqu. austr.* 5. 33. *app. t.* 13. *Gron. orient.* 84. *Allion. pedem. n.* 1322. *Kruck. fasc. n.* 429. *Villars dauph.* 2. 612.
Seseli peloponnense. *Cauer. epit.* 514. *Matth.* 753. *Tabern.* 285. *Park. theat.* 907. 13.
Cicutaria latifolia foetida. *Bauh. pin.* 161. *Raii hist.* 451. *Mor. umb. t.* 6. & *t.* 1. *f.* X. 2.
Cicuta latif. foetidissima. *Ger. emac.* 1062.
Leaves manifold-pinnate, leaflets pinnately-gashed.
4. Ligusticum austriacum. *Austrian Lovage.*
Lin. spec. 360. *Jacq. hist.* 283. *Reich.* 1. 689. *Jacqu. vind.* 221. *austr.* 2. 32. *t.* 151. *Sieg. ver.* 3. 226. *Kruck. fasc. n.* 430 *Allion. pedem. n.* 1323. *t.* 43.
L. alterum Lobelii. *Dalech. hist.* 744.
Seseli montanum cicutæ folio glabrum. *Bauh. pin.* 161. *Park. theat.* 906. *f.* 11. *Raii hist.* 452.
S. mont. 1. *Clus. hist.* 2. 193. *Ger. emac.* 1050. *n.* 3. 1051. *f.* 3.
Leaves bipinnate, leaflets confluent gashed quite entire.

[5. Ligusticum cornubiense. *Cornish Lovage.*
Lin. spec. 359. *Reich.* 1. 689. *amoen.* 4. 310. *Hudf. angl.* 118. *Wither. arr. ed.* 3. 297. *Smith ic. rar. t.* 11.
Smyrnium tenuifolium noſtras. *Raii hiſt.* 3. 254, *ſyn.* 209. *t.* 8.
Saxifraga Cornubiæ. *Petiv. brit. t.* 26. *f.* 9.
Root-leaves decompound gaſhed; ſtem-leaves ternate lanceolate entire.
6. Ligusticum peregrinum. *Parſley-leaved Lovage.*
Lin. ſpec. 360, *ſyſt.* 283. *Reich.* 1. 690, *Jacqu. hort.* 3. 13. *t.* 18.
Petroſelinum hortenſe latifolium. *Bauh. pin.* 153.
Apium hortenſe maximum. *Bauh. prodr.* 81. *Tourn. inſt.* 305.
A. hort. magnum Petroſelini ſapore. *Bauh. hiſt.* 3. 99. *Gerard illuſtr.* 14.
A. verum. *Camer. hort.* 18.
Involucre of the primary umbel ſcarcely any, of the lateral ones membranaceous at the baſe, rays ſomewhat branched.
7. Ligusticum balearicum.
Lin. ſyſt. 283. *Reich.* 1. 690. *mant.* 218.
Leaves pinnate, loweſt leaflets augmented with a leaflet.
8. Ligusticum candicans. *Pale Lovage.*
Jacq. hort. kew. 1. 348.
Leaves ſuperdecompound, leaflets wedge-form gaſhed ſmooth, univerſal involucre two-leaved ſubfoliaceous, ribs of the ſeeds membranaceous ſmooth.]

DESCRIPTIONS, *&c.*

1. Root ſtrong, fleſhy, perennial, ſtriking deep into the ground, and compoſed of many ſtrong fleſhy fibres covered with a brown ſkin, and having a ſtrong hot aromatic ſmell and taſte. Leaves large, compoſed of many leaflets ſhaped like thoſe of Smallage, but larger and of a deeper green. Stems ſix or ſeven feet high, large and channelled, dividing into ſeveral branches, each terminated by a large umbel of yellow flowers.

[General involucre ſeven-leaved, with the leaflets frequently confluent and bent back. Partial involucre one-leafed, cloven into ſeven or more parts, bent back, the ſegments augmented by a white membrane. Petals very ſmall, yelloviſh green with a yellow receptacle [a]. Fruit ovate-oblong, crowned with an obſcure rudiment of the calyx, emarginate at top and bottom, winged. Seeds of the ſame form, convex on one ſide, with three narrow approximating wings, and ſurrounded with a broader ridged not flexile margin, flat on the other ſide and marked with a raiſed longitudinal line, whiſh bay-coloured [b].

Native of the Alps of Italy, the South of France, Sileſia, &c. Cultivated in 1596, by Gerarde [c]. It flowers in June and July, and the ſeeds ripen in autumn.

[The odour of this plant is very ſtrong and peculiarly ungrateful; its taſte is warm and aromatic. It abounds with a yelloviſh gummy-reſinous juice, very much reſembling Opoponax. Its qualities are ſuppoſed to be ſimilar to thoſe of Angelica and Maſterwort in expelling flatulencies, exciting ſweat, and opening obſtructions: therefore chiefly uſed in hyſterical diſorders, and in uterine obſtructions. A tea cup full of the juice with rheniſh wine, or a decoction of the ſeeds with wine or mugwort water was by Foreſtus ſaid to be a ſecret remedy of extraordinary efficacy in ſlow or laborious parturition. The leaves, eaten as ſalad are accounted as emmenagogue. The root, which is leſs ungrateful than the leaves, is ſaid to poſſeſs ſimilar virtues, and may be employed in powder [d].]

2. This has a biennial root, (all other authors ſay, perennial) of much leſs ſize than the preceding; the leaflets are broader and ſhorter; each leaf having two or three ternate leaflets, indented on their edges. The ſtalk riſes about a foot high, and ſuſtains a ſmall umbel of yellow flowers, ſhaped like thoſe of the preceding.

[Linnæus remarks that the leaves are lucid or gloſſy underneath. The leaflets are oblong-wedge-ſhaped, entire below, above irregularly ſerrate, and ſometimes deeply cut [e].

Native of North America, Sweden, Denmark, Scotland, on rocks near the coaſt. It is much valued in the iſle of Sky. The root is reckoned a good carminative; and an infuſion of the leaves in whey, a good purge for calves. It is alſo uſed for food, either as a ſalad, or boiled as greens [f].]

3. Root thick, fleſhy, like that of Parſnep, ſtriking deep into the ground. Leaves large, deep green, when bruiſed emitting a fetid odour; the leaflets are cut into acute points. Stems three or four feet high, large and hollow, ſuſtaining large umbels of yelloviſh flowers.

[Terminating umbel fertile, lateral ones male [g]. Seeds, when ripe, curved inwards, yellow-ruſt-colour, on one ſide deeply grooved, and having three rigid ribs winging, on the other having a longitudinal groove and two very narrow reflex wings. Albumen oblong, ſtrong-ſmelling, with two depreſſed grooves on the back, and one on the belly. Embryo very ſhort, ovate-globular, milky [h].

Native of Switzerland, Auſtria, Dauphiné, Sileſia, Italy, Peloponneſus, Siberia. Cultivated in 1516, by Gerarde [i].

4. Root half a foot long or more, the thickneſs of the human thumb, often branched, yelloviſh brown on the outſide, pale within and ſpongy. Stem upright, from two to three feet in height, grooved, hollow without any partitions at the joints, the whole leafy, as thick as the thumb or finger, ſimply branched at top only. Root-leaves very large; ſtem-leaves above the middle ſeſſile. Leaflets of the general involucre lanceolate, acute, pale green with a whitiſh membranaceous edge, about half the length of the umbel, reflex, entire or variouſly gaſhed; of the partial involucre about ſix, all commonly quite entire, the outer equalling the umbellets, and not bent back. Terminating umbel of about forty rays, from four to ſeven inches in diameter. The reſt much ſmaller, all cloſe. Theſe, which are at the tops of the branches, flower later, and gradually exceed the primary umbel in height, ſurrounding it when in fruit. Flowers ſtrong-ſmelling, large, all fertile. Petals white, ſubovate, blunt iſh, a little concave, ſpreading very much, not inflex-cordate. Fruit ovate, acute. Seeds ovate, browniſh or pale, flat on one ſide, on the other convex and deeply four-grooved. The whole plant is ſmooth [k].

Native of Auſtria, Sileſia, Italy. Cultivated in 1759 by Mr. Miller [l]. It flowers from June to auguſt.

5. Root perennial, ſpindle-ſhaped. Stem from two to three feet in height, erect, branched, many-flowered, round, ſtriated, roughiſh, purple at the baſe, annual. Root-leaves ſpreading upwards, twice ternate, broader than long: leaflets oppoſite, petioled, variouſly and deeply cut, ribbed, full of net-like veins; their diviſions generally alternate, acute, decurrent, entire, rough at the margin as well as at the ribs on both ſides. Petioles roundiſh, ſtriated, rough, channelled above, dilated and ſomewhat membranous at the baſe. Stem-leaves ſolitary at each diviſion of the ſtem, ſmall, ternate: leaflets ſeſſile, lanceolate, acute, ſcarcely ever lobed: petiole dilated, a little membranous, concave, ſtriated, half embracing. Uppermoſt leaves obſolete, and conſiſting of the membranous petiole only. Umbels erect. General involucre of ſix or eight lanceolate, acute, undivided, ribbed, ſpreading leaves, much ſhorter than the umbel, permanent. Partial like the general, but ſomewhat leſs. Rays ſlender, round, ſtriated, ſmooth. Flowers white, equal, all hermaphrodite. Calyx of five ſmall roundiſh blunt concave leaves. Petals five times as large as the calyx, oblong, acute, turned in, deeply channelled on the back, equal. Stamens the length of the petals, ſpreading. Filaments awl-ſhaped. Anthers roundiſh, twin, yelloviſh. Germ roundiſh, compreſſed, ſmooth, with five ribs on each ſide, and intermediate furrows of nearly the ſame breadth. Styles half as long as the ſtamens, joined together and thick at the baſe, ſpreading in the upper part. Seeds ovate,

[a] Krocker. [b] Gaertner. [c] Hort. kew. [d] Woodville. [e] Woodward. [f] Penn. tour. Lightf. [g] Linn. [h] Gaertner. [i] Hort. kew. [k] Jacquin. [l] Hort. kew.

ſmooth,

smooth, flat on the inside, marked on the outside with five slightly elevated lines [a].

Native only of Cornwall, where it was observed by Ruddle. It grows in thickets, among bushes, and in hedges. This plant eluded the searches of modern botanists till Mr. Pennington found it in 1788 in great plenty near Bodmin. Sir Thomas Gery Cullum, Bart. gathered it there the year following. In 1793 not a single plant was to be found in the field where Mr. Pennington had discovered it, but Dr. Withering found it in another place farther from Bodmin, among furze. Cattle are so fond of it that they eat it down wherever they can get at it [b]. The root contains a yellow resinous juice [c].

6. Root biennial. Stem two feet high, rigid, angular, even. Leaves super-decompound, the upper ones ternate: leaflets three-parted: segments wedge-shaped, gashed, smooth, like those of Parsley, but larger. Petioles with a white membrane at the sides. General involucre one-third of the length of the umbel: rays linear, with a white membrane at the base on both sides, scarcely branched. The first umbel has usually no involucre. Involucels linear, the length of the umbellet. Petals yellowish, inflex-emarginate. Filaments longer than the corolla, with white anthers. Germs even, scarcely striated.

It resembles Parsley, even in smell and taste, but all the parts are thicker and more rigid [d].

Native of Portugal. Introduced in 1766, by Monf. Thouin. It flowers in June and July [e].

7. Root biennial. Stem round, somewhat striated, small in comparison with the umbel, a foot high. Root-leaves a span long: leaflets five or seven, sub-cordate, sessile, serrate, blunt, smooth, more shining underneath; the end one broader, scarcely lobed. Common petiole round, but between the leaflets channelled. Stem-leaves two or three, small, petioled, three-parted, laciniated, linear. Umbel large, stiffish. Umbellets about thirteen. Involucre many-leaved, linear, awl-shaped, reflex, the same number with the umbel. Involucels similar, with seven rays, but one or two interior. Flowers in an umbellet eight or ten, yellow, all fertile. Petals small, turned in. Seeds oblong, subcylindric, striated [f].

The genus is doubtful, the seeds not having been observed in a state of perfection [g].

Native of Majorca and Minorca, and about Rome.

8. The native place of this is not known. It was introduced here about 1780. It flowers in July and August [h].

Several other species of Ligusticum are known, but not sufficiently ascertained. Allione has L. pyrenæum, n. 1320. which Villars calls L. Seguieri, 2. 615.—L. simplex, n. 1322. Villars dauph. 2. 618. Laserpitium simplex of Linnæus—and Daucus aquilegifolia, n. 1392. t. 63. Ligusticum alterum Belgarum. Lob. obf. 447. ic. 736. Lugd. 744.

Villars has ten Ligusticums: having befides fome new species, as L. nobiflorum, which is Smyrnium nobiflorum of Allione, n. 1347. t. 72.—L. Gmelini, which has much affinity to L. austriacum—and L. cuneifolium—referred in this genus Peucedanum Silaus, Athamanta Meum, and Phellandrium Mutellina of Linnæus. In this natural clafs thefe changes may be for ever made without much advantage.]

PROPAGATION AND CULTURE.

Sow the feeds in autumn foon after they are ripe, for when they are kept out of the ground till fpring, they feldom grow the firft year. When the plants are fit to remove, tranfplant them into a moift rich border, at three feet diftance. The roots of Common Lovage will abide many years, and where the feeds are permitted to fcatter, the plants will come up without care. Several of the other forts are only biennial, and die when they have perfected their feeds. They all love a moift foil and fhady fituation.

[LIGUSTICUM. See *Angelica*, *Æthusa*, *Athamanta*, *Laserpitium*, *Phellandrium*, *Selinum*, *Sium*.

LIGUSTROIDES. See *Volkameria*.]

LIGUSTRUM, (*of Pliny and other Latin authors.*)
Lin. gen. n. 18. *Reich. n.* 18. *Schreb. n.* 23. *Gærtn. t.* 92. *Tournef. t.* 367. *Juff.* 106.
Claſſ. 2. 1. Diandria Monogynia.
Nat. order of *Sepiariæ*. *Jaſminæ*. Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, very ſmall: *mouth* four-toothed, erect, obtuſe.
COR. one-petalled, funnel-form. *Tube* cylindric, longer than the calyx. *Border* four-parted, ſpreading: *diviſions* ovate.
STAM. *Filaments* two, oppoſite, ſimple. *Anthers* upright, almoſt the length of the corolla.
PIST. *Germ* roundiſh. *Style* very ſhort. *Stigma* two-cleft, obtuſe, thickiſh.
PER. *Berry* globoſe, ſmooth, one-celled.
SEEDS four, convex on one ſide, cornered on the other.
OBS. *The berry is two-celled: the cells coated with a thin membrane. The ſeeds are two in each cell.* Gærtn.

ESSENTIAL CHARACTER.

Cor. four-cleft. *Berry* four-ſeeded.

SPECIES.

1. Liguſtrum vulgare. *Common Privet.*
Lin. ſpec. 10. *Juſſ.* 56. *Reich.* 1. 18. *hort. cliff.* 6. *fl. ſuec. n.* 5. *Gærtn. fruct.* 2. 72. *Hauſſ. aegi.* 3. *Wither. arr. ed.* 3. 10. *Curt. lond.* 5. 1. 300. *Reich. cent. n.* 4. *Hall. helv. n.* 530. *Scop. carn. n.* 4. *Pollich pal. n.* 4. *Neck. gallob.* 4. *Pallas roſſ.* 1. 2. 32. *Alſion. pedem. n.* 453. *Villars dauph.* 2. 6. *Krock. ſilef. n.* 6. *Thunb. jap.* 17. *Du Roi. harbk.* 1. 364. *Milli. fig.* 1. 162. *Blackw.* 1. 142. *Zorn. ic.* 112. *Beſl. oſt. vern. frut.* 2. 13. *f.* 2.
L. germanicum. *Bauh. pin.* 475.
L. *Bauh. hiſt.* 1. 528. 2. *Ger.* 1208. *emac.* 1394. *Matth.* 170. *Fuchſ.* 480. *Raii hiſt.* 1603.
L. vulgare. *Trag.* 1005. *Park. theat.* 1446. 1.
Phillyrea. *Dod. pempt.* 775.
β. L. italicum. *Italian Evergreen Privet.*
Mill. dict. n. 2.
L. myrtifolium italicum. *Bauh. pin.* 478. *prodr.* 152. *Park. theat.* 1447. 2. *Raii hiſt.* 1603.
Leaves ovate obtuſe, panicle ſimply trichotomous.
[2. Liguſtrum japonicum. *Broad-leaved Privet.*
Thunb. jap. 17.
L. latifolium. *Lin. ſyſt.* 56.
Leaves ovate acuminate, panicle decompoundedly trichotomous.
3. Liguſtrum ſinenſe.
Lour. cochinch. 19.
Leaves lanceolate, racemes oblong lateral and terminating.

DESCRIPTION, *&c.*

1. Common Privet is a ſhrub, uſually about ſix feet in height, branched, the bark of a greeniſh aſh colour, irregularly ſprinkled with numerous prominent points: branches oppoſite, the young ones flexible and purpliſh. Leaves oppoſite, on very ſhort petioles, ſmooth on both ſides, perfectly entire, the lower ones at the bottoms of the ſmall branches leaſt. Panicle about two inches in length, cloſe and ſomewhat pyramidal; branches and pedicels appearing villoſe when magnified. Corolla white, but ſoon changing to a reddiſh brown. The flowers are ſweet-ſcented [a].

Berry ſuperior, fleſhy, ſubglobular, ſhining, of ſo dark a purple as to ſeem black. Pulp ſucculent, purpliſh red. Seeds two, rarely one, in each cell, oblong, convex on one ſide, angular on the other, ſmooth, ſhining, dark purple, with a whitiſh umbilicus at top [b].

Privet is found wild in moſt parts of Europe, and in Japan; in woods and hedges: and flouriſhes beſt in a moiſt ſoil. It flowers in July, and the berries ripen in autumn.

Priver, in old Engliſh authors is alſo called Prim, Print, and Primprint. I preſume from its regular appearance, when clipped, as it was formerly. In German it is *Liguſter*. The ſame name obtains in Dutch, Daniſh and Swediſh. In French it is *Troene*. In Ita-

[a] Smith. [b] Wither. arr. [c] Smith. [d] Linn. [e] Hort. kew. [f] Linn. mant. [g] Linn. ſyſt. [h] Hort. kew.

[a] Curtis. [b] Gærtner.

lian, *Ligustro*. In Spaniſh, *Albena*. In Portugueze, *Alfena*. In Ruſſian, *Schoſt*.

In point of utility and ornament few ſhrubs exceed the common Privet. Its chief uſe is to form ſuch hedges as are required in dividing gardens for ſhelter or ornament; and for this the Italian or Evergreen Privet is uſually preferred. It bears clipping well, is not liable to be diſfigured by inſects, and having only fibrous roots, it robs the ground leſs than almoſt any other ſhrub.] It is one of the few plants that will thrive in the ſmoke of London, though it ſeldom produces any flowers in the cloſer parts after the firſt year. It alſo grows well under the drip of trees.

[Privet is not apt to be eaten by cattle: according to Linnæus, kine, ſheep and goats eat it, but horſes refuſe it. Sphinx Liguſtri or Privet Hawk Moth, and Phalæna Syringaria, feed on it in the caterpillar ſtate; and Meloe veſicatorius, Cantharides or Bliſter Beetle is found on it[y]. The leaves are bitter and ſlightly aſtringent. The wood is very hard, and fit for the turner. From the pulp of the berries a roſe-coloured pigment may be prepared. With the addition of alum, they dye wool and ſilk of a good durable green: for this purpoſe they muſt be gathered as ſoon as they are ripe[z]. They continue on the ſhrub till ſpring, and in times of ſcarcity are eaten by different ſorts of birds, particularly the Bullfinch[a].

Privet varies in many reſpects. The leaves ſometimes grow by threes, and ſometimes are enlarged at the baſe;] they are variegated with white and alſo with yellow; they frequently continue green great part of the winter, like the Italian Privet. [The regular number of ſtamens is two, but ſometimes there are three or four in a flower. And it has been found with white berries. Thunberg ſays that in Japan the leaves are ſomewhat broader and more blunt than in the European ſhrub.

β. The Italian or Evergreen variety is made a diſtinct ſpecies by Miller.] It riſes with a ſtronger ſtem; the branches are leſs pliable, and grow more erect; their bark is of a lighter colour; the leaves are much larger, end in acute points, are of a brighter green, and continue till they are thruſt off by the young leaves in the ſpring: the flowers are rather larger, and are not often ſucceeded by berries in England.

[2. Stem arboreous, very much branched, a fathom and half in height. Branches oppoſite, roundiſh, wrinkled, aſh-coloured, from upright ſpreading: twigs rod-like, reſembling the branches. Leaves oppoſite, entire, from ſpreading upright, grooved along the middle above, paler underneath, with a raiſed line, ſmooth, an inch wide, an inch and half long. Petioles round, grooved above. Panicle ſpreading. Under each diviſion, two oppoſite ſmooth bractes, the lower lanceolate, the upper briſtle-ſhaped. Berry the ſize of a pea.

Native of Japan, where it flowers in june and july[b].

3. This is a ſmall tree, about eight feet in height, with diffuſed ſtraight branches. Leaves lanceolate, quite entire, tomentoſe, petioled, oppoſite, dark green. Flowers white, ſmall. Calyx cup-ſhaped, white. Corolla bell-ſhaped, ſpreading; with lanceolate ſegments. Berry very ſmall, brown, containing four ſeeds.

Native of China, about Canton[c].]

PROPAGATION AND CULTURE.

1. This ſhrub is eaſily propagated by laying down the tender ſhoots in autumn. In one year's time they may be removed where they are to remain, or planted in a nurſery for two or three years, where they may be trained for the purpoſes deſigned.

Alſo by ſuckers, which it ſends forth in great plenty. But theſe are not eaſily kept within bounds, nor do they riſe ſo high as thoſe which are increaſed by layers.

Thirdly by cuttings, planted in the autumn on a ſhady border, and in a loamy ſoil.

But the ſtrongeſt and beſt plants are raiſed from ſeeds. Gather the berries when ripe, put them into a pot with ſand, and bury them in the ground, as is practiſed with Holly berries and Haws. After they have laid a year in the ground, take them up and ſow them in the autumn on a border expoſed to the eaſt, where the plants will come up the following ſpring.

The varieties with ſtriped leaves may be increaſed by budding or inarching upon the plain ſort; or by laying down the branches, but they ſeldom ſhoot to faſt as to produce branches proper for this purpoſe. Being more tender, they ſhould have a dry ſoil and a warm ſituation. In a rich ſoil, they ſoon loſe their variegation, and become plain.

The Italian or Evergreen Privet, is now generally found in the nurſeries inſtead of the common one. It is equally hardy, and will thrive in almoſt any ſituation. It is increaſed in the ſame manner; but as it ſeldom produces berries here, they muſt be procured from Italy.

[LIGUSTRUM. See *Olea*, *Ophioxylum*, *Syringa*, *Valkameria*.]

LILAC. See *Syringa*.

[LILIAGO. See *Anthericum*.]

LILIASTRUM. See *Anthericum*.]

LILIO-ASPHODELUS. See *Crinum* and *Hemerocallis*.

LILIO-HYACINTHUS. See *Scilla*.

LILIO-NARCISSUS. See *Amaryllis* and *Pancratium*.

LILIUM. (*of Pliny and other Latin authors*. Gr. Λειριον.) *Lin. gen. n.* 410. *Reich. n.* 443. *Schreb. n.* 558. *Gaertn. t.* 16. *Tournef. t.* 195. *Juſſ.* 49. Lilium. *Rev.* 30.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Coronariæ*. *Lilia*, Juſſ. Roy, &c. *Lilea*, Saliſb.

GENERIC CHARACTER.

CAL. none.

COR. ſix-petalled, bell-ſhaped, narrowed beneath. *Petals* upright, incumbent, obtuſely carinated on the back, gradually more expanding, wider; with thick, reflex, obtuſe *tips*.

Nectary: a longitudinal, tubular line, engraven on each petal from the baſe to the middle.

STAM. *Filaments* ſix, awl-ſhaped, upright, ſhorter than the corolla. *Anthers* oblong, incumbent.

PIST. *Germ* oblong, cylindric, ſtriated with ſix furrows. *Style* cylindric, length of the corolla. *Stigma* thickiſh, triangular.

PER. *Capſule* oblong, ſix-furrowed, with a three-cornered, hollow, obtuſe *tip*; three-celled, three-valved: the *valves* connected by hairs diſpoſed in a cancellated manner.

SEEDS numerous, incumbent in a twin order; flat, outwardly ſemi-orbicular.

OBS. *The Nectary in ſome is bearded, in others beardleſs. Petals in ſome totally revolute, in others not ſo.*

ESSENTIAL CHARACTER.

Cor. ſix-petalled, bell-ſhaped; with a longitudinal nectareous line. *Caps.* the valves connected by cancellated hairs.

SPECIES.

1. Lilium candidum. *Common White Lily.* *Lin. ſpec.* 433. *Reich.* 2. 43. *hort. cliff.* 120. 1. *upſ.* 80. *mat. med.* 93. *Woodv. med. bot.* 279. *t.* 101. *Hall. helv. n.* 1231. *Gron. orient.* 105. *Thunb. jap.* 133. *Ludw. elſ. t.* 190. *Knipb. cent.* 7. *n.* 4. *Knorr. del.* 1. *t.* L. *Blackw. t.* 11. *Rob. it.* 201. *Curt. magaz.* 278. *Dod. pempt.* 197. *Camer. epit.* 570.

L. album. *Fuchſ.* 364. *Ger.* 146. 1. *emac.* 190. 1. *Beſl. eyſt. vern.* 5. 9. 1. 3. *Raii hiſt.* 1109.—vulgare. *Bauh. hiſt.* 2. 685. *Park. parad. t.* 37. *f.* 4.—flore erecto & vulgare. *Bauh. pin.* 76. *Mor. hiſt. ſ.* 4. *t.* 21. *f.* 13.

β. L. peregrinum. *Nodding-flowered White Lily.* *Mill. dict. n.* 2.

L. album, floribus dependentibus ſ. peregrinum. *Bauh. pin.* 76.

L. alb. byzantinum. *Cluſ. Park. parad.* 39. *Ger.* 146. 2. *emac.* 190. 2.

Sultan Zambach & Martagon Conſtantinopolitanum. *Cluſ. hiſt. Beſl. eyſt. vern.* 5. 10. 1, 3.

L. alb. ſyriacum Rauwolfii. *Bauh. hiſt.* 2. 687.

γ. L. cauſe

y Curtis. z Withering. a Curtis. b Thunberg. c Loureiro.

γ. L. caule plano compresso. *Gron. orient.* 106.
Lilii albi pulchri & ignoti species. *Bauh. pin.* 76.
Leaves scattered, corollas bell-shaped smooth within.
[2. Lilium japonicum. *Japan White Lily.*
Thunb. jap. 133. *Kæmpf. amoen.* 5. 871.
Leaves scattered lanceolate, corollas drooping subcampanulate.
3. Lilium Catesbæi. *Catesby's Lily.*
Curt. magaz. 259. *Lin. syst. ed.* 13. *Gmel.* 545. *Walt. carol.* 123.
L. spectabile. *Salisb. ic. rar. t.* 5. *prodr.* 238.
L. carolinianum flore croceo, &c. *Catesb. carol.* 2. *t.* 58.
Leaves scattered lanceolate, corolla upright bell-shaped, petals with claws.]
4. Lilium bulbiferum. *Bulb-bearing* or *Orange Lily.*
Lin. spec. 433. *syst.* 324. *Reich.* 2. 43. *hort. cliff.* 120. 2. *upsal.* 80. *Gmel. fib.* 1. 41. *Gron. orient.* 104. *Jacqu. austr.* 3. 14. *t.* 226. *Scop. carn. n.* 404. *Hall. helv. n.* 1232. *Villars dauph.* 2. 275. *Krock. silef. n.* 319. *Knorr. del.* 1. *t.* 1. L. 4. *Curt. magaz.* 36.
α. L. purpureo-croceum majus. *Bauh. pin.* 76. *Mor.* 4. 21. 17. *Besl. eyst. vern.* 5. 6, & 8.
L. rubens vel croc. majus. *Bauh. hist.* 2. 688. *Raii hist.* 1110.
L. aureum. *Ger.* 148. *emac.* 192. *Park. parad.* 38. *t.* 37. *f.* 3.
β. L. purpureo-croceum, flore pleno.
L. crocatum fl. pleno. *Besl. eyst. vern.* 5. 5. 1.
γ. L. purpureo-croceum minus. *Bauh. pin.* 77.
L. rubens vel croc. minus. *Bauh. hist.* 2. 689. *Raii hist.* 1110.
L. pumilum crocatum. *Park. parad.* 36.
L. purpureum minus. *Ger. emac.* 194. 6.
δ. L. phœniceum. *Bauh. pin.* 77. *Raii hist.* 1110.—dilutum. *Bauh. hist.* 2. 690.
L. rubrum. *Ger.* 148. 2. *emac.* 192. 2.
ε. L. bulbiferum latifolium majus. *Bauh. pin.* 77. *Raii hist.* 1110.
L. bulb. majus. *Bauh. hist.* 2. 690. *Park. parad.* 38. 3.
L. crocatum bulb. *Ger. emac.* 193. *Besl. eyst. vern.* 5. 7. 1.
ζ. L. bulbif. angustifolium. *Bauh. pin.* 77.
ε. L. bulbif. minus. *Bauh. pin.* 77. *Park. parad.* 38. 1. *Raii hist.* 1111.
L. bulb. repens. *Bauh. hist.* 2. 691.
L. crocatum fecundum caulem bulbulis donatum. *Ger. emac.* 194. 5.
L. humile. *Mill. dict. n.* 4.
η. L. bulbif. incanum. *Bauh. pin.* 77. *Bauh. hist.* 2. 691.
L. crocatum latifolium. *Ger.* 149. *emac.* 193.
Leaves scattered, corollas bell-shaped erect, rugged within.
5. Lilium pomponium. *Pomponian Lily.*
Lin. spec. 434. *Reich.* 2. 44. *hort. cliff.* 120. 4. *upsal.* 81. *Mill. fig. t.* 165. *f.* 2. *Knoph. cent.* 2. *n.* 40. *Knorr. del.* 1. *t.* 4. *Gmel. fib.* 1. 42. *n.* 9. *Amm. ruth. n.* 139. *Thunb. jap.* 134. *Lour. cochinch.* 207. *Villars dauph.* 2. 276.
α. L. rubrum angustifolium. *Bauh. pin.* 78. *Ger. emac.* 199. 1.
L. rubrum præcox. *Clus. hist.* 1. 133. *Raii hist.* 1113. *Besl. eyst.* 3. 4. 1.
L. præcox nutante flore rubro. *Bauh. hist.* 2. 696.
β. L. miniatum odoratum angustifolium. *Bauh. pin.* 79. *Rudb. elys.* 2. 176. *f.* 3. *Raii hist.* 1114.
Martagon Pomponeum. *Besl. eyst. est.* 3. 8. 1.—
f. L. rubrum præcox vel L. macedonicum. *Park. parad.* 34. *t.* 32. *f.* 3.
γ. L. brevi & gramineo folio. *Bauh. pin.* 79.
L. rubrum præcox 3. angustifolium. *Clus. hist. Raii hist.* 1113.
L. præc. nutante fl. rubro tenuifolium. *Bauh. hist.* 2. 696.
L. angustifolium. *Mill. dict. n.* 6.
Leaves scattered awl-shaped, flowers turned back, corollas rolled back.
6. Lilium chalcedonicum. *Scarlet Martagon Lily.*
Lin. spec. 434. *syst.* 324. *Reich.* 2. 44. *hort. cliff.* 120. 3. *upsal.* 81. *Scop. carn. n.* 403. *Jacqu. austr. app. t.* 20. *Knoph. cent.* 3. *n.* 54. *Curt. magaz.* 30.
α. L. byzantinum miniatum. *Bauh. pin.* 78. *Raii hist.* 1113.—rubrum f. min. byzantinum. *Clus. hist.* 1. 131.
L. fl. min. nutante. *Bauh. hist.* 2. 695.
L. rubrum byzant. f. Martagon constantinopolitanum. *Park. parad.* 34.
L. bizantinum. *Ger.* 151. *emac.* 197. 1.
β. L. byzant. min. polyanthos. *Bauh. pin.* 78. *Ger. emac.* 198. *f.* 4.
γ. L. purpureo-sanguineum, flore reflexo. *Bauh. pin.* 78. *Raii hist.* 1113. *Ger. emac.* 197. *f.* 2.
Hemerocallis chalcedonica. *Leb. ic.* 169. *Besl. eyst. est.* 3. 5. 1, 2.
Leaves scattered lanceolate, flowers turned back, corollas rolled back.
7. Lilium superbum. *Great yellow Martagon Lily.*
Lin. spec. 434. *Reich.* 2. 45. *Trew. Ehret.* 2. *t.* 11. *Catesb. car.* 2. *t.* 56. *Thunb. jap.* 134.
Leaves scattered lanceolate, flowers in a branched pyramid turned back, corollas rolled back.
8. Lilium Martagon. *Purple Martagon Lily.*
Lin. spec. 435. *syst.* 324. *Reich.* 2. 45. *hort. cliff.* 120. 3. *upsal.* 81. *Gmel. fib.* 1. 44. *Jacqu. austr.* 4. 27. *t.* 351. *Scop. carn. n.* 402. *Pollich pal. n.* 331. *D'Alsa arrag. n.* 301. *Krock. silef. n.* 518. *Villars dauph.* 2. 276. *Hall. helv. n.* 1233.
α. Martagon. *Canter. epit.* 617.
L. flor. reflexis, montanum. *Bauh. pin.* 77. *Raii hist.* 1112.
L. sylvestre. *Dod. pempt.* 201.
L. fl. nutante ferrugineo. *Bauh. hist.* 2. 692.
L. montanum minus. *Ger.* 150. 8. *emac.* 196. 2.
β. L. flor. reflex. alterum hirsutum. *Bauh. pin.* 78.
L. mont. majus. *Ger.* 150. 7. *emac.* 196. 1.
L. hirsutum. *Mill. dict. n.* 10.
Leaves in whorls, flowers turned back, corollas rolled back.
9. Lilium canadense. *Canada Martagon Lily.*
Lin. syst. 324. *Reich.* 2. 45. *mant.* 364. *Thunb. jap.* 135.
L. angustifolium, flore flavo maculis nigris distincto. *Tournef. inst.* 371. *Barr. rar.* 778. *t.* 125.
L. Martagon canadense maculatum. *Mor. hist.* 2. 408. *f.* 4. *t.* 20. *f.* 9. *Rudb. elys.* 2. 177. *f.* 5.
L. f. Martag. canad. flor. magnis flavis non reflexis. *Catesb. car.* 3. *t.* 11. *Rob. ic.* 206.
Martagon f. Lilium canadense maculatum. *Park. parad.* 33. *t.* 32. *f.* 2.
Leaves in whorls, flowers turned back, corollas revolute-bell-shaped.
10. Lilium camschatcense. *Kamtschatka Lily.*
Lin. spec. 435. *Reich.* 2. 45. *Lour. cochinch.* 207. *amœn.* 2. 348.
Leaves in whorls, flower erect, corolla bell-shaped, petals sessile.
11. Lilium philadelphicum. *Philadelphian Martagon Lily.*
Lin. spec. 435. *Reich.* 2. 46. *Mill. fig.* 110. *t.* 165. *f.* 1. *Thunb. jap.* 135.
Leaves in whorls, flowers erect, corolla bell-shaped, petals with claws.

DESCRIPTIONS, *&c.*

Bulb scaly, or as Jussieu describes it, tuberous imbricated with the bases of the leaves. Stem leafy, simple. Leaves simple, entire, alternate or in whorls. Flowers spathaceous, in a spike or a fort of panicle, hanging down in most of the species[a].

1. The common White Lily has a large bulb, from which proceed several fucculent fibres. Stem stout, round, upright, usually about three feet in height. Leaves numerous, long, narrow pointed, smooth, sessile. Flowers large, white, terminating the stem in a cluster on short pedunicles. Petals within of a beautiful shining white; on the outside ridged and less luminous[b].

Native of the Levant. Linnæus assigns it to Syria. Thunberg gives it as a native of Japan, and observes that the corolla is there near a span in length, and

[a] Jussieu. [b] Woodville.

that it varies with a villofe ſtem. Haller inſerts it in the Swiſs Flora: it is not indigenous there, but muſt have eſcaped from a garden. It flowers in June and july, and has been cultivated in England time immemorial. In Gerarde's time (1597) it was in moſt gardens.

The flowers of the Lily were formerly conſidered as antiepileptic and anodyne; a diſtilled water of them was employed as a coſmetic; and oil of Lilies was ſuppoſed to poſſeſs anodyne and nervine powers; but their odorous matter, though very powerful, is totally diſſipated in drying, and entirely carried off in diſtillation either with ſpirit or water, and no eſſential oil can be obtained from them. The roots only are now in uſe: they are extremely mucilaginous, and are chiefly employed in emollient and ſuppurating cataplaſms, boiled with milk or water. Phyſicians however are generally of opinion that bread or meal poultices poſſeſs every advantage of thoſe prepared from the Lily root.]

The principal varieties of the White Lily are,

1. With the flowers ſtriped or blotched with purple.
2. With variegated or ſtriped leaves, or with the leaves edged with yellow.
3. With double flowers.
4. With pendulous flowers, which Miller and others conſider as a diſtinct ſpecies.

The firſt variety has not been in England much longer than the year 1729. It is now become common, but the purple ſtain giving the flower a dull colour, the common white is generally preferred.

The ſecond variety is chiefly valued for its appearance in winter and ſpring: for the leaves coming out early in the autumn, ſpreading themſelves flat on the ground, and being finely edged with a broad yellow band, make a pretty appearance during the winter and ſpring months. It flowers earlier than the plain ſort.

The third variety is of little value, becauſe the flowers never open well, unleſs they are covered with glaſſes; nor have they any of the rich odour of the common ſort.

The fourth variety (β) came originally from Conſtantinople. The ſtalk is much more ſlender; the leaves are narrower and fewer in number; the flowers not quite ſo large, and the petals more contracted at the baſe; they always hang downwards.

The ſtalks are ſometimes very broad and flat (γ), appearing as if two or three were joined together: when this happens, they ſuſtain from ſixty to one hundred flowers, and ſometimes more. This however is merely accidental, for the ſame root ſcarcely ever produces the ſame two years.

[2. Stem round, ſmooth and even, two feet high. Leaves alternate, petioled, acuminate, margined, ſmooth, a hand and half in length, paler underneath, three-nerved or five-nerved. Flower terminating, reflex and hanging down. Corolla white, a hand in diameter. It differs from the preceding, to which it is allied, in having a weaker ſtem, ſuſtaining only one flower; and fewer leaves on the ſtem, remote, very long, petioled and nerved.

Native of Japan[a].

3. Of the Lilies cultivated in this country this is one of the leaſt, the whole plant when in bloom being frequently little more than a foot high. In its native ſoil it is deſcribed as growing to the height of two feet[b]. The ſtalk is terminated by one upright flower. It is purple, ſlender, upright, round, ſmooth with a ſlight glaucous bloom on it, ſolid, ſtiffiſh. Root-leaves few, often only on the barren plant, on long petioles. Stem-leaves numerous, alternately ſcattered, ſeſſile, curved back, narrow-lanceolate, the upper ones gradually more ovate-lanceolate, quite entire, blunt with a purple tip, even on both ſides, ſlenderly nerved, flat, a little fleſhy, ſhrivelling. The flower has no ſcent. Pedunele an inch or an inch and half in length, thicker at top. Claws of the petals pale green, curved in, alternately broader and narrower; borders duſky yellow on the outſide with ſaffron edges, within at the middle of the baſe yellow with dark-ruſt-coloured broad ſpots, the reſt bright ſaffron, thrice the length of the claws, alternately broader and narrower, revolute, ovate-acuminate, quite entire, blunt, even on the outſide with a very fine bloom, within ſmooth. Filaments duſky red, approximating at bottom, recurved a little at top, compreſſed, gradually attenuated, ſmooth. Anthers red, narrow-elliptic, two-celled. Pollen orange-coloured. Germ pale green, narrow, obſcurely three-cornered, even. Style red, about the ſame length with the filaments, three-cornered, ſmooth, a little thickened below the tip. Stigma deep red, club-ſhaped with three obſolete perforations at the corners, very minutely pubeſcent[c].

This Lily was firſt obſerved by Cateſby on open moiſt ſavannas in many parts of Carolina. He ſays that the bulb is about the ſize of a walnut; that the petals turn back in a graceful manner, and are tapering, terminating in points, and edged with ſmall indentures, and that the whole flower is variouſly ſhaded with red, orange, and lemon colours.

Mr. Curtis, to whom roots were ſent from South-Carolina by Mr. Robert Squibb, at the cloſe of the year 1787, informs us, that it varies conſiderably in the breadth of its petals, in their colour and ſpots; and that it flowers uſually in july and auguſt.

4. Bulb ſubovate, conſiſting of thick white looſely imbricate ſcales, putting out a few thick fibres from the bottom. Stem upright, a foot and half high, ſtriated-angular, ſmooth or ſlightly hairy, with numerous ſcattered leaves, the upper ones ſpreading out horizontally, acute, quite entire, obſoletely hirſute, a little rough to the touch, dark green, ſlightly nerved, ſeſſile, lanceolate-linear, three or four inches long: each, excepting the lower, frequently producing a roundiſh ſhining pale-green bulb or two in the axil. Pedunele terminating, round, thick, ſomewhat villoſe; either ſolitary, or two, three or four together, forming a ſort of umbel; ſome naked, others having a bracte or two. Flower without ſcent, red-orange within, pale-orange on the outſide: all the petals from the baſe to beyond the middle are rugged with little ſcales and apophyſes, with a few black dots; the border is ſpreading, but not rolled back; three alternate ones are a little more exterior, lanceolate, narrower, almoſt equally drawn to a point at both ends, the nectareous tubular floccoſe line occupying the whole lower part; the other three, from a channelled claw unfold into a broad-ovate lamina, and have the groove of the nectary continued to the very top. Filaments red. Anthers dark purple. Style red. Capſule ovate, with browniſh ſeeds[d].

Such is the deſcription of the Orange Lily, as it is found wild in Auſtria. It grows in Italy and other ſouthern regions of Europe; in Siberia alſo and Japan. It varies much in ſize, leaves and flowers. Mr. Miller mentions the following varieties.]

1. Orange Lily with double flowers. β.
2. Orange Lily with variegated leaves.
3. Smaller Orange Lily. γ.
4. Bulb-bearing fiery Lily. ε, ζ.

Seldom riſing more than half the height of the others; the leaves narrower; the flowers ſmaller, and of a brighter flame-colour, few in number and more erect. They come out a month before thoſe of the common ſort, and the ſtalks put out bulbs at moſt of the axils, which, if taken off when the ſtalks decay, and planted, will produce plants. There are ſeveral ſubordinate varieties of this: as

1. The great broad-leaved. ι.
2. The many-flowered.
3. The ſmall. κ. *Mill. n. 4.*
4. The hoary bulb-bearing Lily. ο.
5. [This has a pretty large yellow ſcaly root, from which ariſes an upright ſtalk near three feet high, with long narrow leaves, almoſt triangular, having a longitudinal ridge on their under ſide; they are deep green and terminate in acute points. The upper part of the ſtalk divides into four or five pedunels, each ſuſtaining a ſingle flower of a fine carmine colour, with

[a] Woodville. [b] Thunberg. [c] Curtis. [d] Salisbury. [e] Jacquin.

a few dark ſpots ſcattered over it. They appear in July, and when the ſeaſon is not hot, they continue a conſiderable time in beauty [a].

Mr. Miller makes two ſpecies of this. The common Red Martagon juſt deſcribed, and what he calls the Martagon of Pompony [b]: the ſtalks of which riſe higher, the leaves ſhorter, and ſet cloſer upon the ſtalks; each ſtalk ſuſtaining from fifteen to thirty flowers, of a very bright red, approaching to ſcarlet. The peduncles are very long, ſo that the flowers ſpread out very wide. [Parkinſon ſays that he has reckoned ſixty and one hundred flowers on a plant, and that they are of a pale or yelloviſh red. He mentions ſeveral varieties.

Linnæus diſtinguiſhes this ſpecies by its linear, ſharp, three-ſided, channelled leaves, and the chink of the nectary being very much toothed. But Thunberg remarks, that in Japan the leaves are awl-ſhaped, linear and lanceolate on different individuals, and that the corollas in his ſpecimens were ſcarcely revolute.

Native of the Pyrenees, Siberia, Japan and China. It was cultivated in 1629, as appears from Parkinſon [c].]

6. Scarlet Martagon is from three to four feet in height; the leaves are much broader than thoſe of the preceding, and appear as if they were edged with white; they are placed very cloſely upon the ſtalks. The flowers are of a bright ſcarlet, and ſeldom more than five or ſix in number. It flowers late in July, and in cool ſeaſons continues in beauty great part of auguſt.

[Linnæus remarks, that the raceme, before the flowers open, is ſcarcely curved in, as in the preceding and next following ſpecies, and that the ſtem is clothed with cluſtered leaves to the very top.

Mr. Curtis obſerves, that it varies in the number of flowers, from one to ſix, and that the colour in ſome is of a blood red. Jacquin deſcribes the ſmell as diſagreeable; whilſt Scopoli compares it to that of an orange. This ſpecies, not being the Martagon of Linnæus, Mr. Curtis, to avoid confuſion, calls it Chalcedonian Lily.

Native of the Levant, and of the mountains between Carniola and Carinthia; if Jacquin's plant be the ſame with that from the Eaſt.

Cluſius informs us, that it was brought from Conſtantinople to Vienna, before his arrival in that city.—It was cultivated here in 1596, by Gerarde [d].

There are ſome varieties of this in the ſize and colour of the flowers, which are ſometimes of a blood red.

7. Stem round, very ſmooth and even, panicled at top, two feet high and more. Branches alternate, diverticating, upright, like the ſtem, reflex at top, flower-bearing. Stem-leaves alternate, ſubpetioled, folded together at the baſe, ovate-oblong, acute, quite entire, ſmooth, five-nerved beneath, ſpreading. One flower at the end of each branch. Corollas large and handſome. Petals oblong, acute, white with large purple ſpots and ſmaller black ones from the middle to the baſe: nectareous keel bearded [e].

Gouan aſſerts, that the leaves are conſtantly three-nerved.

Cateſby ſays, that the flowers grow alternately on long footſtalks, and that they are of an orange and lemon colour, thick ſpotted with dark brown.]

According to Miller, it riſes with a ſtrong ſtalk from four to five feet high. The flowers are produced in form of a pyramid, and when the roots are ſtrong, there are forty or fifty flowers on a ſtalk; they are large, yellow with dark ſpots, and make a fine appearance, but ſmell ſo diſagreeably, that few perſons can endure to be near them. They appear at the end of june.

[Native of North America. Introduced into England from Penſylvania by Peter Collinſon, Eſq. [a] in 1738 [b].]

8. This riſes with a ſtrong ſtalk from three to four feet high. Leaves broad. Flowers dark purple, with ſome ſpots of black; they are produced in looſe ſpikes, appear in june, and have a diſagreeable odour when near, but not ſo offenſive as the preceding.

[Bulb compoſed of lanceolate, yellow, looſe ſcales, with thick, long, whitiſh fibres at bottom. Stem ſtraight, round, ſhining, from a foot and half to four feet in height, at the top of the bulb furniſhed with rooting fibres in whorls, pale green at bottom, the reſt having black ſpots ſcattered over it; above and below the leaves are ſcattered, but in the middle they are in whorls; lanceolate, acute, ſomewhat nerved, quite entire, ſubpetioled: the ſtem terminates in a looſe raceme, many-flowered, few-flowered, or ſometimes one-flowered only. Peduncles purple, dotted with black, with lanceolate ſharp bractes, two to the lower, and one to the upper flowers. Petals purple or pale, more or leſs ſpotted with black on both ſides, the three outer hirſute with a raiſed line along the middle. Filaments and ſtyle pale. Anthers bay with an orange-coloured pollen. Germ green. Capſule brown [c].

Native of the South of Europe, and Siberia.—Cultivated in 1596, by Gerarde [d].]

8. The leaves of this are narrower; the whorls ſtand farther aſunder; the leaves and ſtalks are ſomewhat hairy, and the buds of the flowers are covered with a ſoft down; the flowers are of a brighter colour, with few ſpots, and come out earlier, though the ſtalks appear much later above ground. It flowers early in june. Mr. Miller makes a diſtinct ſpecies of it under the name of L. hirſutum or Red Martagon. Theſe flowers in old gardens are known by the name of Turk's Caps.

9. Bulbs oblong and large. Stems from four to five feet high. Leaves oblong, pointed. Flowers large, yellow ſpotted with black, ſhaped like thoſe of the Orange Lily, and the petals not turned back ſo much as in the other Martagons. They come out in the beginning of auguſt, and when the roots are large, in great numbers, making a fine appearance. There is a variety of this with larger deeper-coloured flowers.

[Linnæus obſerves that the leaves are marked with three lines, and that the corollas are rolled back, yellow at the baſe with black dots.

On the ſummit of the ſtem, according to Cateſby, are about twelve pendulous flowers on long arched peduncles; the petals are reflected very little, not more than thoſe of the common White Lily.

Thunberg ſays that the leaves are lanceolate, nerved beneath, upright, an inch in length; corolla bell-ſhaped, bent back at the tips only, purple ſpotted.

This, ſays Parkinſon, was brought into France from Canada by the French colony, and thence into us, in 1629. It flowers in july and auguſt [a]. It is found in other parts of North America; for Cateſby ſays it was ſent to Mr. Collinſon from Penſylvania, and flowered ſeveral years in his garden. Thunberg alſo obſerved it in Japan.

10. Bulb roundiſh, ſmall. Stem quite ſimple round, even, a foot high. Leaves lanceolate or lanceolate-linear, ſeſſile, four or ſix, ſtriated, rather blunt, even, upright; two or three of the upper ones uſually alternate, narrower. Flowers terminating, few, an inch and half in diameter, on very ſhort, naked, almoſt upright peduncles. Petals ovate, blunt, even, ſtriated, purple, not rolled back, attenuated at the baſe. Filaments ſhorter by half than the corolla. Anthers upright. Germ triangular, oblong. Style none. Stigmas three, oblong, curved back, almoſt the length of the germ. Leaves as in the Martagons: but the flowers ſmall, the ſize and form of Lilium perfcum, or Fritillaria perſica. The oblong ſtigmas without a ſtyle are ſingular in this genus [c].

Native of Kamtſchatka, and alſo of China and Cochinchina, if Loureiro's plant be the ſame.]

11. Root ſmaller than in the other ſorts, ſcaly and white. Stem ſingle, upright, near a foot and half high. Leaves in four or five whorls, ſhort, pretty broad, obtuſe. Stem terminated by two flowers which ſtand

[a] Mill. fig. [b] Hort. kew. [c] Ibid. [d] Thunberg. [e] Cateſby. [a] Hort. kew.

[a] Jacquin. [b] Hort. kew. [c] Ibid. [d] Linn. amoen. and Loureiro.

erect,

erect, upon short separate peduncles; they are shaped like those of the bulb-bearing fiery Lily, but the petals are narrower at their base, so that there is a considerable space between them, but upwards they enlarge and approximate, forming a sort of open bell-shaped corolla, but they terminate in acute points: they are of a bright purple colour, marked with several dark purple spots towards the base. It flowers in July, and the seeds ripen at the end of September.

[Linneus observes that it resembles the preceding very much, but the petals of that are ovate and sessile, whereas in this they are on oblong distinct claws.

Thunberg says, that the lower leaves are alternate, the upper ones three or four together, oblong, nerved underneath, an inch and half long.

Native of North America, and also, according to Thunberg of Japan. Linneus marks it as growing in Canada. Mr. Miller says, that it was sent to him from Pensylvania, by Mr. John Bartram. [Mr. Miller cultivated it in 1757, as appears from his figures'.

The species may be distinguished by the following table.

- Leaves scattered, alternate.
  - 1 to 7. Flowers upright.
    - 1, 3, 4.
      - 1. Flowers several. White.
      - 3. Flower one. Orange-yellow spotted.
      - 4. Flowers commonly several. Orange-coloured, rugged within.
    - Flowers reflex.
      - 2, 5, 6, 7.
        - Solitary, White. 2.
        - Several.
          - Red. 5.
          - Scarlet. 6.
          - Yellow. 7.
  - Leaves in whorls.
    - 8 to 11. Flowers reflex. 8, 9.
      - Petals revolute. Purple. 8.
      - Petals reflex at the top only. Yellow-spotted. 9.
    - Flowers upright. 10, 11.
      - Few. Stigmas oblong without a style. 10.
      - Two. Petals with distinct claws. 11.]

PROPAGATION AND CULTURE.

1. The common White Lily, with all its varieties, (and indeed all the sorts) may eafily be increafed from offsets, which the bulbs of this fend out in fo great plenty, as to make it neceffary to take them off every other, or at moft every third year, to prevent their weakening the principal bulb. The time for removing them is the end of auguft, ſoon after the ſtalks decay. They will thrive in almoft any ſoil and ſituation, and as they grow tall and ſpread, they muſt be allowed room, and in large borders they are very ornamental. They are ſo hardy that no froſt injures them; and increaſing very faſt by offsets, are become ſo common as to be little regarded, notwithſtanding the great beauty of the flowers, and their rich odour, which indeed is too powerful for many perſons.

2. The common Orange Lily is ſo common, and increaſes ſo readily by offsets, that it is almoſt rejected, however in large gardens it ſhould not be wanting, ſince it makes a handſome appearance when in flower, if properly diſpoſed.

The ſtalks decaying in ſeptember, the roots may be then tranſplanted, and the offsets taken off; but as it does not put out new leaves till towards ſpring, this may be done till near Chriſtmas. It ſhould be repeated once in three years. This ſort will thrive in any ſoil or ſituation, but will be ſtrongeſt in a ſoft gentle loam, not too moiſt.

The bulb-bearing varieties may alſo be increaſed without taking up the roots, by means of the little bulbs that are put forth in plenty from the axils of the leaves.

Both theſe ſorts, with their varieties, will thrive under the ſhade of trees, and are therefore proper to be introduced in plantations, and on the borders of woods.

5, 6, 7, 8, 9. All theſe may be propagated by offsets, which ſome produce in great plenty, but others ſend out very few, and are therefore more ſcarce. The roots may be taken up when the ſtalks decay; and if there be a neceſſity for keeping them out of the ground, to tranſport them to a diſtant place, they ſhould be wrapped in dry moſs, and they will keep thus for two months. The beſt time to replant them is the beginning of october, but if the ground be not ready to receive them, they ſhould be covered with dry ſand or wrapped in moſs, to prevent the ſcales from ſhrinking, which weakens the bulbs, and often occaſions them to be mouldy and to rot.

The roots ſhould be planted five or ſix inches deep in the ground, eſpecially if the ſoil be light and dry; but where it is moiſt, raiſe the borders five or ſix inches; for if the water come near the roots in winter, it will rot them; and where the ſoil is ſtiff and binding, mix a good quantity of ſea-coal aſhes or rough ſand with it.

As the Canada, Pomponian and Philadelphian Martagons, (9, 5, 11) are ſomewhat more tender, in very ſevere winters, the ſurface ſhould be covered with old tanner's bark or ſea-coal aſhes, to ſecure them from froſt, and in the ſpring the covering may be removed, before the ſtalks ſhoot up.

The tall-growing ſorts are only proper for large gardens, and may be intermixed with white and orange Lilies, tall-growing Irides, and other flowers of the ſame growth; where, if they be not too much crouded, and are properly diſpoſed, they will make a good appearance. Some of the common Martagons thrive under the ſhade of trees, and may therefore be diſpoſed to advantage in plantations.

None of the bulbs ſhould ever be tranſplanted after they have made ſhoots, for it weakens them ſo as not to recover in leſs than two or three years.

In Holland they raiſe a great variety of Martagons. Thoſe which are moſt generally found in the Engliſh gardens are,

The common Martagon with double flowers.
The White.
The Double White.
The White Spotted.
The Imperial.
The Early Scarlet.
The Conſtantinople Vermillion Martagon.

The way of obtaining theſe and other varieties, is by ſowing the ſeeds of the beſt flowers, in ſquare boxes, ſix inches deep, with holes bored in their bottoms, and filled with freſh light ſandy earth. The beginning of october, ſoon after the ſeeds are ripe, is the proper ſeaſon. Sow them pretty thick, covering them about half an inch with light ſifted earth. Place the boxes where they may have the morning ſun only, and refreſh them often with water, if the ſeaſon prove dry. In november remove them where they may have as much ſun as poſſible, and be ſcreened from wind. About the beginning of april remove them into their former poſition, for now the young plants, which are impatient of heat, will appear; and the earth will dry too faſt, if expoſed to the full ſun at noon. Keep them entirely clear from weeds, and refreſh them gently and cautiouſly with water, when the ſeaſon is dry. Let the boxes remain till the beginning of auguſt. Then prepare ſome beds of freſh light earth, and theſe being levelled, take the earth out of the boxes, with the ſmall bulbs, and ſtrew it equally over the beds, covering it half an inch thick with fine ſifted earth. If the ſeaſon prove hot and dry, ſhade the beds in the middle of the day, and refreſh them with water.

If the following winter ſhould prove ſevere, cover the beds with peaſ-haulm or other light covering, to keep out the froſt; but this will be injurious to the bulbs in mild weather.

At the end of february, or the beginning of march, when hard froſts are over, gently clear off the earth upon

upon the ſurface of the beds, and ſift a little freſh earth over them; but in doing this do not diſturb or injure the bulbs. Keep them clear from weeds; water them gently in dry weather; and in very hot days ſhade them from the ſun. When their leaves are quite decayed, ſtir the ſurface of the beds again; and in ſeptember ſift more freſh earth over the beds. During winter and ſpring manage them as before directed.

In ſeptember following tranſplant the bulbs to a greater diſtance, on beds prepared as above. Place them about eight inches aſunder, with the buds uppermoſt, and four inches deep. This ſhould be done in moiſt weather.

In ſevere froſt cover the beds with peas-haulm or decayed tan, taking it off in ſpring, and refreſhing the beds as before with new light earth.

The ſecond year after being planted in theſe beds, the ſtrongeſt bulbs will begin to flower. Then place a ſtick wherever you obſerve any peculiar varieties, and when the leaves are decayed, remove theſe bulbs into other beds at a greater diſtance, or into the borders of the flower-garden. But never reject any till they have flowered two years; for frequently ſome will make a mean appearance the firſt year, and afterwards become fair handſome flowers when they have obtained ſtrength. When ſuch have been ſelected as are worth preſerving, the reſt may be planted in ſhady outer walks, or in the borders of plantations.

[3. Cateſby's Lily may be raiſed from ſeeds, or offſets, which however are not very plentifully produced; nor will it grow in perfection without great care: the roots in particular are to be guarded againſt froſt. The ſoil and ſituation may be the ſame as recommended for Cyclamen coum [1].]

11. This ſort growing in a ſmall compaſs, and the flowers having no ill ſmell, is proper for the borders of ſmall gardens. The ſtalks decay ſoon after the ſeeds are ripe. This is the proper time to remove the roots, which do not put out new fibres till after Chriſtmas. The bulbs do not put out many offſets.

[LILIUM. See *Amaryllis, Crinum, Fritillaria, Gloriosa, Hemanthus, Hemerocallis, Modeola, Paneratium.*

—— convallium. See *Convallaria.*

—— perſicum. See *Fritillaria.*

—— ſuperbum. See *Gloriosa.*

[LILY. See *Agapanthus, Amaryllis, Fritillaria, Gloriosa, Lilium.*

—— Day. See *Hemerocallis.*

—— Guernſey. See *Amaryllis.*

—— May. See *Convallaria.*

—— of the Valley. See *Convallaria.*

—— Perſian. See *Fritillaria.*

—— Water. See *Nymphæa.*

—— Thorn. See *Cateſbæa.*

LIMA. See *Cynoſurus.*]

LIME TREE. See *Citrus* and *Tilia.*

[LIMEUM. (*The name of an herb in Pliny.*)

Lin. gen. n. 463. *Reich. n.* 499. *Schreb. n.* 631. *Gærtn. t.* 76. *Juſſ.* 314.

Claſſ. 7. 2. Heptandria Digynia.

Nat. order of *Holoraceæ. Portulaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* ovate, acuminate, keeled, membranaceous on the margin: two exterior; permanent.

COR. *Petals* five, equal, ovate, ſomewhat clawed, obtuſe, ſhorter than the calyx.

Nectary: a margin ſurrounding the germ, bearing the ſtamens.

STAM. *Filaments* ſeven or fewer, awl-ſhaped, ſhorter than the corolla. *Anthers* ovate.

PIST. *Germ* globoſe. *Style* two-parted, cylindric, ſhorter than the ſtamens. *Stigmas* rather obtuſe.

PER. none. Fruit bipartile into

SEEDS two, hemiſpheric, hollow, naked, ſhaped like a meniſcus, G.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Pet.* five, equal. *Capſ.* globular, two-celled.

SPECIES.

1. Limeum africanum. *African Limeum.*

Lin. ſpec. 488. *ſyſt.* 352. *Reich.* 2. 138. *ſuppl.* 214. *Gærtn. fruct.* 367.

Leaves oblong petioled (ovate-lanceolate ſubpetioled, Th.)

2. Limeum incanum. *Hoary Limeum.*

L. aphyllum. *Lin. ſyſt.* 488. *ſuppl.* 214.

L. capenſe. *Thunb. prodr. cap.* 68.

Leaves ovate with a ſtrong midrib underneath tomentoſe.

3. Limeum æthiopicum.

Thunb. prodr. cap. 68.

Leaves linear-lanceolate.

DESCRIPTIONS, *&c.*

1. Stature of Corrigiola or Telephium. Stems proſtrate, weak, a ſpan long, angular, naked, perennial at the baſe. Leaves alternate, remote, linear-lanceolate, ſmall. Corymbs terminating, ſolitary, compound, naked, on long peduncles [2].

The leaves, ſo differently deſcribed above, ſeem to vary much. In the ſpecimens of the Bankſian herbarium, we have linear, oblong, ovate, roundiſh, and ſpatulate leaves, if the ſpecimens be all of one ſpecies.

According to Gærtner, pericarp none. Seeds naked, united into a ſpherical fruit, ſpontaneouſly ſplitting when ripe. Seeds erect, dirty ſtraw-coloured, on one ſide convex, excavated and rugged, and having a wide cavity on the other: outer coat coriaceous, of a middling thickneſs: inner very thin, pale: embryo of the ſame ſhape with the ſeed, or meniſcus-form, farinaceous, very white: embryo roundiſh, ſemicircular, milky: cotyledons ſemicylindric; radicle long, bowed, inferior.

Introduced in 1774, by Mr. Francis Maſſon [3].

2. This ſeems to be a ſmall plant, as far as we can judge from Maſſon's ſpecimen in the Bankſian herbarium. It is extremely woody at bottom. The leaves are all ovate, ſubpetioled, and as lanuginoſe as thoſe of Mullein. I am at a loſs to account for the younger Linnæus giving it the name of *aphyllum*, and ſaying that it ſeems to be leafleſs, when he has deſcribed them as ovate and ſeſſile, and there are abundance of root-leaves, and no want of ſtem-leaves.

3. Of this we have no deſcription; but it is only mentioned by Thunberg in his prodromus. We have here a deplorable inſtance of the inſufficiency of trivial names, in *africanum, capenſe, æthiopicum*, which diſtinguiſh nothing; all theſe plants being natives of the Cape of Good Hope.

There is a fourth ſpecies in the Bankſian herbarium, ſent from the ſame country by Maſſon, which is truly a ſhrub, and may be called *Limeum fruticans.*

LIMEUM. See *Ranunculus Thora.*

LIMNANTHEMUM. See *Menyanthes.*

LIMNIA. See *Claytonia.*

LIMNOFRUCE. See *Hippuris.*

LIMO. See *Citrus.*]

LIMODORUM. (*Λειμοδωρον of Cluſius. Probably* λειμων δωρον, *the gift of the meadows.*)

Lin. gen. n. 1013. *Reich. n.* 1098. *Schreb. n.* 1372. *Gron. virg.* 110. *Roy. lugdb.* 16. *Juſſ.* 65.

Claſſ. 20. 1. Gynandria Diandria.

Nat. order of *Orchideæ.*

GENERIC CHARACTER.

CAL. *Spathes* vague. *Spadix* ſimple.

Perianth none.

COR. *Petals* five, ovate-oblong, about equal, ſpreading: the ſuperior ones converging.

Nectary one-leafed, concave, footſtalked, within the loweſt petal: the length of the petals.

STAM. two. *Filament* an oblong, aſcending body, the length of the corolla. *Anthers* two, ovate, looking forwards.

PIST. *Germ* columnar, the length of the corolla; inferior. *Style* filiform, growing to the body of the filaments. *Stigma* funnel-form.

PER. *Capſule* columnar, three-valved, one-celled, gaping at the corners.

SEEDS numerous ſaw-duſt-like.

OBS. *Scarcely different from* Serapias, *except in the inflorescence or ſcape.* Sw.

[1] Curt. magaz.

[2] Linn.

[3] Hort. kew.

ESSENTIAL CHARACTER.

Nectary one-leafed, concave, pedicelled, within the loweſt petal.

SPECIES.

[1. Limodorum tuberoſum. *Tuberous-rooted Limodorum. Lin. ſpec.* 1345. *ſyſt.* 816. *Reich.* 4. 32. *Gron. virg.* 138. *Act. upſ.* 1740. *p.* 21. *Swartz obſ.* 322. *L'Herit. ſert. angl.* 28. *Curt. magaz.* 116. *Flowers ſubſpiked bearded.*]

2. Limodorum altum. *Tall Limodorum.*
Lin. ſyſt. 816. *Reich.* 4. 32. *Swartz obſ.* 323. *L'Herit. ſert. angl.* 28. *Brown. jam.* 325. 10. (Satyrium). *Mill. fig. t.* 145. *Mart. cent. t.* 50. (Helleborine). *Plum. ic.* 189.
Flowers beardleſs, ſpikes ſubpanicled.

[3. Limodorum Tankervilliæ. *Chineſe Limodorum. L'Herit. ſert. angl.* 28. *Ait. hort. kew.* 3. 302. *t.* 12.
Flowers beardleſs, in racemes.

4. Limodorum utriculatum.
Swartz prodr. 119.
Root tuberous, root-leaves twin-ſheathed, radical ſheath inflated, ſcape ſheathed, flowers ſeſſile.

5. Limodorum gentianoides.
Swartz prodr. 119.
Root tuberous: leafleſs, ſtem ſheathed, flowers pedunculed.

6. Limodorum ſtriatum.
Thunb. jap. 28.
Epidendrum ſtriatum. *Thunb. in tranſ. Linn. ſoc.* 2. 327. *Diſſ. noſt. n.* 121.
Scape angular ſmooth, leaves enſiform nerved, petals lanceolate, with an oblong flat lip.

7. Limodorum enſatum.
Thunb. jap. 29. *Kæmpf. ic. ſel. t.* 3.
Epidendrum enſifolium. *Thunb. in tranſ. Linn. ſoc.* 2. 327. *Diſſ. noſtr. n.* 27.
Scape round even, leaves enſiform ſtriated, petals lanceolate, lip recurved broader.

8. Limodorum falcatum.
Thunb. in tranſ. Linn. ſoc. 2. 326.
Orchis falcata. *Thunb. jap.* 26.
Horn filiform very long, leaves enſiform-channelled ſickled.

9. Limodorum monile.
Thunb. in tranſ. Linn. ſoc. 2. 327.
Epidendrum monile. *Thunb. jap.* 30.
E. moniliforme. *Diſſ. noſtr. n.* 28.
Scape round ſtriated jointed like a necklace ſimple, leaves linear acute.

10. Limodorum virens.
Roxb. corom. 2. 32. *t.* 38.
Root ſcaly, ſcape branched ſpotted, bractes acute, flowers remote greeniſh yellow.

11. Limodorum recurvum.
Roxb. corom. 2. 33. *t.* 39.
Root tuberous, ſcape bending nodding, ſhorter than the leaves, leaves broad-lanceolate five-nerved, ſpike globular nodding.

12. Limodorum mutas.
Roxb. corom. 2. 33. *t.* 40.
Root tuberous, ſcape arched longer than the leaves ovate five-nerved, ſpike oblong pendulous.

13. Limodorum aphyllum.
Roxb. corom. 2. 34. *t.* 41.
Root fibrous: leafleſs, flowers ſolitary naked, ſeſſile.

DESCRIPTIONS, *&c.*

1. Root tuberous. Stem a foot and half high. The number of flowers not exceeding five, dark purple. In a more luxuriant ſtate, it is probably a larger plant, and produces more flowers [a].

Native of North America; as Virginia and South Carolina.—Introduced in 1788 by Mr. Curtis, from bog earth brought over with plants of Dionæa Muſcipula [b].

This ſpecies was long confounded with the next.]

2. Root ſhaped like that of the true Saffron, but the outer cover of a darker brown colour; from this come out two or three leaves, nine or ten inches long, and near three quarters of an inch broad in the middle, being contracted towards both ends, terminating with long acute points, folding over each other at their baſe; they have five longitudinal furrows, like the firſt leaves of young Palms. The flower ſtalk ariſes immediately from the root, on one ſide of the leaves, it is naked, ſmooth, and of a purpliſh colour towards the top. It is near a foot and half high, and terminated by a looſe ſpike of purpliſh red flowers on ſhort peduncles.

[Bulb tubercled, roundiſh, of a fleſhy and fibroſe ſubſtance, covered with a coriaceous ſhining ſkin, and having ſome tomentoſe white fibres underneath. Leaves from the bulb, vernal, two feet long, broad-lanceolate, longitudinally folded at the nerves, even, very like thoſe of a young plant of the Coco Palm. Scape ſimple, upright, ſometimes ſubdivided at top, two feet high, even, round. It has little ſheaths on it, which are remote, præmorſe, embracing, netted, pale. Flowers terminating, ſcattered, alternate, large, purple, ſometimes varying to white. The three outer petals are upright, ſpreading; the two inner bent in, forming a helmet with the middle upper one; all equal, converging a little, the inner ones paler. Nectary ventricole, cordate, embracing the column with its baſe; lip recurved two-lobed whitiſh, with longitudinal blood-red grooves, and others ſulphur-coloured; the middle appendiched with an ovate emarginate blood-red little jag. Column elongated, gibbous, boat-ſhaped, dilated at top, cordate, having the two anthers on very ſhort pedicels in a caſe, ſtigma tubular in front. Germ oblong, attenuated. Capſule large, oblong, pedicelled, attenuated at the baſe [c].

According to Swartz, this is the tenth Satyrium of Browne, who calls it *Jamaica Salep*, and recommends the root, properly cured, as a ſtomachic.

Native of the Weſt Indies, particularly Jamaica, in the cooler parts of the mountains. It was ſent to Mr. Miller by Dr. Houſtoun, and therefore was cultivated by him at Cheſſea before 1733, in which year Dr. Houſtoun died.] Mr. Miller ſays he alſo received the roots from the Bahama iſlands, and from Penſylvania. Probably this might be the firſt ſpecies. He alſo mentions that he received a ſpecies from Maryland with oval obtuſe leaves, of a thicker conſiſtence.

L. altum ſometimes flowers here in april and may, ſometimes not till ſeptember or october, but the moſt uſual time of flowering is june and july. [In Jamaica it flowers in ſummer.

3. Monſ. L'Heritier obſerves, that although the lip of the nectary in this ſplendid plant ends behind in a very ſhort ſpur, it ought not however to be ſeparated from this genus.

Native of China. Introduced about 1778 by John Fothergill, M. D. It flowers in march and april [d].

4. Native of Jamaica and St. Domingo.

5. Native of Jamaica [e].

6. See the deſcription under Epidendrum ſtriatum.

7. See the deſcription under E. enſifolium. It is a native of China and Japan, and was cultivated here in 1780, by John Fothergill, M. D.

The ſcape is not anciptal or two-edged, but round, and it has no horn to the nectary.

8. This is *Orchis falcata* of Thunberg's flora japonica. Leaves radical, ſeveral, equitant, convoluted, revolute-ſickled, ſmooth, a finger's length, the lower ones ſhorter. Scape upright, ſmooth, ſhorter than the leaves. Flowers in ſpikes, terminating.

Native of Japan [f].

9. See the deſcription under Epidendrum moniliforme. It is not paraſitical, but grows on walls and in hedges. The ſheaths of the leaves have ſeveral ribs [g].

10. Bulbs many, connected near the baſe, conical, pointed, ſurrounded with the circular marks of the inſertions of the leaves, greeniſh, many fleſhy fibres iſſuing from the baſe. Leaves all radical, ſeveral, linear, ſlightly nerved, nearly the length of the ſcape, about an inch broad, ſmooth. Scape axillary, erect, often branched, from one to two feet high, round,

[a] Curtis [b] Ibid. [c] Swartz. [d] Hort. kew. [e] Thunb. jap. [f] Ibid. and Linn. tranſ.

ſmooth,

ſmooth, coloured with purple ſpots; here and there a ſheathed acute bracte. Flowers ſtriated: petals nearly equal, erect or aſcending. Under lip of the nectary projecting, broader but ſhorter than the petals, laterally lobed: lobes involute: middle diviſion large, heart-ſhaped, fringed.

Native of Coromandel, on dry uncultivated ground, flowering during the cold ſeaſon.

11. Bulbs ſtriated, nearly round, ſurrounded with one or two rings, and having many thick fleſhy fibres from their lower parts. Stem from the ſide or baſe of the bulb: it is no other than the ſheathed petioles of the three or four leaves united, ſcarcely appearing above ground. Leaves ſlender in ſubſtance, a little waved round the margins, ſmooth, from ſix to twelve inches long, and three or four broad. Scape from the ſame part of the bulb with the ſtem, and even ſometimes involved in the lowermoſt ſheath or two of the ſcape, about ſix inches long, or rather leſs than half the length of the leaves; a few ſheaths ſurrounding it here and there. Spike many-flowered, with the apex directed to the ground. Bractes ſeſſile, ſtraight, lanceolate, one to each flower. Flowers numerous crowded, white with a ſmall tinge of yellow. Petals nearly equal. Under lip of the nectary broad; apex rounded, undivided, ſhovel-form, crenulated: horn ſcarcely any.

Native of Coromandel, in moiſt valleys among the hills, flowering at the beginning of the rainy ſeaſon.

12. This differs from the preceding in having the bulbs ſmooth, the leaves oval, the ſcape longer than the leaves, the ſpike oblong and pendulous, with the flowers at ſome diſtance from one another, of a beautiful roſe-colour, and the under lip of the nectary ſharp-pointed.

Native of the ſame places, and flowering at the ſame time.

13. Stems perennial, ſeveral, moſt ſimple, ſpreading or pendulous as the ſituation admits, naked, round, jointed at every inch, and at each joint ſmall membranaceous annular ſcales, without the leaſt veſtige of a leaf. Flowers generally iſſuing ſingle from the joints of the ſtems. Nectary large, near the baſe, the ſides incurved, ſo as to form as it were a tube, the exterior part expanded, margins curled, waved and ciliated: it is of a pale purple colour.

Native of Coromandel but very rare there, on dry rocky hills, flowering in the beginning of the hot ſeaſon [1].

PROPAGATION AND CULTURE.

1. From the little experience we have had of the management of this ſpecies, it appears to be ſcarcely hardy enough for the open border, yet not tender enough to require a ſtove. The firſt plants were produced here by planting the roots in pots filled with hog earth, and plunging them into a tan-pit which had a gentle heat, for the purpoſe of raiſing plants or ſeeds, and for ſtriking cuttings.]

2, &c. The other ſorts are much too tender to thrive in the open air in England, and ſeldom flower in a greenhouſe. They are kept therefore in the tan-bed in winter, and if in ſummer the pots be plunged in a tan-bed under a deep frame, the plants will thrive, and flower ſtrongly.

They are propagated by offsets from the roots, which are ſent out pretty freely (from the ſecond ſort) when the plants are in vigour. Theſe ſhould be taken off and tranſplanted, when the plants are moſt deſtitute of leaves. They ſhould have a ſoft loamy ſoil, and little water, eſpecially in winter.

LIMODORUM. See *Orchis* [and *Satyrium*.

LIMON. See *Citrus*.

LIMONIA. (Limonia, alterum genus Anemones, *Plin.* 21. 11. 38. *Adamsia Theophr.* 9. *praterſis.*) *Lin. gen. n.* 534. *Reich. n.* 582. *Schreb. n.* 720. *Juſſ.* 261.

Claſſ. 10. 1. Decandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, three or five-cleft, acute, very ſmall, permanent.

COR. *Petals* three to five, oblong, obtuſe, upright, ſpreading at the tip.

STAM. *Filaments* ſix to ten, awl-ſhaped, upright, ſhorter than the corolla. *Anthers* linear, upright.

PIST. *Germ* oblong, ſuperior. *Style* cylindric, length of the ſtamens. *Stigma* headed, flat.

PER. *Berry* ovate or ſubglobоſe, three-celled: *partitions* membranaceous.

SEEDS ſolitary, ovate.

ESSENTIAL CHARACTER.

Cal. five-parted. *Pet.* five. *Berry* three-celled. *Seeds* ſolitary.

SPECIES.

1. Limonia monophylla. *Simple-leaved Limonia.*
Lin. ſyſt. 402. *mant.* 237. *Reich.* 2. 279. *Roxb. corom.* 59. *t.* 83.
Limones pufilli zeylanici ſylveſtres. *Burm. zeyl.* 143. *t.* 65. *f.* 1.
Leaves ſimple, ſpines ſolitary.

2. Limonia lucida.
Forſt. flor. auſtral. n. 191.
Unarmed, leaves ſimple, peduncles axillary.

3. Limonia trifoliata. *Three-leaved Limonia.*
Lin. ſyſt. 402. *mant.* 237. *Reich.* 2. 279. *Jacqu. ic.* 3. 463. *collect.* 3. 176. *Burm. ind.* 103. *t.* 35. *f.* 1.
Triphaſia Aurantiola. *Lour. cochineh.* 153.
Leaves ternate, ſpines in pairs.

4. Limonia pentaphylla. *Five-leaved Limonia.*
Retz. obſ. 5. 24. *n.* 59. *Roxb. corom.* 60. *t.* 84.
Unarmed, leaves commonly quinate, leaflets oblong, entire.

5. Limonia acidiſſima.
Lin. ſyſt. 402. *mant.* 380. *Reich.* 2. 279. *Burm. ind.* 102. *Lin. zeyl.* 2. 175. (Schinus). *Rumph. amb.* 2. 133. *t.* 43. (Aniſifolium.)
Leaves pinnate, ſpines ſolitary.

6. Limonia arborea.
Roxb. corom. 4. 60. *t.* 85.
Stem arborous, unarmed, leaves quinate, leaflets linear, ſerrate.

7. Limonia crenulata.
Roxb. corom. 4. 60. *t.* 86.
Tjeru-Catu-Naregam. *Rheed. mal.* 4. 31. *t.* 14.
Leaves alternate or faſcicled: leaflets two or three pairs with broad-winged petioles, ſpines ſolitary.

DESCRIPTIONS, &c.

1. Leaves oblong-ovate. Spines axillary, ſolitary. Peduncles axillary, cluſtered, one-flowered [a]. Petals four. Stamens eight, monadelphous [1].

Trunk irregular, with a ſmooth greeniſh-aſh-coloured bark. Branches numerous very irregular. Spines very ſtrong and ſharp, but in many plants entirely wanting. Leaves alternate on ſhort petioles, emarginate, ſmooth, firm, from two to three inches long, an inch or an inch and half broad. Stipules awl-ſhaped. Racemes ſhort. Bractes awl-ſhaped, ſmall. Calyx four or five-parted. Corolla four or five-petalled: petals oval, equal, ſpreading. Nectary cylindric, with a ten-toothed mouth; teeth alternately longer; the anthers reſt on theſe teeth, without any filaments. Germ globular: ſtyle the length of the nectary: ſtigma four or five-lobed. Berry ſize of a nutmeg, very like a Lime, whence comes the Hindoo name Adavie-nima, or wild Lime. It is commonly four-celled, and the ſeeds are generally ſolitary.

Native of Coromandel, in the large foreſts on the coaſt, where it grows to a ſmall tree, though oftener found in the ſtate of a large ſhrub [a]. —Introduced in 1777, by Dan. Charles Solander, L.L.D. [2]

2. Native of the iſland of Mallicollo in the South Seas [3].

3. This tree has the appearance of an Orange, with flexuoſe branches. Leaves alternate, petioled, quite entire, have pores ſcattered over them, the ſame ſize with thoſe in Jaſminum fruticoſum: lateral leaflets ſeſſile, the middle one larger, emarginate. Spines ſtipular, longer than the petiole. Berry pedunculed, globular, ſmooth, red, the ſize of thoſe of Vaccinium [4].

[a] Linn. mant. [1] Juſſieu. [2] Roxburgh. [3] Hort. kew. [4] Forſter. [5] Linn. mant.

[1] Roxburgh.

Juſſieu informs us that he has ſeen this ſpecies with three petals and five ſtamens. Jacquin deſcribes it with three petals and ſix ſtamens, and remarks that in a few flowers he obſerved four petals and eight ſtamens.

According to him, the whole tree is ſmooth, the height of a man (in the ſtove), with a trunk the thickneſs of the human arm, covered with a browniſh aſh-coloured bark, very much branched, the branchlets alternate, ſpreading. Spines awl-ſhaped, ſtraight, ſpreading, on each ſide at the leaves and branchlets, the older ones near half an inch long. Leaves ſubbifarious, on very ſhort petioles, ſhining: leaflets blunt, retuſe, very obſcurely crenate, with pellucid dots on both ſides; the lateral ones ovate, half an inch long; the middle one lanceolate, an inch and more in length. Flowers ſweet-ſmelling, on very ſhort peduncles, axillary, in pairs or three together, ſucceeding each other ſlowly. Calyx ſomewhat villoſe, green. Corolla and filaments white. Anthers pale yellow. Stigma yellow. Fruit red-bay, ſoft, the ſize of a hazel nut. Pulp colourleſs, very ſweet, with a ſlight taſte of turpentine; before it is ripe glutinous and taſting ſtrong of turpentine. Seeds pale coloured with green and purple, large, ſmooth, containing a green, two-lobed kernel, of an unpleaſant acrid taſte. One or two ſeeds only uſually ripen; and then the partitions are ſo preſſed together, that the number of cells cannot eaſily be diſcerned.

The calyx is bell-ſhaped, blunt, with a trifid mouth. The anthers are oblong and incumbent. Germ oval, obſcurely three-cornered. Style filiform, upright, longer than the ſtamens. Stigma three-lobed-headed. Berry roundiſh, five-celled. Seeds ſolitary, oval, compreſſed a little.

Loureiro deſcribes his Triphaſia, which, ſuppoſing it to be of a new genus, he named from the prevalence of the number three in the leaves, corolla and calyx, as a tree of five feet in height, with abundance of ſpreading, twiſted, ſubdivided branches; the leaflets ovate, emarginate, flat, ſmooth, ſmall, odoriferous, of a browniſh green colour. Prickles axillary, ſtraight, very ſharp, ſhorter than the leaves. Flowers white, axillary, ſolitary, with thickiſh petals. Berries red, ovate, like thoſe of Coffee, but only half the ſize, covered with a thin pellicle, and containing a clammy, ſweet, inodorous, eatable pulp, and a ſingle ovate ſeed.

It is a native both of China, and Cochinchina, where it is much cultivated both for the beauty and ſmell, and the pliancy of its branches. Jacquin's plant alſo came originally from China, though immediately from the iſland of Mauritius. He ſays that it flowers very well in the open air from may to july, and bears abundance of fruit in ſeptember[a]. According to Burman it is a native of Java.

4. Leaves alternate, ovate, acute, entire, the ſize of Citron leaves. Partial petioles ſhort, winged, but the wings bent in. Racemes ſhort, compound. Flowers minute. Calyx five-toothed[b].

Trunk ſcarcely any, with an aſh-coloured bark. Branches numerous, nearly erect. Leaves in threes, four or fives, but generally in fives, feather-form: leaflets alternate, oblong, ſmooth, ſhining, from two to three inches long, and about an inch and half broad. Petiole round, ſmooth. Racemes terminating and axillary, often compound, covered with a ruſt-coloured down. Bractes ſmall concave, one under each ſubdiviſion of the raceme. Flowers white, very fragrant. Nectary a notched ring ſurrounding the baſe of the germ. Filaments ſwelled at the middle, alternately ſhorter. Berry round, red, ſmooth, ſize of a ſmall cherry, pulpy. One or two ſeeds only come to maturity, though the germ has always the rudiments of five.

It is an elegant fragrant ſhrub, very common in moſt uncultivated lands in Coromandel, but chiefly under large trees, where birds have dropped the ſeeds. It flowers all the year there. The whole plant, when drying in the ſhade, diffuſes a pleaſant permanent ſcent; the flowers are exquiſitely fragrant; birds eat the berries greedily.

5. This tree is ſaid to attain the height of thirty feet, with a trunk ten inches in diameter. The leaves have the ſmell of Aniſe, and ſo has the fruit, whence Rumphius calls it *Aniſum moluccanum*. Spines ſtraight, acute, in the axils between the branch and the petiole. Common petiole or rachis membranaceous, jointed. Leaflets obovate, oppoſite with an odd one, ſmooth, emarginate. There are no ſpines on the petioles. Perianth very ſmall, five-cleft. Petals five, ſpreading. Filaments eight or ten, with thick anthers. Germ roundiſh. Style thick, ſhort.

Native of the Eaſt Indies[c].

6. Leaves alternate, in fives: leaflets alternate ſmooth, five inches long, and about two broad. Panicles terminating, and from the exterior axils. The reſt as in L. pentaphylla.

The berries are alſo eaten by birds, and the flowers are equally fragrant with thoſe of the fourth ſort. In their habit theſe two agree, and the ſerrate leaves are the chief diſtinction.

Native of the mountainous parts of the Circars, where it grows to a middle-ſized tree, with a large branching head.

7. Leaves on the young ſhoots alternate, on the woody branchlets faſcicled, feathered with an odd one, three to four inches long. Leaflets two or three pairs, oppoſite, ſeſſile, oblong, nearly equal, ſlightly notched, obtuſe, ſmooth, of a ſlight texture, covered with numberleſs ſmall diaphanous points; one inch long and half an inch broad. Petiole broad-winged, leaf-like, jointed. Flowers white, ſmall, fragrant, collected in ſmall umbels or racemes over various parts of the branchlets. Calyx four-toothed. Petals four, lanceolate, ſpreading. Nectary a ring ſurrounding the baſe of the germ. Filaments eight, rather ſhorter than the petals, broad towards the baſe, ſpreading. Anthers incumbent, oval. Germ ſeſſile. Style thick, ſhorter than the ſtamens. Stigma oblong. Berry the ſize of a large pea, ſmooth, juicy, when ripe black, four-celled. Seeds four, but it ſeldom happens that all come to maturity.

Native of Coromandel, on the low lands near the coaſt. It is there a ſhrub, but in the mountains it grows to a middle-ſized tree. It flowers in the hot ſeaſon[d].

LIMONIASTRUM. See *Statice*.

LIMONIUM. See *Sarracenia* and *Statice*.

LIMOSELLA. (*Dimin. from* limus, *mud; in which it delights to grow.*)

Lin. gen. n. 776. *Reich. n.* 837. *Schreb. n.* 1039. *Gaertn. t.* 50. *Juſſ.* 96. Plantaginella. *Dill. gen.* 6.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Precis. Lyſimachiæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-cleft, upright, ſharp, permanent.

COR. one-petalled, bell-ſhaped, upright, equal, five-cleft, acute, ſmall: *diviſions* ſpreading.

STAM. *Filaments* four, upright, of which two are approximated to the ſame ſide, ſhorter than the corolla. *Anthers* ſimple.

PIST. *Germ* oblong, obtuſe, two-celled. *Style* ſimple, length of the ſtamens, declinate. *Stigma* globoſe.

PER. *Capſule* ovate, half involved by the calyx, one-celled, divided below by the partition, two-valved.

SEEDS very many, oval. *Receptacle* ovate, large.

ESSENTIAL CHARACTER.

Cal. five-cleft. *Cor.* five-cleft, equal. *Stam.* approximating by pairs. *Capſ.* one-celled, two-valved, many-ſeeded.

SPECIES.

1. Limoſella aquatica. *Common Mudwort* or *Baſtard Plantain.*

Lin. ſpec. 881. *Jacq. coll.* 572. *Reich.* 3. 181. *Fl. lapp. n.* 249. *Fl. ſuec. n.* 565. *Huds. angl.* 276. *Wither. arr. ed.* 3. 537. *Engl. bot.* 357. *Light. ſcot.* 331. *Relh. cant. n.* 469. *Gaertn. fruct.* 1. 208. *Hall.*

[a] Jacq. collect. [b] Retz. [c] Linn. zeyl. [d] Roxburgh.

helv. n. 300. *Gmel. fib.* 4. 72. *n.* 5. *Fl. dan. t.* 69. *Crantz. auſtr.* 353. *Villars dauph.* 2. 443. *Krock. ſilef. n.* 1005. *t.* 27.

L. annua. *Lind. alſat.* 156. *t.* 5. *f.* 1.

Plantaginella. *Hall. jen.* 23. *t.* 6. *f.* 2. — paluſtris. *Bauh. pin.* 190. *Raii hiſt.* 1077. *ſyn.* 278. *Mor. hiſt.* 3. 605. *ſ.* 15. *t.* 2. *row.* 2. *Petiv. brit. t.* 65. *f.* 12.

Plantago aquatica minima. *Cluſ. Park. theat.* 1244. *n.* 4.

Spergula perpuſilla, lanceolatis foliis, *Leef. pruſſ.* 261. *t.* 81.

Alſine paluſtris repens, fol. lanceolatis. *Pluk. phyt. t.* 74. *f.* 4.—exigua, foliolis lanc. *Mentz. pug.* 2. *t.* 7. *f.* 6.

Leaves lanceolate.

2. Limoſella diandra.

Lin. ſyſt. 572. *Reich.* 3. 181. *mant.* 252. *Krock. ſilef. n.* 1006.

Leaves ſubulate.

DESCRIPTION, *&c.*

1. Root annual, throwing out naked cylindrical proſtrate runners, which take root at their extremities, and form new plants. Leaves radical, on long foot-ſtalks, ſpatulate, ſmooth, entire. Flowers ſmall, radical, on ſimple flower-ſtalks, which become inflexed as the fruit ripens. Segments of the the calyx ſharp, the two uppermoſt leaſt deeply divided. Corolla with a ſwelling tube; the limb in five equal ſegments, whitiſh without, red on the inſide, the two uppermoſt of which are a little inflexed. Stamens aſcending, divaricated in pairs towards each ſide of the flower. Style declining, with a blunt rough ſtigma. Capſule globular, with a groove along its upper ſide. Seeds very numerous [a].

Linneus remarks, that the leaves are involute. Dr. Smith ſays he has not found them ſo.

Native of many parts of Europe, in muddy and gravelly places liable to be flooded, and where water has ſtood during the winter. Flowering from july to ſeptember.

2. This has entirely the habit of the preceding, but it is only one-fourth of the ſize, ſo that it is one of the leaſt plants we are acquainted with. It increaſes like the laſt by runners, and theſe are very ſhort. Leaves radical, linear, ſcarcely widening in the middle, blunt at the end. Scapes capillary, one-flowered, the length of the leaves. Stamens no more than two.

Found by Koenig at the Cape of Good Hope, on the coaſt [b].

LINAGROSTIS. See *Eriophorum.*

LINARIA. See *Antirrhinum, Chenopodium, Chryſocoma, Stellera, Theſium, Utricularia.*

LINARIÆ AFFINIS. See *Senecio.*

LINCONIA.

Lin. gen. Reich. n. 335. *Schreb. n.* 433. *Mant.* 147. *Juſſ.* 442.

Claſſ. 5. 2. Pentandria Digynia.

GENERIC CHARACTER.

CAL. *Perianth* inferior, four-leaved: *leaflets* ovate, permanent: the inferior oppoſite pair ſhorter.

COR. *Petals* five, lanceolate, ſeſſile, upright.

Nectary, a dell impreſſed on the bottom of the petal, girt beneath by the margin.

STAM. *Filaments* five, awl-ſhaped, margined, upright, middling. *Anthers* obtuſe, ſagittated with nutant, gaping auricles.

PIST. *Germ* half-inferior with reſpect to the corolla; with reſpect to the calyx, ſuperior. *Styles* two, filiform, ſtriated. *Stigmas* ſimple.

PER. *Capſule* two-celled.

SEEDS two?

OBS. *The Perianth perhaps might be taken for Bractlets; and then the flower would be entirely ſuperior.*

ESSENTIAL CHARACTER.

Petals five, with a nectareous excavation at the baſe. *Capſ.* two-celled.

[a] Engl. bot. [b] Linn. mant.

SPECIES.

1. Linconia alopecuroidea.

Lin. ſyſt. 261. *Reich.* 1. 615.

Coridis folio & ſpica africana ſtrutex alopecuroides, flore albo. *Herm. afric.* 7.

DESCRIPTION, *&c.*

This is a ſhrub with wandlike branches, irregular from the baſe of the falling leaves, as in the Fir-tree. Branches few, determinate. Leaves ſcattered, in a ſort of whorl, five or ſix together, ſubpetioled, linear, three-ſided, ſtiffiſh, ſhining, an inch long, rugged at the angles; the uppermoſt ciliate. Flowers at the ends of the branches, not however in bundles but ſeparate, lateral, ſeſſile, the length of the leaves. Leaflets of the calyx not diſpoſed in a ring, but by pairs alternately oppoſite, villoſe at the edge. Corollas tenacious, fleſh-coloured or white.

Native of the Cape of Good Hope, in watery places among the mountains.

There is another ſpecies from the ſame country in the Bankſian herbarium, with the flowers in bundles and heads.

LINDERA. (*So named by Thunberg, from J. Linder, a Swede, who publiſhed* De Heſperidum pomis, Aboæ 1702. Liber de Venenis, Leid. 1708. 12°. Lipſ. 1739. 8°. Swenſka fargakonſt, &c. Stockh. 1720. 8°. Flora Wikſbergenſis, Stockh. 1728. 8°.

Thunb. jap. 9. *nov. gen.* 64. *Lin. gen. Schreb. n.* 597. *Juſſ.* 429.

Claſſ. 6. 1. Hexandria Monogynia.

GENERIC CHARACTER.

CAL. none.

COR. *Petals* ſix, ovate, obtuſe.

STAM. *Filaments* ſix, many times ſhorter than the corolla. *Anthers* minute.

PIST. *Germ* ovate, ſmooth, ſuperior. *Style* upright, rather ſhorter than the corolla. *Stigmas* two, reflex.

PER. *Capſule* two-celled.

SEEDS

ESSENTIAL CHARACTER.

Cor. ſix-petalled. *Capſule.*

SPECIES.

1. Lindera umbellata.

Lin. ſyſt. 339. *Thunb. jap.* 145. *t.* 21.

Kuro Nosji. *Kæmpf. amoen.* 5. 908.

DESCRIPTION, *&c.*

Stem ſhrubby, looſe. Branches and branchlets alternate, flexuoſe, ſmooth, ſpreading very much. Leaves aggregate at the ends of the branchlets, petioled, oblong, acute, entire, above green and ſmooth, underneath pale and villoſe, an inch long. Petioles ſcarcely a line in length, villoſe above. Flowers terminating, in a ſimple many-flowered umbel. Peduncles a little hairy, unguicular. Pedicels tomentoſe, about half the length.

The Japoneſe uſe the wood for making ſoft bruſhes to clean their teeth with [c].

LINDERNIA. (*So named by Alliani, from Franc. Balthaſ. à Lindern, phyſician at Straſburgh, author of Hortus Aſiaticus* 1747.)

Lin. gen. Reich. n. 828. *Schreb. n.* 1031. *Mant.* 154. *Juſſ.* 122, 450.

Claſſ. 14. 2. Diclynamia Angioſpermia.

Nat. order of *Perſonatæ. Scrophulariæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five parted: *diviſions* linear, ſharp, permanent.

COR. one-petalled, ringent, two-lipped. *Upper lip* very ſhort, concave, emarginated; *lower lip* upright, three-cleft: the middle one rather larger.

STAM. *Filaments* four, twin: the two ſuperior ones ſimple: the two inferior aſcending: with a terminal, upright tooth. *Anthers* twin: the inferior ones ſublateral.

PIST. *Germ* ovate. *Style* filiform. *Stigma* emarginated.

PER. *Capſule* oval, one-celled, two-valved.

SEEDS numerous. *Receptacle* cylindric.

ESSENTIAL CHARACTER.

Cal. five-parted. *Cor.* ringent, with the upper lip very ſhort. *Stam.* the two lower with a terminating tooth and a ſublateral anther. *Capſ.* one-celled.

[c] Thunb jap.

SPECIES.

1. Lindernia pyxidaria.
Lin. syst. 567. *Reich.* 3. 170. *mant.* 252. *Allion. pedem. n.* 203. *misc. taur.* 3. 178. *t.* 5.
Capraria gratioloides. *Lin. spec.* 876.
Pyxidaria repens annua, floriculis monopetalis unilabiatis. *Lind. alsat.* 1. 156. *t.* 5. & 2. 269. *f.* g.
Gratiola flor. pedunculatis, fol. ovatis crenatis. *Gron. virg.* 3.
Ruellia pedunc. solitariis unifloris longitudine foliorum. *Gron. virg.* 73.
Antirrhinum palustre minus Centaurii minoris foliis. *Hall. jen.* 237.
Leaves sessile quite entire, peduncles solitary.
2. Lindernia dianthera.
Swartz prodr. 92.]
Erinus procumbens. *Mill. dict. n.* 6.
Ageratum americanum procumbens glabrum, floribus luteis longis pediculis insidentibus. *Houst. MSS.*
Leaves petioled ovate-roundish subserrate, stem creeping.
[3. Lindernia japonica.
Lin. syst. 567. *Thunb. jap.* 253.
Leaves obovate toothed, the lowest petioled.

DESCRIPTIONS, *&c.*

1. Root annual. Stem smooth, square, brittle, sometimes branched and putting forth runners. Leaves small, slightly crenate, like those of Anagallis, opposite. Flowers axillary, solitary, on a long slender peduncle. Calyx cut into five acute segments almost to the bottom. Corolla pale blue [a].

Native of Virginia, in watery and boggy places, flowering in july and auguſt. Hence it has migrated into Europe, and is now found in like ſituations in Alſace and Piedmont.

2. This alſo is an annual plant, a native of Hiſpaniola[b]. Mr. Miller's deſcription has been already given under *Erinus procumbens*. It muſt have been cultivated by him before 1733, the year of Dr. Houſtoun's death.

3. Root annual. Stem herbaceous, branched, weak: branches alternate, ſomewhat villoſe, from an inch to a ſpan in length. Root-leaves very many, petioled; ſtem-leaves few, ſeſſile; all obovate, blunt ſcarce apparently villoſe, unguicular. Petioles the length of the leaves. Flowers at the ends of the branches, in racemes. A very minute bracte under the peduncles. Corolla rufeſcent. Capſule ovate, blunt, twin, ſmooth.

Native of Japan [c].

LINODUM. See *Pterocarpus.*

LINGUA. See *Ranunculus* and *Scrapias.*

——— cervina. See *Acroſtichum, Aſplenium, Hemionitis, Polypodium, Pteris.*

——— paſſerina. See *Stellera.*

LINSKIA. See *Tremella.*

LINNÆA. (*So named by Gronovius, in honour of the celebrated Linnæus or Carl v. Linné.*)
Lin. gen. n. 774. *Reich. n.* 935. *Schreb. n.* 1037. *Juſſ.* 211.
Claſſ. 14. 2. Didynamia Angioſpermia.
Nat. order of *Aggregatæ. Caprifolia*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* double.
Perianth of the Fruit inferior, four-leaved: the *two oppoſite leaflets* very ſmall, acute; the *remaining two* elliptic, concave, upright, hiſpid, embracing the germ, converging, permanent.
Perianth of the Flower ſuperior, one-leafed, five-parted, upright, narrow, ſharp, equal.
COR. one-petalled, bell-ſhaped, half-five-cleft, obtuſe, ſubequal, twice as large as the calyx of the flower.
STAM. *Filaments* four, awl-ſhaped, inſerted into the bottom of the corolla: of which *two* are very ſmall; the *two neareſt* longer, ſhorter than the corolla. *Anthers* compreſſed, verſatile.
PIST. *Germ* roundiſh, inferior. *Style* filiform, ſtraight, length of the corolla, declinate. *Stigma* globoſe.
PER. *Berry* juiceleſs, ovate, three-celled, covered by the hiſpid glutinous perianth of the fruit, deciduous.
SEEDS two, roundiſh.

ESSENTIAL CHARACTER.

Cal. double, of the fruit two-leaved, of the flower five-parted, ſuperior. *Cor.* bell-ſhaped. *Berry* dry, three-celled.

SPECIES.

1. Linnæa borealis. *Two flowered Linnæa.*
Lin. ſpec. 880. *ſyſt.* 572. *Reich.* 3. 180. *fl. lapp. n.* 250. *t.* 12. *f.* 4. *fl. ſuec. n.* 562. *t.* 1. *hort. cliff.* 320. *nat. med.* 567. *Wither. arr. ed.* 3. 556. *Hall. helv. n.* 299. *Sega. veron.* 1. 183. *Sauv. meth.* 137. *Kalm. itin.* 2. 263. *Gort. ingr.* 100. *Oed. dan. t.* 3. *Act. nidros.* 4. *t.* 4. *f.* 6. *Gmel. ſib.* 3. 128. *n.* 4. *Ehrh. phyt.* 5. *Zorn. ic. t.* 79. *Blackw. t.* 397. *Ludw. edit. t.* 142. *Kroch. ſilef. n.* 1004.
Valerianella nemoroſa repens. *Amm. ruth. n.* 27.
Obolaria. *Sieguſb. prim.* 79.
Serpilliſolia. *Buxb. in comm. petrop.* 2. 346.
Campanula ſerpilliſolia. *Bauh. pin.* 93. *prodr.* 35. *Alt. npſ.* 1720. *p.* 96. *t.* 1. *Scheuch. alp.* 131. *Tourn. inſt.* 112. *Rudb. lapp.* 96. *f.* 1. *Bauh. hiſt.* 2. 816. *Mor. hiſt.* 5. 2. 19. *Raii hiſt.* 741.
Nummularia norvegica, flore purpureo. *Kyll. act. hafn.* 2. 346. *f.* C.—repens, fol. dentato, flor. geminis. *Petiv. cent.* 76.
N. major, rigidioribus & rarius crenatis foliis. flore purpureo gemello. *Pluk. alm.* 264.

DESCRIPTION, *&c.*

1. Root perennial, fibrous. Stems filiform, from three to ſix feet long, looſe, creeping, round, perennial, ferruginous, with a few white hairs ſcattered over them. Leaves oppoſite, roundiſh-ovate, ſpreading, attenuated into the petioles, with two or three ſerratures on each ſide, having a few upright hairs on the upper ſurface, and only on the midrib in the lower. Branches alternate, ſimple, upright, with ſix or eight leaves on them. Pedunculs terminating the older branches, ſolitary, a finger's length, upright, having different hairs ſcattered over them; ſome very minute, reflex, pellucid, others ſpreading, ſecreting a glutinous juice. Univerſal umbel biſid, with diſtant rays: partial one-flowered, horizontal. Univerſal involucre two-leaved, upright, awl-ſhaped very ſhort: partial the ſame. Perianth of the fruit ovate, a little leſs than the germ, ciliate, the cilias pellucid, bent outwards; it has ſhort hairs ſcattered all over it, terminated by a yellow globular gland. Germ ovate, with glandular hairs. Perianth of the flower five-parted, upright, ciliare with pale hairs, and having glandular hairs. Perianth of the flower five-parted, upright, ciliate with pale hairs, and having glandular hairs ſcattered about it; the calycine ſegments lanceolate-awl-ſhaped. Corolla turbinate, three times as long as the calyx, ſmooth and white on the outſide, having a few hairs ſcattered over it within, with blood-red veins within the cavity, which are yellow on the lower ſide. Stigma hiſpid.

The ſmell of the flowers approaches to that of Ulmaria or Meadow-ſweet, and is ſo ſtrong during the night as to diſcover this little plant at a conſiderable diſtance.

In Sweden, where the plant is common, an infuſion of the leaves in milk is employed in the rheumatiſm. In Norway, they cure the itch with a decoction of it. And in Oſtrobothnia they apply it in a cataplaſm or by fomentation to diſorders of the feet in ſheep [d].

Native of Sweden, Norway, Switzerland, Sileſia, Italy, Ruſſia, Siberia, Canada, in large foreſts and woods, eſpecially where moſs abounds; and flowers in june. It was introduced here in 1762, by Mr. Andrew Kallſtroem [e]. I ſuggeſted ſo long ſince as the year 1763, that it was probably a native of Ireland, but I do not know that the ſuggeſtion has been verified; it has however been at length detected in Scotland, in an old fir wood at Mearns near Aberdeen, by Profeſſor James Beattie, junior, of the Mareſchal College there [f].

LINOCARPUM. See *Linum.*

LINOCIERA. (*So named by Swartz from Geofroy Linocier, Phyſician at Tournon in the Vivarais: author of* L'Hiſtoire des Plantes. Par. 1584. 12°.)

[a] Clayton in Gron. virg. [b] Swartz. [c] Thunberg. [d] Linn. faec. [e] Hort. kew. [f] Linn. tranſ. v. 3. 335.

Lin. gen. Schreb. n. 1709. *p.* 784.
Thouinia. *Swartz prodr.* 14.
Class. 2. 1. Diandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* very small, four-toothed, obtuse, permanent.
COR. *Petals* four, equal, linear, channelled, upright, spreading at top, many times longer than the calyx.
STAM. *Filaments* two; very short, rather broad. *Anthers* linear, two-furrowed, length of the corolla, upright, each adhering slightly to the other side of the two petals.
PIST. *Germ* superior, ovate, four-cornered. *Style* short. *Stigma* oblong, two-cleft.
PER. *Berry* ovate, sharp-pointed, two-celled.
SEEDS solitary, oblong.

ESSENTIAL CHARACTER.

Cal. four-toothed. *Cor.* four-petalled. *Anthers* connecting two opposite petals at the base. *Berry* two-celled.

Dr. Smith suggests, that by examining the fruit in an early state, it will be found that Linociera of Schreber is not distinct from Chionanthus[*].

Thouinia nutans of the Supplement is Chionanthus zeylanica. *Lin. spec.* &c.

Swartz has Thouinia ligustrina, a West Indian plant, belonging to this genus: and therefore probably a Chionanthus.

Dr. Smith has given the name of Thouinia to a very different plant.

LINOPHYLLUM. See *Thesium.*
LINOSYRIS. See *Corysocoma.*]
LINUM. (*Λινον of Dioscorides, Theophrastus*, &c.)
Lin. gen. n. 389. *Reich. n.* 419. *Schreb. n.* 528. *Gærtn. t.* 112. *Tournef. t.* 176. *Juss.* 303.
Radiola. *Dill. gen.* 7. Chamælinum. *Vaill. par.* 4. *f.* 6. Linocarpon. *Mich.* 21.
Class. 5. 5. Pentandria Pentagynia.
Nat. order of *Gruinales. Caryophyllex*, Juss. *Gerania*, Smith.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, lanceolate, upright, small, permanent.
COR. funnel-form. *Petals* five, oblong, gradually wider above, obtuse, more spreading, large.
STAM. *Filaments* five, awl-shaped, upright, length of the calyx; (also five rudiments, alternating.) *Anthers* simple, arrowed.
PIST. *Germ* ovate. *Styles* five, filiform, upright, length of the stamens. *Stigmas* simple, reflex.
PER. *Capsule* globose, rudely pentagonal, ten-valved, gaping at the tip. *Partitions* membranaceous, very thin, connecting the valves.
SEEDS solitary, ovate-flattish, acuminated, smooth.
OBS. *In many species (whether in all?) the filaments are united at the base. In* L. Radiola *a fifth part is excluded.*

ESSENTIAL CHARACTER.

Cal. five-leaved. *Pet.* five. *Caps.* ten-valved, ten-celled. *Seeds* solitary.

SPECIES.

* *With alternate leaves.*

1. Linum usitatissimum. *Common Flax.*
Lin. spec. 397. *fyst.* 302. *Reich.* 1. 758. *mat. med.* 90. *Woodv. med. bot.* 303. *t.* 111. *hort. cliff.* 113. *upsl.* 71. *Hudf. angl.* 133. *Wither. arr. ed.* 3. 321. *Curt. lond.* 5. 22. 326. *Lightf. scot.* 173. *Relh. cant. n.* 252. *Hall. helv. n.* 836. *Gmel. fib.* 4. 115. *Scop. carn. n.* 381. *Roy. lugd.* 2. 69. *Knipb. cent.* 9. *n.* 57. *Knorr. del.* 2. *t.* L. 9. *Ludw. elt. t.* 144. *Zorn. it.* 251. *Kruck. filef. n.* 485.
α. L. sylvestre. *Matth.* 416.—sativum plane referens. *Baub. hist.* 3. 492. — vulgatius. *Park. theat.* 1334.
L. arvense. *Baub. pin.* 214. *Raii hist.* 1073.
β. L. *Fuchf.* 271.—sativum. *Baub. pin.* 214. *Ded. pempt.* 533. *Ger.* 444. *emac.* 556. *Raii. syn.* 362. *Blackw. t.* 160. *Mor. hist. f.* 5. *t.* 26. *f.* 1.
γ. L. humile. *Mill. dict. n.* 2.
L. sat. hum. fl. majore. *Boerh. lugdl.* 1. 284.
δ. L. sat. latifolium africanum, fructu majore. *Tourn. inst.* 339.
Calyxes and capsules mucronate, petals ovate, leaves lanceolate, stem generally solitary.
2. Linum perenne. *Perennial Flax.*
Lin. spec. 397. *fyst.* 302. *Reich.* 1. 759. *hort. upsf.* 22. *cliff.* 14. *Gærtn. fruct.* 2. 147. *Hudf. angl.* 133. *Wither. arr. ed.* 3. 321. *Engl. bot.* 40. *Relh. cant. n.* 253. *Sauv. monsp.* 53. *Gmel. fib.* 4. 115. *Knipb. cent.* 2. 41. *Mill. fig. t.* 166. *f.* 2. *Mor. hist.* 2. 573. 3. 4. *Raii syn.* 362. *n.* 3, 4. *hist.* 1074. 10. *Villars dauph.* 2. 550.
α. decumbens: with a prostrate stem. L. anglicum. *Mill. dict. n.* 5.
β. erectum: with an upright stem. L. perenne. *Mill. dict. n.* 6.
Calyxes and capsules blunt, leaves lanceolate quite entire.
[3. Linum monogynum. *One-styled Flax.*
Forst. flor. austral. n. 145.
Calyxes acute, leaves linear-lanceolate even, stem round, shrubby and branched at the base, flowers one-styled.
4. Linum viscosum. *Clammy Flax.*
Lin. spec. 398. *fyst.* 302. *Reich.* 1. 759.
L. sylvestre latifolium, caule viscoso, flore rubro. *Bauh. pin.* 214. *Raii hist.* 1075.
Leaves lanceolate hairy five-nerved.]
5. Linum hirsutum. *Hairy Flax.*
Lin. spec. 398. *fyst.* 302. *Reich.* 1. 759. *Jacqu. austr.* 1. *t.* 71. *Scop. carn. n.* 382.
L. sylvestre 1. latifolium. *Clus. hist.* 1. 317.—hirsutum cæruleum. *Baub. pin.* 214. *Mor. hist.* 2. 573. *f.* 5. *t.* 26. *f.* 5. *Raii hist.* 1072.
Calyxes hirsute acuminate sessile alternate, branch-leaves opposite.
6. Linum narbonense. *Narbonne Flax.*
Lin. spec. 398. *fyst.* 302. *Reich.* 1. 760. *Hall. helv. n.* 837. *Zanon.* 177. 147. *Magn. monsp.* 161. *Sauv. monsp.* 54. *Gor. prov.* 420. *n.* 6. *Villars dauph.* 2. 550.
Calyxes acuminate, leaves lanceolate stiff rugged acuminate, stem round branched at the base, filaments connate.
[7. Linum reflexum. *Reflex-leaved Flax.*
Ait. hort. kew. 1. 387.
L. sylvestre cæruleum folio acuto. *Baub. pin.* 214. *prodr.* 107. *Raii hist.* 1074. 8.
Calyxes acuminate, leaves ovate-lanceolate acuminate reflex even, filaments connate.]
8. Linum tenuifolium. *Fine-leaved Flax.*
Lin. spec. 398. *fyst.* 302. *Reich.* 1. 760. *Hall. helv. n.* 838. *Scop. carn. n.* 386. *Pallich pal. n.* 318. *Jacqu. austr.* 3. 9. *t.* 215. *D'Asso arrag. n.* 287. *Villars dauph.* 2. 550. *Kruck. filef. n.* 486.
L. sylvestre angustifolium flore magno. *Baub. pin.* 214. *Raii hist.* 1073. 11.
L. sylv. 5. angust. *Clus. hist.* 1. 318.
β. L. sylv. angust. flore magno intense cæruleo. *Tournef. inst.* 340.
γ. L. sylv. angust. fl. magno violaceo. *Tourn. inst.* 340.
δ. L. sylv. angust. fl. magno albo lineis purpureis distincto. *Tourn. inst.* 340.
Calyxes acuminate, leaves linear-setaceous rugged backwards.
[9. Linum angustifolium. *Narrow-leaved Flax.*
Hudf. angl. 134. *Engl. bot.* 381.
L. tenuifolium. *Wither. arr. ed.* 3. 322.—ζ. *Lin. spec.* 399. *Reich.* 761.
L. sylv. angust. flor. dilute purpurascentibus vel carneis. *Raii hist.* 1074. *syn.* 362.
Calyx obsoletely three-nerved, leaflets and capsule acuminate, leaves linear-lanceolate three-nerved, stems numerous a little inclined.
10. Linum gallicum. *Annual yellow Flax.*
Lin. spec. 401. *fyst.* 302. *Reich.* 1. 761. *Ger. prov.* 421. 9. *t.* 16. *f.* 1. *Sauv. monsp.* 53.
L. sylvestre minus, flore luteo. *Baub. pin.* 214.
Calyxes awl-shaped acute, leaves linear-lanceolate, peduncles of the panicle two-flowered, flowers subsessile.]
11. Linum maritimum. *Sea Flax.*
Lin. spec. 400. *fyst.* 302. *Reich.* 1. 761. *hort. cliff.* 114. *Jacqu. hort.* 2. 72. *t.* 154. *Knipb. cent.* 9. *n.* 56.

* Linn. transf. 3. 257.

n. 56. *Sauv. monſp.* 147. *Guett. ſtamp.* 2. 439. Ger. prov. 419. 3. *Villars dauph.* 2. 551.

L. maritimum luteum. *Bauh. pin.* 214.

L. lut. narbonenſe. *Bauh. hiſt.* 3. 454. *Rati hiſt.* 1074.

L. ſylveſtre. *Dod. pempt.* 534. *Camer. epit.* 201.

L. marinum lut. *Ger. emac.* 560. *f.* 7.

L. ſylv. anguſtifolium lut. *Park. theat.* 1336. *f.* 7.

Calyxes ovate acute awnleſs, leaves lanceolate, the lower ones oppoſite.

[12. Linum alpinum. *Alpine Flax.*

Lin. ſpec. 1672. *ſyſt.* 302. *Reich.* 1. 762. *Jacqu. vind.* 229. *auſtr.* 4. 11. *t.* 321. *Allion. pedem. n.* 1688. *Villars dauph.* 2. 551. *Krock. ſilef. n.* 487.

L. ſylv. 5. anguſtifolii aliud genus. *Cluſ. hiſt.* 318.

Calyxes rounded blunt, leaves linear ſharpiſh, ſtems declinate.

13. Linum auſtriacum. *Auſtrian Flax.*

Lin. ſpec. 399. *ſyſt.* 302. *Reich.* 1. 762. *mant.* 359. *Scop. carn. n.* 388. *Pollich pal. n.* 319. *Jacqu. auſtr.* 5. 8. *t.* 418. *Krock. ſilef. n.* 488.

L. ſylv. anguſt. foliis rarioribus. *Bauh. pin.* 214.

L. ſylv. 2. *Tabern. ic.* 822.

Calyxes rounded blunt, leaves linear ſharp ſtraightiſh.

14. Linum virginianum. *Virginian Flax.*

Lin. ſpec. 399. *ſyſt.* 303. *Reich.* 1. 762. *Gron. virg.* 35. 48.

Calyxes acute alternate, capſules awnleſs, paniele filiform, leaves lanceolate, root-leaves ovate.

15. Linum flavum. *Perennial Yellow Flax.*

Lin. ſpec. 399. *ſyſt.* 303. *Reich.* 1. 763. *mant.* 360. *Scop. carn. n.* 384. *Jacqu. auſtr.* 3. *t.* 214. *Curt. magaz.* 312.

L. ſylv. latifolium luteum. *Bauh. pin.* 214. *Park. theat.* 1335. *n.* 4.

L. latif. luteum. *Bauh. hiſt.* 3. 454. *f.* 1. *Raii hiſt.* 1074.

L. ſylv. 3. latif. *Cluſ. hiſt.* 1. 317. *Ger. emac.* 560. *f.* 6.

Calyxes ſubferrate-rugged lanceolate ſubſeſſile, paniele with dichotomous branches.]

16. Linum ſtrictum. *Upright Flax.*

Lin. ſpec. 400. *ſyſt.* 303. *Reich.* 1. 763.

L. fol. aſperis umbellatum luteum. *Raii hiſt.* 1076.

Lithoſpermum linariæ folio monſpelienſium. *Bauh. pin.* 259. *Park. theat.* 433. *n.* 8. *Magn. monſp.* 164.

Paſſerina Lobelii. *Bauh. hiſt.* 3. 455.

Calyxes awl-ſhaped, leaves lanceolate ſtiff mucronate rugged at the edge.

[17. Linum ſuffruticoſum. *Shrubby Flax.*

Lin. ſpec. 400. *ſyſt.* 303. *Reich.* 1. 763.

L. anguſt. frutieoſum valentinum, fol. rigidis & aculeatis. *Tournef. inſt.* 340.

Leaves linear acute rugged, ſtems ſuffruticoſe.

18. Linum arboreum. *Tree Flax.*

Lin. ſpec. 400. *ſyſt.* 303. *Reich.* 1. 763. *Schreb. in nov. act. nat. cur.* 3. 478. *Alp. exot.* 19. *t.* 13. *Curt. magaz.* 234.

Leaves wedge-ſhaped, ſtems arboreſcent.

19. Linum campanulatum.

Lin. ſpec. 400. *ſyſt.* 303. *Reich.* 1. 763. *Sauv. monſp.* 76. *Villars dauph.* 2. 552. *Allion. pedem. n.* 1690.

L. ſylv. luteum fol. ſubrotundis. *Bauh. pin.* 212. *Tournef. inſt.* 340. *Curid.* 290.

Rapunculus nemoroſus anguſtifolius parvo flore. *Bauh. pin.* 93.

Campanula lutea linifolia, &c. *Lob. ic.* 414. *Bauh. hiſt.* 2. 817. *Ger. emac.* 452. *f.* 4. *Park. theat.* 651. *f.* 14. *Raii hiſt.* 737. 2.

The baſe of the leaves dotted-glandular on both ſides.

* *With oppoſite leaves.*

20. Linum africanum. *African Flax.*

Lin. ſpec. 401. *ſyſt.* 303. *Reich.* 1. 764. *mant.* 360. *L'Herit. ſtirp. nov.* 2. *t.* 3.

L. afric. luteum fol. conjugatis. *Boerh. lugdb.* 1. 284.

Leaves linear-lanceolate, flowers terminating peduncled.]

21. Linum nodiflorum. *Knotted Flax.*

Lin. ſpec. 401. *ſyſt.* 303. *Reich.* 1. 764. *hort. cliff.* 114.

L. luteum ad ſingula genicula floridum. *Bauh. pin.* 214. *Mor. hiſt.* 2. 574. *ſ.* 5. *t.* 26. *f.* 11. *Raii hiſt.* 1076.

L. lut. ſylveſtre latifolium. *Col. ecphr.* 2. 79. *t.* 80.

Floriferous leaves oppoſite lanceolate, flowers alternate ſeſſile, calyxes the length of the leaves.

22. Linum catharticum. *Purging Flax.*

Lin. ſpec. 401. *ſyſt.* 303. *Reich.* 1. 765. *hort. cliff.* 372. *fl. ſuec. n.* 271. *mat. med.* 91. *Huſſ. angl.* 134. *Wither. arr. ed.* 323. *Curt. lond.* 151. *Engl. bot.* 382. *Lightf. ſcot.* 174. *Reih. cant. n.* 254. *Hall. helv. n.* 839. *Scop. carn. n.* 389. *Neck. gallob.* 158. *Weig. obſ.* 26. *Pollich pal. n.* 230. *Leers herborn. n.* 235. *Fl. dan.* 851. *Villars dauph.* 2. 552. *Allion. pedem. n.* 1693. *Krock. ſilef. n.* 489. *Blackw. t.* 368. *Knipb. cent.* 3. *n.* 58. *Ludw. elt. t.* 143. *Zorn. ic.* 210.

L. ſylveſtre catharticum. *Ger. emac.* 560. *f.* 5. *Raii hiſt.* 1076. *ſyn.* 362. *Petiv. brit. t.* 55. *f.* 12.

L. pratenſe floſculis exiguis. *Bauh. pin.* 214.

Chamælinum Cluſii flore albo, ſ. L. ſylv. cathart. *Park. theat.* 1336, 10.

C. ſubrotundo folio. *Barrel. ic.* 1165. 1.

Spergula bifolia lini capitulis. *Loeſ. pruſſ.* 261. *t.* 86.

Aliſne verna glabra floſc. albis, vel potius L. minimum. *Bauh. hiſt.* 3. 455. 2.

Leaves ovate-lanceolate, ſtem dichotomous, corollas acute.

[23. Linum Radiola. *Leaſt Flax,* or *All-ſeed.*

Lin. ſpec. 402. *ſyſt.* 303. *Reich.* 1. 765. *hort. cliff.* 114. *fl. ſuec. n.* 272. *Huſſ. angl.* 134. *Wither. arr. ed.* 3. 323. *Lightf. ſcot.* 174. *Hall. helv. n.* 840. *Knipb. cent.* 8. *n.* 59. *Fl. dan.* 173. *Pollich pal. n.* 321. *Neck. gallich.* 159. *Krock. ſilef. n.* 490.

Radiola. *Dill. giſſ. app.* 127. *t.* 7. *Ephem. nat. cur. cent.* 5, 6. *app. t.* 9.—vulgaris ſerpilliifolia. *Raii ſyn.* 345. *t.* 15. *f.* 3. *Petiv. brit. t.* 53. *f.* 12.

Chamælinum vulgare. *Vaill. par.* 33. *t.* 4. *f.* 6.

Linocarpon ſerpilli folio multicaule & multiflorum. *Mich. gen.* 23. *t.* 21.

Polygonum minimum ſ. Millegrana minima. *Bauh. pin.* 282.

Millegrana min. *Ger. emac.* 569. 2. *Raii hiſt.* 1026. —f. Herniaria minor. *Park. theat.* 447. *n.* 11.

Stem dichotomous, flowers four-ſtomened four-ſtyled.

24. Linum quadrifolium. *Four-leaved Flax.*

Lin. ſpec. 402. *ſyſt.* 303. *Reich.* 1. 765.

L. africanum, rubiæ foliis quaternis ſtellatis. *Raii ſuppl.* 525.

Leaves in fours.

25. Linum verticillatum. *Whorl-leaved Flax.*

Lin. ſpec. 402. *ſyſt.* 303. *Reich.* 1. 766.

L. ſylveſtre flore cæſio foliis verticillatis. *Bocc. muſ.* 2. 49. *t.* 42. *Raii ſuppl.* 524. *Barr. rar.* 685. *t.* 1226.

Leaves in whorls.

DESCRIPTIONS, *&c.*

The numerous ſpecies of Flax are chiefly herbaceous, ſome however are ſuffruticoſe or woody at bottom, one or two are ſhrubby, and one arboreous. In moſt the leaves are alternate (one to nineteen), in fewer oppoſite (twenty to twenty-five), generally lanceolate or linear. Flowers ſolitary, axillary or ſometimes but ſeldom oppoſite to the leaves*. Corolla commonly blue, fading ſometimes to white, but in ſome ſpecies yellow (10 and 15, &c.) red in n. 4, 8.

The genus belongs rather to the natural order of *Gerania*, than of Caryophylleæ, where Juſſieu has placed it; and the accurate and learned author himſelf confeſſes that it is diſtinct from the latter order.

1. Root annual, ſimple, fibrous, pale brown. Stem upright, eighteen inches, two feet and even more in height, round, ſmooth, leafy, branched only at top. Leaves ſeſſile, growing cloſe together, almoſt upright, perfectly entire. Flowers large, growing in a panicle, on round ſmooth pedunceles. Calycine leaflets ovate, keeled, with a membranous edge, when magnified appearing to be fringed with hairs. Petals wedge-ſhaped, deciduous, ſky-blue, ſtreaked with deeper-coloured lines; white at the claws, and ſomewhat gnawed at the

* Juſſieu.

tip. Filaments dilated at the base, and slightly united there. Anthers at first oblong, but finally sagittate, incumbent, blue. Germ ovate, shining. Styles somewhat club-shaped or thicker towards the top, blue, slightly cohering at the base [b].

This valuable plant is supposed to have been derived originally from those parts of Egypt which are exposed to the inundations of the Nile [c]. In the earliest record we have (Exodus ix. 31.) Flax is mentioned as a plant cultivated in that country; for which reason antiquaries have been surprised to find the vestments of mummies made of cotton. It is highly probable however that mankind made thread of cotton, before the use of Flax was discovered; the former being produced in a state ready for spinning, whereas the latter requires a long process before it can be brought to that state.

It is difficult, or perhaps impossible to determine when the culture of Flax was first introduced into this country. In the simplicity of former times, when families provided within themselves most of the necessaries and conveniencies of life, every garden supplied a proper quantity of hemp and flax. The macerating or steeping, necessary to separate the fibres by rotting the rest of the stalk, was found to render water so offensive, that by the 33d of Henry VIII. it was enacted, that no person should water any Hemp or Flax in any river or other stream, or in any common pond where beasts are used to be watered, under the penalty of twenty shillings. The growth of Hemp and Flax has lately been encouraged by a premium, under an act of parliament.

Flax is now found wild in many parts of Europe, in corn fields. In England it is doubtful perhaps whether it be aboriginal, though it is said to be very common in the western counties, not only in corn fields, but in pastures and on downs. It flowers in june and july [d].

The seeds of Flax (lin-seed) yield by expression only, a large proportion of oil, which is an excellent pectoral, as is likewise the mucilaginous infusion. They make an easy and useful poultice in cases of external inflammation, and they are the food of several small birds. After the oil is expressed, the remaining farinaceous part, called oil-cake, is given to oxen, who soon grow fat upon it. The oil itself differs in several respects from other expressed oils: it does not congeal in winter, nor does it form a solid soap with fixed alkaline salts, and it acts more powerfully as a menstruum upon sulphureous bodies. When heat is applied during the expression it gets a yellowish colour, and a peculiar smell. In this state it is used by painters and varnishers. It is well known that the fibres of the stem are manufactured into linnen, and that this linnen, when worn to rags, is made into paper [e].]

Mr. Miller remarks, that although the plants of Flax when crouded together in cultivation, rise only a foot and half in height, with a slender unbranched stalk; yet when they are allowed room will rise more than two feet high, and put out two or three side branches towards the top, especially in a good soil.

He makes a distinct species of the dwarf variety, because it has stronger and shorter stalks branching out more, the leaves broader, the flowers larger with the petals indented at the extremity, the seed-vessels much larger, and the peduncles longer.

[The wild differs no otherwise from the cultivated plant than most others do.

Flax in German is *Flacks* or *Lein*. In Dutch, *Vlasch*. In Danish, *Hor* or *Harr*. In Norwegian, *Lin*. In Swedish, *Lin*. In French, *Lin*. In Italian and Spanish, *Lino*. In Portugueze, *Linho*. In Russian, Polish and all the languages from the Sclavonian, *Len* or *Lan*. All the European languages, except the Danish, use *Lin*, when they speak of the seed.]

2. Mr. Miller thus describes the wild perennial Flax. From its perennial root arise three or four inclining stalks, having short narrow leaves towards their base, but scarcely any about the top. The flowers are produced at the ends of the stalks, sitting very close; they are blue, and about the size of the cultivated sort, and are succeeded by pretty large round seed-vessels, ending in acute points. It flowers about the same time as the preceding, but the roots will continue four or five years.

[The calycine leaflets are oval, hollow, with a short bluntish point at the end, not fringed or hairy, marked with five lines [f]. Its strong and knobbed root produces a multitude of slender stems, about a foot long, spreading in every direction, but more or less curved upwards. The flowers appear from june to august; they are of a delicate texture, and very elegant blue colour [g].

Ray mentions two varieties, one upright, with a larger flower and head: the other procumbent, with a smaller flower and head. He thought them to be only varieties, and Mr. Hudson asserts that he has gathered both from the same root; adding, that in the latter the stamens are shorter; in the former, longer than the styles.

Native of Cambridgeshire, Norfolk, Suffolk, Northamptonshire, on calcareous pastures.

β. Mr. Miller distinguishes the upright Siberian plant.] The stems of this are strong, in number according to the size of the root, in height from three to five feet according to the soil; they divide into several branches at top. Leaves narrow-lanceolate, not much more than an inch long, and an eighth of an inch broad, of a deep green, ending in acute points. The flowers form a kind of umbel at the ends of the branches; the stalks rising nearly of the same height. The flowers are large and of a fine blue; appear in june, and are succeeded by obtuse seed-vessels, ripening in september.

[These are thus described by the accurate Gærtner. Capsule the size of a pea, spherical, striated, pale straw-colour, ten-celled, ten-valved. Valves crustaceous, with a groove on the back, opening at top, and connected by means of the partitions; which are membranaceous, folded or doubled, with their laminæ parted on the outside, and so inserted into the margins of the valves, that when these open the others unfold like the leather of a pair of bellows. Receptacle none, but the seeds are fixed to the central margin of the partitions. Seed solitary, ovate, mucronate at top, compressed, dark-coloured, shining, with a minute oblong navel below the tip. The structure of the partition in the capsule of Linum, is distinct from all others as far as we know [h].]

Mr. Miller affirms that Siberian Flax always has more branching stalks, longer and broader leaves, larger flowers, and much larger blunter seed-vessels than our English perennial Flax. He also recommends the cultivating it for use, being perennial, earlier, more productive, and yielding a stronger, though not so fine a thread.

3. Native of New Zealand. In Queen Charlotte's Sound.

4. Root woody, perennial. Leaves with hairs as long as the leaves themselves, acuminate, five-nerved. Corolla flesh-coloured, with lines of a blood-red colour [i]. Ray found it near Augsbourg. It has also been seen near Ingolstadt, in the mountains near Bologna, &c. The stalk is glutinous or clammy, whence its name. Allione asserts that it differs in nothing from the next species.

5. Root woody, perennial. Stems round, simple, hairy, from a foot to two feet in height, often smooth at bottom, leafy all over, upright, branching at top into flowering corymbs. Leaves lanceolate or ovate, acuminate, sessile, alternate except a few at the ends of the branches, which are opposite, hairy especially at the edge and on the dorsal nerves, but sometimes almost smooth. Flowers on very short peduncles, not from the axils, but a little higher, and also from the division of the branches. Calycine leaflets lanceolate, half the length of the corolla. Petals blue marked with lines, firmly embracing each other at the lower part, though not united at the base, representing even after they are fallen a monopetalous funnel-form flower.

[b] Curtis. [c] Withering. [d] Curtis. [e] Withering.

[f] Stokes in Withering. [g] Engl. bot. Raii hist. [h] Gærtn. fruct.

Anthers pale. No rudiments of barren ſtamens. Germ hirſute. Capſule roundiſh, ſmooth, ten-celled, five-valved. Scopoli attributes to his L. hirſutum four ſtyles, and a four-celled capſule. Jacquin is of opinion that L. ſylveſtre of the ſame author is the ſame with L. viſcoſum of Linneus. This is diſtinguiſhed from that by the hairs on the edge of the leaves, as well as the ſurface being quite ſimple, and not with glandular heads at top. The leaves of L. hirſutum are ſometimes very plainly three-nerved, and ſometimes the nerves ſcarcely appear. Cluſius's ſecond L. ſylveſtre latifolium does not ſeem to be different from this, notwithſtanding the colour, which varies in this ſpecies, on one hand of a deeper blue, and on the other almoſt white [a].

Linneus obſerves, that this bears a great reſemblance to L. nodiflorum, but that the ſtem is round, the leaves ciliate or hirſute, and broader, the ſtem-leaves alternate, but the branch-leaves oppoſite, the flowers ſeſſile, alternate, the calyxes leafy and long, the branch or floral leaves and the calyxes ciliate with very ſhort glandular briſtles, eſpecially towards the top.

Native of Auſtria, and Hungary.]

6. Stem from a foot to eighteen inches high, branching out almoſt to the bottom into many long ſlender branches. Flowers at the ends of the branches, in a ſort of umbel, ſmaller than thoſe of the firſt ſort, and of a pale blue colour. The ſeed-veſſels are much ſmaller, and not ſo round.

[The root is perennial. Calyxes large, lanceolate, membranaceous at the ſides, moſt exquiſitely acuminate at top, and having a ſort of awl-ſhaped dagger-point [b].

Native of the South of France, Switzerland, Italy. It flowers from may to july. Cultivated by Mr. Miller in 1759 [c].

7. Stem a foot high, round, woody, branched from the baſe. Leaves dark green, ending in a very ſharp dagger-point. Flowers in a ſort of umbel, large, blue [d].

Native of the South of Europe. Introduced in 1778 by Caſimir Gomez Ortega, M. D. It flowers in july [e].

8. Root perennial, woody, branching. Stems aſcending at the baſe, and then erect, round, ſmooth, annual, from ſix inches to a foot in height, branched at top, and there leſs cloſely ſet with leaves. Leaves narrow, acuminate, firm, ſhining, moſtly ſhorter than an inch, ſeſſile, ciliate with whitiſh ſpinules bowing upwards, when examined with a glaſs. Flowers in a ſort of panicle, peduncled. Calyx ciliate at the edges. Petals roſe-coloured, purple or white, nearly twice as long as the calyx. Filaments broader at bottom, and no rudiments of barren ones. Capſules roundiſh-acuminate, ſmooth [f].

Native of the South of Europe.

9. This is moſt nearly allied to L. uſitatiſſimum in all its parts, except in having a woody perennial root producing many ſtems; it differs alſo at firſt ſight in having ſmaller paler flowers. The leaves have three, ſometimes five nerves, their edges entire and ſmooth. Calyx-leaves ſmooth, elliptical, with a ſharp point; in the flowering ſtate ſcarcely more than one nerve is viſible, but as the fruit ripens the calyx becomes diſtinctly three-nerved. Petals entire or ſlightly notched. Valves of the capſules diſtinctly ten, cohering by their inflexed margins, which make the partitions of the ten cells.

The preceding, with which Linneus confounded this has a very long-pointed calyx, with glandular ſerratures, and leaves which have rough edges and only a central nerve. L. perenne is ſufficiently diſtinguiſhable by its more obtuſe five-nerved calyx, and more capitate ſtigmas [g].

Native of Cornwall and Devonſhire, in dry ſandy paſtures, eſpecially near the ſea. Darſham in Suffolk. Minſter in the iſle of Shepey, Beacon-hill and Deal in Kent. By Pett near Haſtings.

10. Root annual. Flowers yellow. Commonly five, but ſometimes only three piſtils. Native of the South of France. Introduced in 1777, by Monſ. Thouin. It flowers in july [h].

11. Root perennial. Stems herbaceous, round, almoſt upright, glaucous, branched at top, a foot high or more. Leaves covering the whole ſtem and branches, oval-oblong, ſharpiſh, glaucous, ſeſſile, upright, quite entire, half an inch long. Peduncles commonly oppoſite to a leaf, upright, one-flowered. Petals yellow. Germ ſmooth. Styles yellow, ending in hirſute ſtigmas. Capſules roundiſh, acute, the ſize of the calyx, ſmooth, five-toothed at top, five-grooved, ten-celled, five-valved. Seeds ovate, compreſſed, browniſh-yellow [i]. Linneus obſerves, that it is allied to the preceding. Native of the South of Europe and the Levant. Cultivated in 1596, by Gerarde. It flowers in july and auguſt [k].

12. Root perennial, branched. Stems herbaceous, ſimple, half a foot or more in length, round, very leafy, procumbent or aſcending, many-flowered and often divided. Leaves quite entire, ſeſſile, the upper ones almoſt upright, the next ſpreading; the lower ones imbricately reflex. Flowers peduncled, large. Petals pale blue, three times as long as the calyx. Capſule roundiſh, ſmooth, containing ten, ovate, ſhining, compreſſed, blackiſh ſeeds [l]. Native of Auſtria, Piedmont, Dauphiné, Sileſia.—Introduced in 1775, by Monſ. Thouin [m].

13. Root perennial, woody. Stems herbaceous, annual, from ſix to eighteen inches long, round, ſimple or divided only into ſhort branches at top, ſometimes for the moſt part procumbent, ſometimes more upright. Leaves ſubſeſſile, quite entire, ſublanceolate-linear, ſmooth. Peduncles one-flowered, filiform, axillary, ſolitary, pendulous before the flowers open, and when in fruit. Petals wide, purpliſh blue or violet with darker lines and a yellow claw, quite entire, reſembling thoſe of the firſt ſort. Filaments and ſtyles blue. Anthers pale. Stigmas greeniſh yellow, headed. Piſtils bent back beyond the ſtamens. Seeds brown. The whole plant is ſmooth. The leaves vary in width [n]. Native of Auſtria and the Palatinate. Introduced in 1775, by Monſ. Thouin. It flowers in june and july [o].

14. Stem filiform, a foot high, panicled. Flowers on very ſhort peduncles. Corollas yellow. Capſules globular, awnleſs. Native of Virginia and Penſylvania [p].

15. Root perennial, woody. Stems herbaceous, upright, from ſix to eighteen inches high, ſmooth, rendered angular by membranes which ſeem to ariſe from the ſides and middle of the leaves. Leaves ſeſſile, narrow-lanceolate, acute, quite entire, ſmooth, thickiſh, about an inch and half in length, having a dot or ſeſſile gland of a bay colour on each ſide at the baſe, as in L. campanulatum. Flowers elegant, upright, on ſhort peduncles, at the end of the branches, and at the diviſions of them. Calycine leaflets acuminate, whitely ſerrate-ſpiny when examined by a magnifier. Petals three times as long as the calyx, yellow, ſtriate-veined, wide and very blunt. Filaments yellow, upright; five twice as long as the calyx with yellow anthers and five others very ſhort and barren, ſtanding alternate with the fertile ones. Styles yellow. Capſule roundiſh, ſharp, browniſh [q].

Native of Auſtria. Introduced by Mr. Curtis about the year 1794, from ſeeds ſent him by Monſ. Daval of Orbe in Switzerland. The flowers open moſt in a morning when the ſun ſhines, and continue in ſucceſſion during june, july, and part of auguſt [r].]

16. This is an annual plant, with an upright ſtalk near a foot and half high. The leaves are about the ſame length with thoſe of common Flax, but a little broader. The ſtalks divide towards the top into ſeveral branches, each ſuſtaining two or three yellow flowers; which appear in july; but the ſeeds ſeldom ripen in England.

[Linneus remarks, that it is a ſtiff, corymbed plant; that the leaves are rugged about the edge, the calyxes awl-ſhaped, twice as long as the fruit. Native of the

[a] Jacquin. [b] Linn. [c] Hort. kew. [d] Bauh. prodr. [e] Hort. kew. [f] Jacquin. [g] Engl. bot. [h] Hort. kew. [i] Jacquin. [k] Hort. kew. [l] Jacquin & Linn. mant. [m] Hort. kew. [n] Linn. [o] Jacquin. [p] Curt. magaz.

South

South of France, Spain, and Sicily. Ray found it near Montpeſſier and in Sicily. Cultivated by Mr. Miller in 1759.]

17. This has a ſhrubby ſtalk a foot high, ſending out ſeveral branches. Leaves very narrow, coming out in cluſters, but on the flowering-branches broader and longer. Flowers at the ends of the branches, erect on long ſlender peduncles. Calyxes acute-pointed. Petals large, entire, white, but before the flowers open pale yellow. They appear in July, but the ſeeds ſeldom ripen in England. The flowering ſtalks decay in the autumn, but the lower ſhrubby part, continues with the other branches all the year.

[Native of Spain, about Aranjuez, but common in the kingdom of Valencia. Mr. Miller ſays he had the ſeeds of his L. fruticoſum from Ortega at Madrid. It ſeems to be the ſame with the ſuffruticoſum of Linneus, and therefore I have given his deſcription, not a word of it being ſaid by Linneus or Quer, though he had ſeen it.

According to the Kew Catalogue it was introduced in 1787, by Monſ. Thouin. But if Mr. Miller's plant be the ſame, he cultivated it in 1759.

18. This beautiful ſpecies forms, if not a tree, as its name imports, a ſhrub of the height of ſeveral feet. It begins to flower in march, and continues flowering to the cloſe of ſummer; but has not yet produced ſeeds in England[a]. Native of the iſland of Candia. Introduced in 1788, by John Sibthorp, M. D[b].

19. Stems ſimple, a fingers length, angular, commonly terminated by three, large, peduncled flowers. Calyxes lanceolate, acuminate. Native of the South of France and Ruſſia[c].

20. Stem ſuffruticoſe, ſtiff, a foot high, round, with ſimple branches. Leaves ſeſſile, upright, even, generally ſhorter than the internodes. Flowers in a terminating umbel, which is four or five-cleft with dichotomous rays. Petals yellow with villoſe claws, and turning tawny. Calyx acuminate, rugged at the edge[d].

Native of Africa. Introduced in 1771, by Monſ. Richard. It flowers in june and july[e].

21. Stem angular, even, biſid or trifid. The leaves have an ovate brown gland at the baſe on each ſide: the ſtem-leaves are alternate lanceolate and even; the branch-leaves oppoſite and narrower. Calyx linear, leafy. Corolla yellow. Capſule globular, acuminate[f].] Root perennial. Stalks two or three, ſlender, ſtiff, dividing at top into two or three ſlender branches. The flowers came out ſingly at the joints, and ſit cloſe to the ſtalks. The calyxes are cut into five ſlender ſegments, longer than the petals.

[Native of Italy. Cultivated by Mr. Miller in 1759.

22. Root annual, very ſmall. Stems ſeveral, from three to nine inches high, aſcending at the baſe then upright, round, ſmooth, branching at top into a forked, leafy, ſlender-ſtalked panicle. Leaves ſeſſile, upright, blunt with a ſlight point, entire, glaucous beneath. The whole herb is ſmooth. When the paniele begins to branch off, its lower branches, as well as the leaves that accompany them, are alternate. Flowers terminating, ſolitary, pendulous before they open, then erect, not unlike thoſe of an Arenaria. Calyx-leaves ovate-lanceolate, pointed, ſerrate, with a ſolitary nerve; the edges fringed with minute glands on foot-ſtalks. Petals white, obovate, pointed, twice the length of the calyx, ſpreading, ſlightly united at the baſe, having three ribs and yellow claws. Filaments united, forming a bag which incloſes the lower half of the germ. Stigmas capitate. Capſule ten-valved, but before it is quite ripe, cohering in pairs by means of the permanent ſtyles. Seeds yellow, ſhining[g].

It ſometimes varies with four ſtamens, and four ſtyles[h].

Native of moſt parts of Europe. This ſmall delicate ſpecies of Flax, called alſo in ſome places Mill-mountain, is very common throughout England in dry and hilly paſtures, and flowers from the end of may to auguſt.

[a] Cart. magaz. [b] Hort. kew. [c] Linn. [d] Ibid. [e] Hort. kew. [f] Linn. [g] Engl. bot. & Curt. lond. [h] Wiggers.

Gerarde celebrates this little plant as a purge. His receipt is a handful of the herb infuſed in a pint of warm white wine all night, and taken in the morning. Lewis preſcribes an infuſion in water or whey of a handful of the freſh leaves, or a dram in ſubſtance of them dried. Dr. Withering recommends an infuſion of two drams or more of the dried herb, as an excellent purge in many obſtinate rheumatiſms: and adds that it frequently acts as a diuretic.

23. Root annual. Stem upright, an inch high or more, very much branched and dichotomous, round, filiform, ſmooth. Leaves ſeſſile, ovate, acuminate, quite entire, bright green, ſmooth, a line and half long and a line broad. Flowers upright, ſolitary, in little bundles at the ends of the branches, the lower ones on peduncles more than two lines in length: they are ſmall, and white. Calyx four-leaved, the length of the corolla. Petals four, upright, ſmall, roundiſh, blunt. Stamens and ſtyles four[a]. Hence ſome have ſeparated this ſpecies from the reſt, and have made it a ſeparate genus under its own name of Radiola.

Native of many parts of Europe. With us on moiſt ſandy heaths, flowering in july and auguſt. Its Engliſh names are *All-ſeed* and *leaſt Rupture-wort*.

24. From a thick woody root this puts up ſeveral ſtems, ſix inches high or more, ſlender, upright, with leaves in fours at intervals, as in the ſtellate plants, dividing at top into branches, which ſupport large blue flowers[b].

Native of the Cape of Good Hope.

25. This is an annual plant, and does not exceed a foot in height. Stems round, branched. Leaves in whorls, upright, acute, ſcarcely an inch in length. Flowers violet or blue-gray. Capſule round, pointed. Seeds olive-coloured[c]. The calyxes and upper leaves are villoſe.

Native of Italy[d]: near Rome.

The ſpecies may be diſtinguiſhed at one view from the following table.

Leaves alternate.
1 to 19. Lanceolate. 1. 2. 4. 6. 11. 14. 15. 16.
- Calyxes mucronate. Corolla blue. 1.
- —— blunt. Corolla blue. 2.
- —— acuminate. Corolla red. 4.
- —— blue. 6.
- —— ovate acute. Corolla yellow. 11.
- —— acute. Corolla yellow. 14.
- —— ſubſerrate-ragged. Corolla yellow. 15.
- —— awl-ſhaped. Corolla yellow. 16.

Linear-lanceolate. 3. 9. 10.
- Calyxes acute. One Style. Corolla blue. 3.
- —— obſoletely three-nerved. Corolla fleſh-coloured. 9.
- —— awl-ſhaped acute. Corolla yellow. 10.

Ovate-lanceolate. 5. 7.
- Calyxes hirſute acuminate. Corolla blue. 5.
- —— ſmooth acuminate. Corolla blue. 7.

Linear-ſtaceous. Corolla roſe-coloured. 8.

Linear. 12. 13. 17.
- Calyxes rounded blunt. 12. 13.
  - Stems declinate. Corolla blue. 12.
  - —— procumbent. Corolla blue. 13.
- Calyxes acuminate. Stems ſuffruticoſe. Corolla white from yellowiſh. 17.

Wedge-ſhaped. Corolla yellow. 18.

Spatulate. Corolla yellow. 19.

Leaves oppoſite.
20 to 25.
- Linear-lanceolate. Corolla yellow. 20.
- Lanceolate. Corolla yellow. 21.
- Ovate-lanceolate. Corolla white. 22.
- Ovate-acuminate. Corolla white. 23.
- In fours. Corolla blue. 24.
- In whorls. Corolla blue. 25.]

PROPAGATION AND CULTURE.

1. Flax ſhould be cultivated upon a rich ſoil, that has not been ploughed for ſeveral years, upon which it always makes the beſt improvement; but as it draws greatly from the ſoil, it ſhould not be ſown two years together upon the ſame ground, nor in leſs than after five or ſix years interval.

The ground ſhould be as clean from weeds as poſſible: in order to have it ſo, it ſhould be fallowed two winters and one ſummer, obſerving to harrow the ground well between each ploughing, particularly in ſummer, to deſtroy the young weeds ſoon after they appear: this will alſo break the clods, and ſeparate the parts

[a] Pollich. [b] Ray ſuppl. [c] Barrelier. [d] Linn.

ſo, that they will fall to pieces on being ſtirred. If the land ſhould require dung, that ſhould not be laid on till the laſt ploughing, when it muſt be buried in the ground: but this dung ſhould be clear from ſeeds of weeds, which it may be by laying it in a heap and fermenting it well. Juſt before the ſeaſon for ſowing the ſeed the land muſt be well ploughed, and laid flat and even. The ſeeds ſhould be ſown at the end of march or the beginninnig of april, when the weather is mild and warm.

The common way is to ſow the ſeed broadcaſt, and to allow from two to three buſhels of ſeed to an acre: but from many repeated trials I have found it a much better method to ſow the ſeeds in drills, at about ten inches diſtance from each other, by which half the quantity of ſeed uſually ſown will produce a greater crop; and when the Flax is thus ſown, the ground may be eaſily hoed to deſtroy the weeds: if this operation be twice repeated in dry weather, it will keep the ground clean till the Flax is ripe: this may be done at half the expenſe which hand-weeding will coſt, and will not tread down the plants nor harden the ground, which by the other method is always done; and it is abſolutely neceſſary to keep the Flax clean from weeds, otherwiſe they will overbear and ſpoil the crop.

Some recommend feeding ſheep with the Flax, when it is a good height; and affirm that they will eat the weeds and graſs, and do the Flax good, and if they ſhould beat it down, that it will riſe again with the next rain. But this is a very wrong practice, for if the ſheep gnaw the Flax, it will ſhoot up very weak, and never come to half the ſize it would have done, if it had not been cropped: and if the ſheep like the crop better than the weeds, they will devour that, and leave the weeds untouched.

Towards the end of auguſt or at the begi nning of ſeptember the Flax will begin to ripen, and it muſt not ſtand to be over ripe: it muſt therefore be pulled up as ſoon as the heads begin to change brown and hang downwards, otherwiſe the ſeeds will ſoon ſcatter and be loſt; ſo that the pluckers muſt be nimble, in tying up the plants in handfuls, and ſetting them upright, till they are dry enough to be houſed. If the Flax be pulled when it firſt begins to flower, the thread will be whiter, but then the ſeed will be loſt: the thread however will be ſtronger when Flax is left till the ſeed is ripe, provided it does not ſtand too long; but the colour of it will not be ſo good.

The Siberian perennial Flax (n. 2) has been tried, and anſwers very well for making common ſtrong linnen, but the thread is not ſo fine or white as that which is produced from the common ſort; but as the roots of this will continue many years, it will require little other culture but to keep it clean from weeds, which cannot well be done, unleſs the ſeeds be ſown in drills, that the ground may be conſtantly kept hoed to deſtroy the weeds when young. This ſort muſt have the ſtalks cut off cloſe to the ground when ripe, and then managed in the ſame way as the common ſort: but it ſeldom produces more than three crops that will pay for ſtanding.

Mr. Miller mentions another ſort with a biennial root, which he therefore names L. bienne. He received it from Iſtria, and ſays that it produced the fineſt thread of all the ſorts which he had tried. It grows taller than the common Flax, and in gardens lives through the winter without receiving the leaſt injury from froſt. Mr. Miller gave a parcel of the ſtalks of this, with the Spaniſh and Siberian perennial ſorts, to a perſon well ſkilled in watering, breaking and dreſſing Flax, who having prepared them, aſſured him, that the Iſtrian Flax was by much the fineſt of the three, and was in goodneſs preferable to any he had ſeen.

The other ſorts are chiefly preſerved in Botanic gardens. L. catharticum (n. 22.) or purging Flax, is one of thoſe plants which refuſe culture; the ſeeds whether ſown in ſpring or autumn will ſeldom come up.

[Several of the ſpecies are handſome plants. The Siberian Flax (n. 2.) is now very commonly found among hardy perennials in the borders of large flower-gardens and plantations, and is eaſily increaſed either by ſeeds or parting the roots.

L. flavum (n. 15.) bears large yellow flowers, and is a hardy perennial. It appears to be eaſy of culture, and ſucceeds beſt in a ſoil moderately ſtiff and moiſt. The ſeeds vegetate freely, and it may be increaſed either by parting the roots in autumn, or by cuttings of the young ſhoots.

Some of the ſorts (n. 6. 17. 18. 20.) require the protection of a Greenhouſe. N. 17, 18. 20. may be increaſed by cuttings, but not without ſome difficulty. They ſeldom or ever ripen their ſeeds in this country.

Old paſtures, eſpecially on land formed from the ouze or ſediment of great rivers, are the beſt adapted to the growth of Flax. In Reedneſs, a tract of land in the county of York, on the ſouth ſide of the river Ouze, near its junction with the Trent, they frequently plough their old paſtures, when the herbage begins to fail, and adopt the following courſe of crops, viz. 1. Flax. 2. Rape or Cole. 3. Flax: and if the ground ſtill continue too rank for Corn, they add 4. Rape. 5. Flax. 6. Oats.

When they break up the paſture, they plough the ſward in december, about three inches deep; in this ſtate it receives the winter's froſt, and without any more preparation they ſow the ſeed (linſeed) two buſhels on an acre, the ſecond or third week in april, if the weather permit; or if not, as ſoon after as poſſible; and with light ſhort-tined harrows, that will not drag the ſod, they harrow it pretty much to mould. They keep the crop as free as poſſible from weeds, for which purpoſe it is hand-weeded once or twice, in dry weather, before, and not after the Flax is four inches high; from that time it will out-grow and nearly ſmother every weed, and will be ready for pulling by hand, the ſecond, third or fourth week in july, according to the ſoil and ſeaſon: but if it be intended for ſeed, it will require about a fortnight more. It is next tied into ſheaves of about three inches diameter, with bands made of part of the Flax; and whilſt the pulling and tying are going on, in dry weather, if poſſible, a team is employed in carrying it to the pits or ponds, which are previouſly well cleanſed: here it is laid cloſe and trod, one layer of ſheaves upon another, until the man who treads it ſtands about mid-leg deep in water; the Flax is then covered with ſods, earth, &c. ſufficient to keep it entirely under water; a briſk fermentation enſues, and the pit ſtinks abominably; in this ſtate it receives an additional treading, every night and morning, for about four days; when a ſheaf is taken out of the pit, untied, and ſpread on the ground to dry; when dry, it is tried by rubbing between the fingers, to ſee if the bun (hecks or ſpongy part of the ſtalk) be ſufficiently brittle to ſeparate readily from the Flax (or fibres;) if not, they try another ſheaf the day following, by which time it is uſually raited (retted or rotted) enough; though, if the growing ſeaſon has been more than uſually wet, the Flax will be raited a day or two ſooner: if needful, they try it again on the ſixth and even the ſeventh day. As ſoon as it is diſcovered to be ſufficiently raited, it is all taken out of the pit, and every ſheaf being untied, is ſpread on clean graſs land. Here it lies to dry from five to ſeven days, unleſs a conſiderable ſhower fall ſooner; when it is to be turned, that both ſides may be bleached alike; and it is ſometimes turned a ſecond or third time. The bun is frequently tried, to ſee if it be brittle, and part readily from the Flax. They are alſo particularly attentive to obtain their Flax of a lead colour, which complexion they value even more than the rottenneſs of the bun. When bleached ſufficiently and perfectly dry, it is tied into ſheaves, five or ſix times as large as the former, and carted into ſheds or ricks; whence it is ſwingled and tied up for ſale by profeſſional labourers. The crop is from twenty-five to ſeventy ſtone on an acre.

The account of an acre may ſtand nearly thus,

The average crop forty ſtone, at 9*d.* the medium price, and the bounty 4*d.* together	18	13	4
Every expenſe about 6*l.* with rent, taxes, aſſeſſments and tithes, about 2*l.* 13*s.* 4*d.*	8	13	4
Remains Profit £.	10	0	0

This profit is very great, but what makes the crop of Flax ſtill more valuable, is the additional employment it gives to the poor in weeding, pulling and tying, management of the pit, drying and ſwingling to the amount of four or five pounds an acre; the article of ſwingling alone, might go a great way towards giving employment to the poor in country parithes during the dead months of winter. After the crop is off, the ground is cleared of weeds and graſs, and as ſoon as convenient is ploughed an inch or two deeper, and rape ſeed from half a peck to a peck on the acre, according to the richneſs of the ſoil is ſown, from a week before to a week after michelmas. The ſeed loft in reaping and getting the Rape produces a crop of green food for ſheep, which is fed off early enough to prepare the ground for a ſecond crop of flax. If a third crop be taken after Oats, when that is off, a judicious mixture of graſs ſeeds is ſown, and the ground returns to meadow and paſture again".

The following is the expenſe and profit of five acres of Flax raiſed in Shropſhire.

		£.	s.	d.
Rent, including tithe	—	13	10	0
Seed	—	3	3	0
Weeding, drawing, and ſticking up		2	0	0
Binding and carriage	—	0	12	0
Threſhing and winnowing	—	2	2	0
Spreading, gathering and carriage		1	14	3
Swingling, at 1s. per ſtone		14	1	4
		42	3	7
Produce.				
281 ſtone 5lb. at 5s.	—	70	6	3
Seed, 49 buſhels	—	13	7	0
		83	13	3
Bounty	—	4	13	9½
		88	7	0½
		42	2	7
		46	4	5½

There is no charge in the above account for ploughing and harrowing, it being uſual to give a large rent for old paſtures, by thoſe who make a buſineſs of raiſing Flax, the perſon who lets the land engaging to plough and harrow it with his team. The above crop was conſidered as a large one[1]; yet the profit is ſomewhat leſs than the above, being 9l. 4s. 10½d. per acre.

The quantity of ſeed ſown on an acre in the Iſle of Ely is two buſhels, the coſt of which is a guinea or thereabouts; an experienced man is employed to ſow the ſeed, there being few who underſtand that buſineſs. No manure is wanting, where clean or ſward land is uſed, which is generally the caſe. The ground is ploughed but once, and harrowed fine. If rich, it will bring turneps, wheat, or clover, &c. after the flax is off. The coſt is ſomewhat about 3l. an acre. The produce from twenty to fifty ſtone, according to the land. When it is fit to pull, a man ſhould be employed who knows when to put it into the dike, and when to take it out, there being much difficulty in managing that point, without ſpoiling the flax. It is ſuppoſed not to impoveriſh the land, but to improve it[2].

In Ireland, on mountain lands they prefer American flax-ſeed; upon heavy or clay-lands they ſow Riga, Dutch or Flanders ſeed: the quantity they get is more and better in quality than from the Americans, and will laſt twenty years. For fine linnens they never ſave ſeed, pulling it green; but for coarſe linens they ſave as much ſeed as they can. The produce of the flax depends on its finneſs; and the goodneſs of the linnen, on not being too much bleached.

[1] Middleton in Young's Ann. 14. 92.
[2] Harris in Young's Ann. 13. 108.
[3] Irish papers, 4. 235.

They plough their potato land or barley ſtubble once at the end of march or april, and then ſow it. They weed the Flax very carefully. They generally pull it at the end of july, or beginning of auguſt, and immediately ripple it to get the ſeeds off, and then lay it into water from ſix or ſeven to twelve days, according to the ſoftneſs of the water, trying it before they take it out. They generally lay it in bogs or pools, but reckon the bogs beſt. When they take it out, they ſpread it on meadow ground from ten to fifteen days, according to the weather; if dry it will be bad, much of it is loſt. They dry it by laying it in heaps on a hurdle fixed upon poſts, and making a fire of turf under it. As ſoft as it dries, they beat it on ſtones with a beetle, then they ſcutch it to ſeparate the heart or the *ſhoves* from the reſt. Mills are invented for this; and if they uſe theſe, they pay 12d. a ſtone for it. They next ſend it to the flax-heckler, who gives it a ſort of combing, and ſeparates it into two or three ſorts. In this ſtate it is ſaleable. The crop is from eighteen to forty-eight ſtones per acre of flax, rough after ſcutching: the medium thirty ſtones, and it ſells from 6s. 8d. to 9s. the ſtone. Much Dutch flax is imported, alſo from Riga, Konigſberg and Peterſburg.

Their Flax courſe for light and dry ſoils is 1. Turneps. 2. Flax. 3. Clover. 4. Wheat.

The Turneps ſhould be eaten on the land. The common tillage of turnep-land for barley is applicable to the Flax, which requires the land to be very fine and friable: roll in the clover ſeed in the ſame manner; and the weeding and pulling the flax will aſſiſt its growth. The flax may be ſtacked like corn, and thraſhed in the ſpring.

Their Flax courſe for ſtrong ſoils is 1. Beans. 2. Flax. 3. Clover. 4. Wheat. The bean land is prepared for the Flax, by getting off the beans as ſoon in auguſt as poſſible; ploughing the ground directly if the weather be dry, and if the ſeaſon permit giving it two more ploughings before winter, leaving the lands rounded up ſo as to ſhoot off all water, with deep and well-cleanſed furrows.

Their Flax courſe for any ſoils except very ſtrong ones, is 1. Potatoes. 2. Flax. 3. Clover. 4. Wheat. The potatoes to be managed in the common way, only upon taking them up, the land to be left till ſpring, letting no water reſt on it in winter, if it be a wetniſh ſoil. In the ſpring plough more or leſs, ſo as to inſure a fine friable ſurface to ſow the Flax in. In all theſe courſes the fallow crops, or turneps beans and potatoes muſt be kept abſolutely free from all weeds, and in looſe friable order. It is the principle of this huſbandry to baniſh fallows, but then it is neceſſary to be aſſiduous to the laſt degree in keeping theſe crops in the utmoſt perfection of management[3].

In Dorſetſhire the beſt ſeed is annually imported from Riga, it being conſidered as very material to change the ſeed. It is generally ſown broad-caſt about the middle of april, at the rate of two buſhels to an acre, upon any ſtubble, after only one ploughing, and clover-ſeed is often ſown with it. It is ripe about the end of july, or beginning of auguſt, when it is drawn by hand, by women and children, and laid in ſwaths till it is dry, then bound up in ſmall bundles, and the ſeed is beaten out in the field where it grew, by a ſtaff heavier than the common one, and the ſeed ſifted clean into a large ſheet; afterwards the ſtalk is laid on ſtubble or paſture ground, till it is completely dried; being often turned, and if the weather be wet ſet up in ſmall bundles. When it is ſufficiently dried, and fit to bark, which is called ſcutching, it goes to the flax-dreſſer, to be prepared for the manufacturer. It is always pulled up in a green ſtate, and is fit to draw, when the leaf on the ſtalk drops, and the milky juice is dried up.

The ſtalk is never thrown into water, as is the common practice of Lincolnſhire and other places, but attains its proper ſtate more gradually, by what is called dew ripening, or expoſing it to the air and dews for a long time together. From eight to twelve buſhels

[3] Young's Ireland, vol. 1. 135. and vol. 2.

of ſeed on an acre is eſteemed a good crop[a]: dry ſeaſons ſuit it beſt; and the farmers think, if it be not ſown more than once in ſix years, it does not exhauſt the land. This crop, beſides the ſeed, produces from fifty to ſixty dozen pounds weight on an acre of flax for ſpinning, worth from 4s. 6d. to 7s. the dozen. Its value is generally from eight to ten pounds an acre, including the ſeed; but it is a precarious crop, much dependant upon ſeaſons.

The land is frequently let to a middle man, called a flax-jobber, who pays the farmer four or five pounds an acre, manages the crop, finds ſeed and labour, and expects nothing from the farmer but ploughing, and the diſcharge of parochial taxes.

The inferior ſeed, not good enough to be ſown, is valuable for the oil which it yields. Two gallons may be extracted from a buſhel of ſeeds, which weighs about forty-eight pounds. The remaining hull or huſk produces the oil-cake, ſo much eſteemed for feeding cattle. Flax-ſeed is alſo uſed for the ſame purpoſe, by boiling or bruiſing, and then ſteeping it in hot water. Where malt grains can be had to mix with it, this food is of a very nourihing quality*.

The culture of Flax is very general in Perthſhire, but is not carried to a great extent in any one place. The ſoil of every brook in the Highlands, where the water runs ſlowly, and plenty of fine ſediment is depoſited, carries amazing crops of Lint. On the banks of large rivers, where the land is flooded by backwater, the Lint is generally a good crop: and Lint is raiſed ſucceſsfully, the ſecond crop, after good clover lay, which ſaves weeding; but this ought to be ſparingly practiſed, becauſe it is a bad rotation.

If perſons were at pains to preſerve the ſeed, an immenſe ſum would be ſaved annually. For this purpoſe the ſtraws may be ſtacked till ſpring: and the ſeed may then be eaſily rubbed off by a roller, without injury to the rind; the ſheaves being laid head to head during the operation. The people have the whole ſummer before them to water and dreſs their Lint. Or if this proceſs be thought tedious, or they think that they lie too long out of their money, the Lint may be rippled a few days after it is pulled; the capſules dried in the ſun, or on a kiln, and the Lint watered immediately, and dreſſed. The ſeed ought to be changed annually from one ſoil to another.

It muſt be acknowledged that this crop makes no return of manure, and impoveriſhes the ſoil to a great degree. But when it is managed with judgement, it can purchaſe manure, and bring a conſiderable profit beſides: nor does it rob the ground more than wheat, provided the land be fallowed whenever the crop is taken off. Clover and other artificial graſſes grow, when ſown with Flax, better than with any other crop[b].

In Ayrſhire, about ſeven pecks of Flax ſeed are uſually ſown upon a Scotch acre, and when the land is well pulverized and duly weeded, produces at an average twenty ſtone of 24 lb. Engliſh weight, worth about 12s. the ſtone, or 12l. per acre. Two-pence a pound is paid for ſcutching; 1d. for heckling or hatcheling; and when the Flax ſpins into forty-eight cuts per lb. it will coſt 16d. for ſpinning. One cut is equal to five ſcore threads, or turns of the reel; two cuts make one hear; twelve cuts one hank, haſp or ſkip; four hanks, or forty-eight cuts, one ſpindle.

Flax worth 1s. per lb. uſually ſpins from thirty-ſix to forty-eight cuts per pound. Tow or hards is ſold as low as 5d. Flax capable of ſpinning to ſeven ſpindles per lb. is worth 7s. Linnen cloth for home conſumption, worked in what is called a 1400 reed, coſts about 7d. a yard for weaving, and is worth 2s. 4d. or half a crown the yard.

Flax in this country is by many degrees leſs vigorous and luxuriant than in Flanders, where the fine lace and cambrics are manufactured[c].

They have a particular method of managing Flax in that country, which in French is called *Linrage*. The land is ploughed and manured for it before winter: in the beginning of march, or ſooner, according to the ſeaſon, it is deeply ploughed again: ſome days before ſowing they ſpread upon the land ſome pigeon's dung, and they cover the ſeed with a harrowing and rolling. When the Flax is four or five inches high, they weed it with the moſt ſcrupulous attention, and then build a kind of cover hanging over the little plants in the following manner. They ſtick on both ſides of the ground, bordering the ridge, ſome ſtrong wooden forks, about ſix inches high, upon which they put poles along the width of the ridge, in a direction parallel to the ground. Theſe poles are croſſed by ſmall ſticks, branches of trees, &c. ſo as to form a kind of grate full of holes, through which the plants of Flax paſs, as they grow up: by this method their ſtems have a good defence againſt wind and rain, and their roots againſt either exceſſive humidity or heat; and thus their vegetation is very much benefited. The produce is very great; and when it ſucceeds well, the crop exceeds in value the land where it grows. The culture, indeed, is very expenſive, for the requiſite wood coſts about 16l. If, however, the crop on an acre be worth 50l. and upwards, when an acre cultivated in the common way is worth no more than from 10l. to 15l., the expenſe and trouble are well paid; and the wood, when the crop is gathered, is ſtill good for ſomething*. This culture is probably adopted with a view of drawing up the Flax tall and ſlender, for the purpoſe of having the fibres finer, for the delicate fabrics of that country.

It has been ſtrongly recommended, inſtead of ſteeping the Flax in ponds or other cold water, to ſeparate the *boon* or pulp of the ſtalk from the *harle* or fibrous part, which conſtitutes the Flax, by boiling it in water. If this proceſs ſhould be found to anſwer as well as the common one, much time and labour would be ſaved, and the air and waters would not be poiſoned as they now are where Flax and Hemp are ſteeped. The Flax would alſo probably be of a finer colour; and the operation of bleaching would be ſafer, and leſs tedious. Whether the ſtrength of the thread would be improved or diminiſhed, muſt depend upon experience[d].

From the foregoing accounts, and the reſult of general experience concerning this crop, the following obſervations may be made.

1. That Flax requires a rich dry ſoil, or fat ſandy loam, particularly that which is formed from the ſediment of great rivers: and that old graſs-land of this deſcription is its moſt proper matrix. It is, however, not unfrequently, ſown on arable land, and when the ſoil is in heart, dry, friable and clean, with good ſucceſs.

2. Much depends on the ſtate of the ſoil at the time of ſowing. It ſhould neither be wet nor dry, and the ſurface ought to be made as fine as that of a garden bed. For the crop ſhould all riſe together, and the ſurface ſhould be evenly ſeeded. If the plants come up at ſeveral times, or if by accident or miſmanagement they are thin upon the ground, the crop is irreparably injured. This will be the caſe in a ſeaſon of drought, or when ſpring froſts are ſevere, or when the crop is attacked by a ſmall white fly, or when the ground being full of clods the ſeeds are not evenly diſperſed, but not being able to pierce the clods, come up in circles round them, leaving vacancies in the centre favouring their early branching; than which nothing is more detrimental to the crop; the goodneſs of it depending much on its running up with a ſingle ſtalk, for wherever it branches the fibres terminate, and they are worked off in dreſſing.

3. If the crop be intended for thread of the firſt quality, the time of pulling is when the ſeeds are formed, but if they be ſuffered to ripen, the advantage gained by the ſeed is balanced by the inferior quality of the Flax, the filaments being harſh, and the cloth made from them not taking a good colour in whitening. It is alſo a great exhauſter of the ſoil, when it ſtands for the ſeed to ripen.

[a] Agric. ſurvey of Dorſetſhire, p. 26.
[b] Agric. ſurvey of Perthſhire, p. 37.
[c] Agric. ſurvey of Ayrſhire, p. 38.
[d] Balfour in Young's Ann. 14. 346.
* Bath papers 5. 207. Gent. magaz. and Curtis flora Londin.

4. The Flax crop interferes with harveſt, and therefore ought to be confined to rich graſs-land diſtricts, where harveſt is a ſecondary object, and where exhauſtion may be rather favourable than hurtful to ſucceeding arable crops, by checking the too great rankneſs of rich freſh-broken ground[1].

LINUM. See *Gypſophila, Lyſimachia, Polygremum.*

LINZA. See *Ulva.*

LION'S-FOOT. See *Catananche.*

LION'S-LEAF. See *Leontice.*

LION'S-TAIL. See *Phlomis Leonurus.*

LIPARIA. (*On account of the ſmoothneſs of the firſt ſpecies. From* λειος *or* λειαρος, *ſal. comes* Λιπαρια *ſmoothneſs, uſed metaphorically for a ſmooth unruffled temper.*)

Lin. gen. Reich. n. 950. *Schreb. n.* 1190. *mant.* 156. *Juſſ.* 353.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, very obtuſe at the baſe, half-five-cleft, acute: the loweſt *diviſion* very long, elliptic, petal-like.

COR. papilionaceous, without proceſſes of the keel or wing. *Standard* oblong, conduplicated, ſtraight; the ſides reflex. *Wings* oblong, ſtraight, narrower at the baſe, two-lobed at the lower margin.

Keel lanceolate, ſubaſcending, two-parted at the baſe.

STAM. *Filaments* diadelphous; ſimple and nine-parted; filiform: three ſhorter than the reſt. *Anthers* ovate.

PIST. *Germ* ſeſſile, very ſhort. *Style* filiform, middling. *Stigma* ſimple.

PER. *Legume* ovate.

SEEDS few.

ESSENTIAL CHARACTER.

Cal. five-cleft, with the loweſt ſegment elongated. *Cor.* wings two-lobed below. *Stam.* the larger, with three ſhorter teeth. *Legume* ovate.

SPECIES.

1. Liparia ſphærica. *Globe-flowered Liparia.*
Lin. ſyſt. 665. *Reich.* 3. 479. *mant.* 268.
Geniſta africana, rufci folii longioribus, floribus luteis in globum congeſtis. *Raii dendr.* 107.
Flowers in heads, leaves lanceolate, nerved, ſmooth.

2. Liparia graminifolia. *Graſs-leaved Liparia.*
Lin. ſyſt. 665. *Reich.* 3. 479. *mant.* 268.
Geniſta africana, foliis pinaſtri, flor. ſpicatis luteis. *Raii dendr.* 105.
Flowers in heads, leaves linear alternate acute ſeſſile, calyxes villoſe.

3. Liparia umbellata. *Umbelled Liparia.*
Lin. ſyſt. 665. *Reich.* 3. 480. *mant.* 516.
Borbonia lævigata. *Lin. ſyſt.* 643. *Reich.* 3. 398. *mant.* 300.
Flowers umbelled, leaves lanceolate, ſmooth and even, corollas ſmooth, calyxes and bractles hairy.

4. Liparia villoſa. *Woolly Liparia.*
Lin. ſyſt. 666. *Reich.* 3. 480. *mant.* 438. *Houſt. hiſt. nat.* 5. *t.* 25. *f.* 1.
Borbonia tomentoſa. *Lin. ſpec.* 994. *Berg. cap.* 190.
α. Geniſta africana tomentoſa, folio cochleariformi, flore luteo. *Seba theſ.* 1. 38. *t.* 24. *f.* 1.
β. G. afr. arboreſcens, folio argentea lanugine veſtito. *Seba theſ.* 1. 24. *f.* 2.
γ. Lotus fruticoſus. *Lin. ſyſt.* 10. 1179.
Flowers in heads, leaves ovate acute villoſe.

5. Liparia ſericea. *Silky Liparia.*
Lin. ſyſt. 666. *Reich.* 3. 480.
Flowers ſubſpiked axillary, leaves oblong-ovate acute villoſe.

DESCRIPTIONS, *&c.*

Linneus ſeparates this genus from Borbonia, becauſe the tenth ſtamen is not deficient in this, as it is in Borbonia. Lamarck unites them. The character of the genus is taken from the firſt ſpecies. It is compoſed of Shrubs, that have the habit of Borbonia, ſmooth or villoſe. Leaves ſimple, ſeſſile, ſmooth or villoſe. Stipules ſcarcely any. Flowers axillary or terminating; ſolitary, or more often many[a]. They are natives of the Cape of Good Hope.

1. This is a ſhrub with very handſome flowers. Stem four feet high, ſtout, ſmooth and even. Leaves alternate, remote, broad-lanceolate, quite entire, acute, rigid, dagger-pointed, pungent. Head terminating, ſeſſile, ſmooth, the ſize of an Artichoke, ſurrounded by the leaves like a calyx, of the ſame length with the corollets. The loweſt ſegment of the calyx the length of the whole corolla, and of the ſame breadth alſo, coloured or petaloid, emarginate-trifid at the top. Corolla tawny. The manner in which the wings wrap round each other before the flower opens, is very ſingular[b].

2. Stem ſhrubby, determinately branched, ſmooth and even, angular. Leaves flat, acuminate, ſtiff, ſmooth and even, one-nerved, alternate, much longer than the internodes, decurrent a little on the back and edges. Stipules minute, in pairs, awl-ſhaped. Head made up of a raceme, terminating, ſeſſile, not longer than the leaves. Calyx hoary, hairy, with the lower ſegment longer. Corolla yellow. Dorſal ſtamen diſtinct. Germ hirſute. Stigma ſimple.

3. See the deſcription under Borbonia lævigata.

4. This reſembles Indigofera ſericea. The flowers are in bundles: the corollas ſmooth and even: the ſtamens truly diadelphous[c].

Branches round, tomentoſe, warted, determinately divided: branchlets in whorls, divided into others alſo in whorls, thickly tomentoſe, ſilvery. Leaves ſcattered, tomentoſe on both ſides, ſilvery, ſhining, frequent, ſcarcely an inch long, longer than the internodes, ſpreading a little. Heads or ſpikes ſeſſile at the ends of the branchlets, fortified with leaves. Corolla red. Germ hirſute[d].

Introduced from the Cape in 1774, by Mr. Francis Maſſon[e].

* *

5. This is allied to the preceding[f].

PROPAGATION AND CULTURE.

See *Borbonia.*

Liparia oppoſita. See *Crotalaria.*]

LIPPIA. (*So named by Houſtoun, from Auguſtine Lippi, who travelled into Egypt, and died in Abyſſinia.* Fungus melitenſis 1705.)

Lin. gen. n. 781. *Reich. n.* 844. *Schreb. n.* 993 *Houſt. rel.* 12. *Jacqu. amer.* 176. *Gærtn. t.* 56. *Juſſ.* 109.

Claſſ. 14. 1. Didynamia Gymnoſpermia.

Nat. order of *Stellatæ.—Vitices,* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, compreſſed, four-toothed, bivalved when mature: *valves* membranaceous, acuminate, keeled, upright, permanent.

COR. one-petalled, unequal. *Border* four-cleft: *diviſions* rounded, the *inferior* and *ſuperior* one larger: the *ſuperior* erect.

STAM. *Filaments* four, ſhorter than the corolla; two of them longer than the others. *Anthers* ſimple.

PIST. *Germ* ovate, compreſſed-flat. *Style* filiform, of the ſituation and length of the ſtamens. *Stigma* oblique.

PER. none: valves of the *calyx* cover the ſeeds.

SEEDS ſolitary, oblong.

OBS. *Several fruktifications are collected into a little head.*

ESSENTIAL CHARACTER.

Cal. four-toothed, roundiſh, upright, compreſſed-membranaceous. *Capſ.* one-celled, two-valved, two-ſeeded, ſtraight. *Seed* one two-celled.

SPECIES.

1. Lippia americana.
Lin. ſpec. 883. *ſyſt.* 574. *Reich.* 3. 187. *Gærtn. fruct.* 1. 206. *Houſt. reliqu.* 6. *t.* 12.
Heads pyramidal.

2. Lippia hemiſphærica.
Lin. ſyſt. 574. *Reich.* 3. 187. *Jacqu. amer.* 176. *t.* 179. *f.* 100.
Heads hemiſpherical.

[1] Marſhall's Yorkſhire, 2. 68.

[a] Juſſieu. [b] Linn. mant. [c] Ibid.
[d] Bergius. [e] Hort. kew. [f] Linn. mant. 269.

[3. Lippia ovata.
Lin. fyſt. 574. *Reich.* 3. 187. *mant.* 89. *Burm. prodr.* 17.
Dalea Lippiatrum. *Gærtn. fruct.* 1. 235. *t.* 51.
Selago ovata. *L'Herit. ſtirp. nov.* 2. *t.* 33.
Heads ovate, flowers linear, quite entire.
4. Lippia hirſuta.
Lin. fyſt. 574. *ſuppl.* 288.
Hirſute, leaves oblong wrinkled ſerrate, ſometimes undermoſt, panicles axillary, heads ovate.
5. Lippia cymoſa.
Swartz. prodr. 93. *Sloan.* 2. 30. *t.* 174. *f.* 3. 4. (Spirææ congener, &c.)
Flowers cymed, leaves ovate, almoſt entire.]

DESCRIPTIONS, &c.

1. Height fixteen or eighteen feet, with a rough bark; branches and leaves in pairs. Leaves oblong, pointed, a little ſerrate. Pedunclés axillary, ſuſtaining many pyramidal ſcaly heads, about the ſize of a large gray pea, in which are many ſmall yellow flowers between the ſcales.

[It is a ſhrub with round pale ſtems, compreſſed at the joints. Leaves lanceolate-ovate, ſerrate beyond the middle, petioled, rugged. Pedunclés axillary, oppoſite, very ſhort. Heads imbricate backwards, with innumerable ſcales, four-cornered, ovate, having one flower within each ſcale *.

Corolla funnel-form. Fruits on long pedunclés. Heads ovate-globular; ſcales very broad, emarginate at the baſe, mucronate at the tip, concealing the calyxes, the valves of which are hiſpid. Seeds two, coadunate, ovate, ſomewhat bony, convex and ſmoothiſh on one ſide, flat or ſlightly concave on the other, whitiſh *.

Gærtner is for expunging this genus, and uniting it with Blairia. He remarks that the calyx is certainly not ſuperior.

Found at La Vera Cruz by Dr. Houſtoun, and cultivated by Mr. Miller before 1733.

2. This is a ſhrub ten feet in height, the whole odoriferous and aromatic; dividing into woody, round, weak branches, that bend down unleſs they are ſupported; the younger ones are quadrangular and flower-bearing. Leaves oval-lanceolate, acuminate at both ends, entire, or ſometimes irregular at top, with a few inciſures, ſmooth underneath, ſmoothiſh above, petioled, oppoſite, two or three inches long. Pedunclés axillary, ſolitary, oppoſite, almoſt the length of the petioles, ending in an imbricate hemiſpherical head, the ſcales of which are rhomboid-cordate, acuminate, entire, one under each flower. Flowers ſmall, each on a very ſhort peduncle. Corolla white. Capſules connate, eaſily ſeparable when ripe, and reſembling a two-celled, two-valved capſule: or each capſule may be taken for the cover of the ſeed, and then there will be no pericarp. This plant connects the Stellate with the Verticillate plants, and yet is of neither order. Native of Carthagena in New Spain *.

Mr. Miller gives this ſpecies in the laſt folio edition of the Dictionary, but he does not ſay that he had cultivated it.

3. Linnæus deſcribes this in the mantiſſa under the name of *Lippia ovata*. Gærtner ſeparates it from Lippia, on account of the inverted ſituation of the embryo, and names it *Dalea Lippiatrum*. L'Heritier has placed it among the *Selagos*, where a deſcription of it will be found.

4. Stem four-cornered, hoary with ſhagginеſs. Leaves oppoſite, petioled, long, hairy above, hoary beneath. Pedunclés axillary, ſeveral, elongated into a panicle, branching. Pedicels terminating in ovate heads, ſupported by two bractes. Flowers minute, white. Found in America by Mutis *.

5. This ſhrub has often ſeveral ſtems from the ſame root, each no bigger than a gooſe quill, round, woody, brownish black, from three to ſix feet in height, ſlender, and requiring ſupport: twigs many, oppoſite, having ſharp prickles one third of an inch long, and oppoſite leaves, half an inch in diameter, a little pointed at the ends, almoſt round, yellowiſh green, ſmooth, ſomething like thoſe of Nummularia, and very ſtrong ſcented like Pulegium. Petioles the eighth of an inch in length. The flowers come out at the top, are ſmall, many together, of the colour, and ſomewhat reſembling thoſe of Spiræa Theophraſti, though not ſo cloſe ſet, nor ſo handſome. Seeds ſmall, oblong, channelled, brown. Native of Jamaica *.]

PROPAGATION AND CULTURE.

Theſe ſhrubs, being natives of the Continent and iſlands of the Weſt Indies, muſt be preſerved in a bark ſtove. The ſeeds ſhould be ſown on a hot-bed, and the plants treated as other ſhrubby plants from the ſame country: by keeping them always in the ſtove, plunged in the bark bed, obſerving to give them a large ſhare of air in warm weather, and to refreſh them frequently with water. In winter they muſt be watered more ſparingly, and be kept in a moderate degree of warmth, otherwiſe they will not live through the winter, eſpecially when young; but when they have acquired ſtrength, they may be preſerved with a leſs ſhare of warmth.

As the plants advance in their growth, ſhift them into larger pots, but this ſhould not be too often repeated. Once every ſpring will be ſufficient, for theſe and many other exotic plants do not thrive ſo well when frequently removed, as when they are permitted to fill the pots with their roots. Shift them in April, at which time the tan of the hot-bed ſhould be ſtirred, and freſh tan mixed with it, to increaſe the heat. The earth in which theſe plants are placed, ſhould be freſh and light, but not too rich.

LIQUIDAMBAR. *Cab-ome given by the Spaniards in America to this tree, from the liquid gum which it diſtils.*

Lin. gen. 1078. *Reich.* 2. 1174. *Schreb.* 2. 1452. *Clayt. Mitch.* 12. *Gærtn.* 1. 90. *Juſſ.* 410.

Claſſ. 21. 7. Monœcia Polyandria.
Nat. order of *Coniferæ*—*Amentaceæ*, Juſſ.

GENERIC CHARACTER.

* *Male Flowers* numerous, on a long, conical, looſe *ament*.
CAL. *Involucre common* four-leaved; *leaflets* ovate, concave, caducous; the alternate ones ſhorter.
COR. none.
STAM. *Filaments* numerous, very ſhort, on a body convex on one ſide, flat on the other. *Authers* upright, twin, four-furrowed, two-celled.
* *Female Flowers* at the baſe of the male ſpike, heaped into a globe.
CAL. *Involucre* as in the male, but double.
Perianth proper bell-ſhaped, cornered, ſeveral, connate, warty.
COR. none.
PIST. *Germ* oblong, growing to the perianth. *Style* two, awl-ſhaped. *Stigmas* growing on one ſide, length of the ſtyle, recurved, pubeſcent.
PER. *Capſules* as many, ovate, one-celled, bivalve at the tip, acute, diſpoſed into a globe, woody.
SEEDS ſeveral, oblong, gloſſy, with a membrane at the point mixed with a great many chaffy corpuſcles.
Essential Charac.
MALE. *Cal.* common, four-leaved. *Cor.* none. *Stam.* numerous.
FEM. *Cal.* in a globe, four-leaved. *Cor.* none. *Styles* two. *Capſ.* many in a globe, two-valved, many-ſeeded.

SPECIES.

1. Liquidambar Styraciflua. *Maple-leaved Liquidambar, or Sweet Gum.*
Lin. ſpec. 1418. *Reich.* 2. 1174. *mant.* 208. *Gærtn. fruct.* 2. 58. *Kalm. itin.* 2. 102. *Du Roi harbk.* 1. 369. *Blackw.* 1. 485.

* Linn. ſpec. † Gærtner. ‡ Jacquin.
* Linn. ſuppl. * Sloane.

Liquidambar. *Bauh. pin.* 502. *Gron. virg.* 2. 51. *Lin. hort. upſ.* 287. *hort. cliff.* 486. *Cold. noveb.* 228.

L. arbor ſ. Styraciſtua aceris folio. *Pluk. phyt. t.* 42. *f.* 6. *Cateſb. car.* 2. *t.* 65. *Duham. arb.* 1. *t.* 139. Styrax aceris folio. *Raii hiſt.* 1681. 1702. 1799. *Leaves palmate-lobed, with the ſinuſes of the baſe of the veins villoſe.*

2. Liquidambar inthebe. *Oriental Liquidamber. Ait. hort. kew.* 3. 365.

Liquidamber orientalis. *Mill. dict. n.* 2. *Leaves palmate-lobed, with the ſinuſes of the baſe of the veins ſmooth.*

DESCRIPTION, *&c.*

1. The trunk of the Sweet-Gum tree is commonly two feet in diameter, ſtraight, and free from branches to the height of about fifteen feet; from which the branches ſpread and riſe in a conic form to the height of forty feet and upwards from the ground. Leaves five-pointed, divided into ſo many deep ſections, (or ſometimes ſeven) and ſet on long ſlender petioles. In february before the leaves are formed, the bloſſoms begin to break forth from the tops of the branches into ſpikes of yellowiſh-red, pappoſe, globular flowers, which ſwell gradually, retaining their round form, to the full maturity of their ſeed-veſſels, which are thick ſet with pointed hollow prouberances, and ſplitting open diſcharge their ſeeds. Each cell contains a ſeed, winged at one end with many ſmall grains, diſtinct from the ſeed[a]. Theſe, which Linnæus calls chaffy corpuſcles, according to Gærtner, are immature germs. There are two capſules in each cell of the ament; they are grooved, ſhining, and of a bay-ferruginous colour. Common receptacle globular, honey-combed, with the female bell-ſhaped calyxes united; proper none, beſides the inner walls of the capſules, to which the germs are fixed all round. Seeds as many as ſixteen in a capſule, oblong elliptic, compreſſed like a lens[b].]

The leaves are ſhaped ſomewhat like thoſe of the leſſer Maple, but are of a dark green colour, with their upper ſurfaces ſhining. A ſweet glutinous ſubſtance exſudes through their pores in warm weather, which renders them clammy to the touch.

[The leaves of this ſpecies are diſtinguiſhed from thoſe of the ſecond by the little tufts of hairs placed where the veins divide from the midrib.

The wood of this tree is good timber, and is uſed in wainſcotting, &c. The grain is fine, and ſome of it beautifully variegated; but when wrought too green is apt to ſhrink, to prevent which no leſs than eight or ten years is ſufficient to ſeaſon the planks. From between the wood and the bark iſſues a fragrant gum, which trickles from the wounded trees, and by the heat of the ſun congeals into tranſparent drops, which the Indians chew, as a preſervative to their teeth. It ſmells ſo like Balſam of Tolu, that it is not eaſy to diſtinguiſh them. The Bark is alſo of ſingular uſe to the Indians for covering their huts[c].

Native of North America, in low clavey ground.—Cultivated in the garden of Compton, Biſhop of London (in 1688) by his gardener George London. It was ſent over from Virginia by Baniſter[d].]

2. The leaves of this have their lobes ſhorter, and much more ſituated on their borders, they end in blunt points, and are not ſerrated. [They have alſo none of thoſe tufts of hair which are found on the leaves of the firſt ſort. Its native country is unknown. According to Mr. Miller,] the ſeeds were ſent to Mr. Peyſſonel from the Levant, to the King of France's garden at Marli. Monſ. Richard, the King's gardener, ſent ſome of them to Mr. Miller, [who cultivated this tree in 1759[e].]

PROPAGATION AND CULTURE.

The Sweet-Gum tree is hardy enough to endure the ſevereſt cold of this country in the open air. It is commonly propagated by layers; but when raiſed from ſeeds, it grows to be a much fairer tree.

[a] Catesby. [b] Gærtner. [c] Catesby.
[d] Ray hiſt. 1681. [e] Hort. kew.

The ſeeds of this tree, if ſown in the ſpring, commonly remain in the ground a whole year before the plants come up; ſo that the ſureſt way to raiſe them is, to ſow the ſeeds in boxes or pots of light earth; which may be placed in a ſhady ſituation during the firſt ſummer, and in autumn they may be removed where they may have more ſun; but if the winter ſhould prove ſevere, it will be proper to cover them with Peas-haulm, or other light covering, which ſhould be taken off conſtantly in mild weather. In the following ſpring, if theſe boxes or pots are placed upon a moderate hot-bed, it will cauſe the ſeeds to come up early, ſo that the plants will have time to get ſtrength before the winter; but during the firſt and ſecond winters, it will be proper to ſcreen the plants from ſevere froſt, but afterwards they will bear the cold very well.

[LIQUIDAMBAR PEREGRINUM. See *Comptonia aſplenifolia.*

LIQUORICE. See *Glycyrrhiza.*

——— Vetch. See *Aſtragalus.*

———, Wild. See *Abrus.*

LIRIOCONFANCY. See *Convallaria.*

LIRIODENDRUM. (Λειριον λειριου, *arbor liliacea, Lily tree, a tree bearing liliaceous flowers.*)

Lin. gen. n. 689. *Reich. n.* 747. *Schreb. n.* 941. *Gærtn. t.* 178. *Juſſ.* 281. Tulipifera. *Cateſb. t.* 48.

Claſſ. 13. 7. Polyandria Polygynia.

Nat. order of *Coadunatæ.—Magnoliæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Involucre proper* two-leaved: *leaflets* triangular, flat, deciduous.

Perianth three-leaved; *leaflets* oblong, concave, ſpreading, petal-form, deciduous.

COR. ſix-petalled, bell-ſhaped; *Petals* ſpatulate, obtuſe, channelled at the baſe: the three exterior deciduous.

STAM. *Filaments* numerous, ſhorter than the corolla, linear, inſerted into the receptacle of the fructification. *Anthers* linear, growing longitudinally to the ſides of the filament.

PIST. *Germs* numerous, diſpoſed into a cone. *Style* none. *Stigma* to each globoſe.

PER. none. *Seeds* imbricated into a body reſembling a ſtrobile.

SEEDS numerous, ending in a lanceolate ſcale, emitting an acute angle towards the baſe of the ſcale from the inner ſide, compreſſed at the baſe, acute.

ESSENTIAL CHARACTER.

Cal. three-leaved. *Pet.* ſix. *Seeds* imbricated into a ſtrobile.

SPECIES.

1. Liriodendron Tulipifera. *Common Tulip-tree.*

Lin. ſpec. 755. *Juſſ.* 507. *Reich.* 2. 625. *hort. cliff.* 223. *upſ.* 154. *Gærtn. fruct.* 2. 475. *Gron. virg.* 60. 83. *Kalm. itin.* 2. 322. *Trew. Ehret. t.* 10. *Butt. car.* 229. *Du Roi harbk.* 1. 374. *Curt. magaz.* 275. *Schmidt arb. t.* 48.]

Tulipifera Liriodendron. *Mill. dict.*

T. arbor virginiana. *Herm. lugdb.* 612. *t.* 613.

T. virg. tripartito aceris folio, media lacinia velut abſciſſa. *Pluk. phyt. t.* 117. *f.* 15. & *t.* 248. *f.* 7. *Cateſb. car.* 1. *t.* 48. *Duham. arb.* 2. *t.* 102. *Raii hiſt.* 1798.

β. T. caroliniana, fol. productioribus magis anguloſis. *Pluk. phyt. t.* 68. *f.* 3. *Leaves lobed.*

[2. Liriodendron Lilulifera.

Lin. ſpec. 755. *Juſſ.* 507. *Reich.* 2. 625. *Burm. ind.* 124. *Lour. cochinch.* 346.

Sampacca montana. *Rumph. amb.* 2. 204. *t.* 69. *Leaves lanceolate.*]

DESCRIPTION, *&c.*

1. This is a native of North America, where it grows ſo large as to be a tree of the firſt magnitude, and is generally known through all the Engliſh ſettlements by the title of Poplar. Of late years there has been great numbers of theſe trees raiſed from ſeeds in the Engliſh gardens, ſo that now they are become common in the nurſeries about London, and there are many of the trees in ſeveral parts of England which do annually produce flowers. The firſt tree of this kind which flowered here, was in the gardens of the late Earl of

Peterborough, at Parſons Green near Fulham, which was planted in a wilderneſs among other trees; before this was planted in the open air, the few plants which were then in the Engliſh gardens, were planted in pots and houſed in winter, ſuppoſing they were too tender to live in the open air; but this tree ſoon after it was placed in the full ground, convinced the gardeners of their miſtake, by the great progreſs it made, while thoſe which were kept in pots and tubs increaſed ſlowly in their growth; ſo that afterward there were many others planted in the full ground, which are now arrived to a large ſize, eſpecially thoſe which were planted in a moiſt ſoil. One of the handſomeſt trees of this kind near London, is in the garden of Mr. Jones at Waltham Abbey; and at Wilton, the ſeat of the Earl of Pembroke, there are ſome trees of great bulk; but the old tree at Parſons Green is quite deſtroyed, by the other trees which were ſuffered to over-hang it, and rob it of its nouriſhment, from a fear of taking down the neighbouring trees, left by admitting the cold air to the Tulip tree it would injure it.

[Mr. Darby at Hoxton and Mr. Fairchild, ſeem to have been the firſt who raiſed this tree in any quantity from ſeeds, and from them the gardens abroad were chiefly ſupplied [a]. Biſhop Compton, however, cultivated it at Fulham in 1688 [b]. There is a fine tree in Mr. Ord's garden at Walham Green, every year covered with bloſſoms [c].]

The young ſhoots of this tree are covered with a ſmooth purpliſh bark; they are garniſhed with large leaves, whoſe foot-ſtalks are four inches long; they are ranged alternate; the leaves are of a ſingular form, being divided into three lobes; the middle lobe is blunt and hollowed at the point, appearing as if it had been cut with ſciſſars. The two ſide lobes are rounded, and end in blunt points. The leaves are from four to five inches broad near their baſe, and about four inches long from the foot-ſtalk to the point, having a ſtrong midrib, which is formed by the prolongation of the foot-ſtalk. From the midrib run many tranſverſe veins to the borders, which ramify into ſeveral ſmaller. The upper ſurface of the leaves is ſmooth, and of a lucid green, the under is of a pale green. The flowers are produced at the end of the branches; they are compoſed of ſix petals, three without, and three within, which form a ſort of bell-ſhaped flower, whence the inhabitants of North America gave it the title of Tulip. Theſe petals are marked with green, yellow, and red ſpots, making a fine appearance when the trees are well charged with flowers. The time of this tree's flowering is in July, and when the flowers drop, the germ ſwells, and forms a kind of cone, but theſe do not ripen in England. [Gærtner ſays that he has diſſected more than five hundred ſcales, or *amaræ*, as he calls them, without finding a ſingle fertile ſeed. The upper ſcales have only one ſeed in them, but the lower ones have conſtantly two.]

Mr. Cateſby, in his Natural Hiſtory of Caroſina, &c. ſays, there are ſome of theſe trees in America, which are thirty feet in circumference; that the boughs are unequal and irregular, making ſeveral bends or elbows, which render the trees diſtinguiſhable at a great diſtance, even when they have no leaves upon them. They are found in moſt parts of the northern continent of America, from the Cape of Florida to New England, where the timber is of great uſe, particularly for making of periaugues, the trunks of theſe being large enough to be hollowed into the ſhape of thoſe boats, ſo they are of one piece.

[Mr. Marſhall deſcribes the Tulip tree as ſeventy or eighty feet in height. He mentions two varieties, one with yellow, and the other with white wood; the firſt ſoft and brittle, much uſed for boards and heels of ſhoes, alſo turned into bowls, trenchers, &c.; the white heavy, tough and hard, ſawed into joiſts, boards, &c. for building. He remarks that the flower has ſometimes ſeven petals or more.

Kalm obſerves, that it is very agreeable at the end of may to ſee one of theſe large trees, with its ſingular leaves, and covered for a fortnight together with flowers, which have the ſhape, ſize, and partly the colour of Tulips. The wood is uſed for canoes, whence the Swedes in North America call it Canoe-tree, for boards, bowls, diſhes, ſpoons, and all ſorts of joiners work. Kalm ſpeaks of having ſeen a barn of conſiderable ſize, the ſides and roof of which were made of a ſingle Tulip-tree ſplit into boards. But there is one inconvenience attending it, for there is no wood that contracts and expands itſelf ſo much as this. The bark is diviſible into very thin laminæ, which are tough like baſt. It is pounded, and given to horſes who have the bots. The roots are ſuppoſed to be as efficacious in agues as Jeſuit's bark.

2. This is a middle-ſized tree, with ſpreading branches. Leaves ovate, acuminate, quite entire, ſmooth, alternate. Flowers pale, large, without ſcent, heaped at the ends of the branches, one on a peduncle. Calyx none. Petals nine, ovate, thick, forming a tube at bottom, reflex at top. Filaments about ſixty, thick, very ſhort, placed on the baſe of the receptacle elongated. Anthers long, acuminate, bent in, perforated at top. Germs about fifty, flattiſh, acute, imbricate, but without ſcales. Stigmas ſeſſile. Native of China, near Canton, and of Amboina [d].

Loureiro has two other ſpecies which he names *L. Figo* and *L. Cera*, but not knowing whether they belong to this genus or to that of Magnolia, I have not ventured to inſert them among the ſpecies.]

PROPAGATION AND CULTURE.

This tree is propagated by ſeeds, which are now annually imported in great plenty from America. Theſe may be either ſown in pots or tubs filled with light earth from the kitchen-garden, or in a bed in the full ground. Thoſe which are ſown in the firſt way, may be placed on a gentle hot-bed, which will forward their growth, ſo that the plants will acquire more ſtrength before winter. If they are thus treated, the glaſſes of the hot-bed ſhould be ſhaded from the ſun every day, and the earth in the pots ſhould be frequently refreſhed with water, for unleſs it is kept moiſt, the ſeeds will not grow; but this muſt be done with care, ſo as not to make it too wet, which will rot the ſeeds. When the plants appear, they muſt be ſtill ſhaded in the heat of the day from the ſun, but freſh air muſt be admitted daily to prevent their drawing up weak, and as the ſeaſon advances, they muſt be gradually hardened to bear the open air. While the plants are young, they do not care for much ſun, ſo they ſhould be either ſhaded or placed where the morning ſun only ſhines upon them; they muſt alſo be conſtantly ſupplied with water, but not have it in too great plenty. As the young plants commonly continue growing late in the ſummer, ſo when there happens early froſts in autumn, it often kills their tender tops, which occaſions their dying down a conſiderable length in winter, therefore they ſhould be carefully guarded againſt theſe firſt froſts, which are always more hurtful to them than harder froſts afterward, when their ſhoots are better hardened; however, the firſt winter after the plants come up, it will be the better way to ſhelter them in a common hot-bed frame, or to arch them over with hoops, and cover them with mats, expoſing them always to the open air in mild weather.

The following ſpring, juſt before the plants begin to ſhoot, they ſhould be tranſplanted into nurſery-beds, in a ſheltered ſituation, where they are not too much expoſed to the ſun. The ſoil of theſe beds ſhould be a ſoft gentle loam, not too ſtiff, nor over light; this ſhould be well wrought, and the clods well broken, and made fine. There muſt be great care taken not to break the roots of the plants in taking them up, for they are very tender; they ſhould be planted again as ſoon as poſſible, for if their roots are long out of the ground, they will be much injured thereby. Theſe may be planted in rows at about a foot diſtance, and at ſix inches diſtance in the rows, for as they ſhould not remain long in theſe nurſery-beds, ſo this will be room enough for them to grow; and by having them ſo cloſe, they may be ſhaded in the ſummer, or ſhel-

[a] Miller's Dict. ed. 1724. 8vo.
[b] Hort. kew. from Ray hiſt.
[c] Curt. magaz.
[d] Loureiro.

tered

tered in the winter, with more eaſe than when they are farther apart.

When the plants are thus planted, if the ſurface of the beds is covered with rotten tanners bark, or with moſs, it will prevent the earth from drying too faſt, ſo that the plants will not require to be ſo often watered, as they muſt be where the ground is expoſed to the ſun and air; after this, the farther care will be to keep them clean from weeds, and if the latter part of ſummer ſhould prove moiſt, it will occaſion the plants growing late in autumn, ſo the tops will be tender, and liable to be killed by the firſt froſts. In this caſe, they ſhould be covered with mats to protect them.

If the plants make great progreſs the firſt ſummer, they may be tranſplanted again the following ſpring; part of them may be planted in the places where they are to remain, and the other ſhould be planted in a nurſery where they may grow two or three years to acquire ſtrength before they are planted out for good; though the younger they are planted in the places where they are to ſtand, the larger they will grow, for the roots run out into length, and when they are cut it greatly retards their growth, ſo that theſe trees ſhould never be removed large, for they rarely ſucceed when they are grown to a large ſize before they are tranſplanted. Some trees I have ſeen removed pretty large, which have ſurvived their removal, but young plants of two or three years old which were planted near them, were much larger in fifteen years than the old ones.

When the ſeeds are ſown upon a bed in the full ground, the bed ſhould be arched over with hoops, and ſhaded in the heat of the day from the ſun, and frequently refreſhed with water; as alſo ſhould the plants when they appear, for when they are expoſed much to the ſun they make but ſmall progreſs. The care of theſe in ſummer muſt be to keep them clean from weeds, ſupplying them duly with water, and ſhading them from the ſun in hot weather; but as theſe ſeeds will not come up ſo ſoon as thoſe which were placed on a hot-bed, they generally continue growing later in autumn, therefore will require ſhelter from the early froſts in autumn; for as the ſhoots of theſe will be much ſofter than thoſe of the plants which had longer time to grow, ſo if the autumnal froſts ſhould prove ſevere, they will be in danger of being killed down to the ſurface of the ground, by which the whole ſummer's growth will be loſt, and ſometimes the plants are entirely killed by the froſt the firſt winter, if they are not protected.

As theſe plants will not have advanced ſo much in their growth as the other, they ſhould remain in the ſeed-bed to have another year's growth before they are removed, therefore all that will be neceſſary to obſerve the ſecond year is to keep them clean from weeds; and now they will not be in ſo much danger of ſuffering from the warmth of the ſun as before, therefore will not require ſuch conſtant care to ſhade them; nor ſhould the watering of them be continued longer than the ſpring, for if the autumn ſhould prove dry, it will prevent the plants from ſhooting late, and harden thoſe ſhoots which were made early in the year, whereby the plants will be in leſs danger from the early froſts.

After the plants have grown two years in the ſeed-bed, they will be ſtrong enough to remove, therefore, in the ſpring, juſt at the time when their buds begin to ſwell, they ſhould be carefully taken up, and tranſplanted into nurſery-beds, and treated in the ſame way as has been before directed for the plants which were raiſed on a hot-bed.

There are ſome people who propagate this tree by layers, but the layers are commonly two or three years before they take root, and the plants ſo raiſed, ſeldom make ſuch ſtraight trees as thoſe raiſed from ſeeds; though indeed they will produce flowers ſooner, as is always the caſe with ſtinted plants.

This tree ſhould be planted on a light loamy ſoil, not too dry, on which it will thrive much better than upon a ſtrong clay, or a dry gravelly ground; for in America they are chiefly found upon a moiſt light ſoil, where they will grow to a prodigious ſize, though it will not be proper to plant theſe trees in a ſoil which is too moiſt in England, becauſe it might endanger the rotting of the fibres of the roots, by the moiſture continuing too long about them, eſpecially if the bottom be clay, or a ſtrong loam, which will detain the wet.

[To raiſe them in the open ground the beginning of march, prepare a bed of good mellow rich earth well mixed with old rotten cow-dung, expoſed to the ſun, and ſheltered from cold winds: place an old frame over the bed, and having ſown the ſeeds, ſift over them, half an inch thick, a ſoil compoſed ſome months before of one load old paſture earth, one of well-rotted cow-dung, and half a load of ſea or fine pit-ſand. Some of theſe ſeeds will probably make their appearance in nine or ten weeks, but much the greater part will lie in the ground till next ſpring. Water the beds therefore no more than barely ſufficient to cheriſh the plants that have appeared: for four or five weeks ſcreen them from the ſun during the heat of the day, but afterwards let them receive its full influence. In bad weather, during winter, throw double mats over the frames.

In march the ſucceeding year, pick off all moſſy, hard cruſted earth from the bed, ſmooth it, and ſift on ſome fine, rich mould. The end of april, or beginning of may, plants will appear in abundance, when they muſt be frequently but gently watered. Till the beginning of auguſt they muſt be ſcreened from the mid-day ſun, by part of an old reed fence, or by nailing ſome thin boards together high enough to ſhade the bed. After this, no farther care is neceſſary, but frequent moderate waterings, and to throw a mat over the frame during any ſevere winter ſtorm.

The beginning of april, next ſeaſon, take up the plants carefully with a trowel, without bruiſing the roots, and if they cannot be planted immediately, mix a pail-full of ſifted mould and water, to the conſiſtence of pap; draw the plants through it, till as much adhere as covers their roots and fibres; in this condition they may be kept ſeveral days out of the ground. Cut only a little of the tap-root ſmoothly off, but let all the fibres remain; and then plant them in drills cut out with the ſpade, at a foot diſtance row from row, and ſix inches in the row. Plant five of theſe lines, and then leave an alley three feet wide. Water them frequently and plentifully during the ſummer months; throw mats over them in caſe of very ſevere froſt, the firſt winter, and let them remain two years. Then remove them to another nurſery, in rows three feet and a half diſtant, and eighteen inches in the row, and let them continue three years. Being now ſix or ſeven feet high, they will be of a good ſize for planting where they are to remain. No tree bears pruning its roots or branches worſe than this.

It is a tree of extraordinary beauty and ſtateline's, and highly deſerves a place in all noble and elegant plantations *.

LIRIUM. See *Lilium*.

LISIANTHUS. (*From λις or λισσος ſmooth, and ανθος, a flower.*)

Lin. gen. Reſtib. n. 224. *Schreb. n.* 274. *Suppl.* 135. *Mant.* 6. *Brown. jam. t.* 9. *Juſſ.* 142.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Rotaceæ.—Gentianæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-parted: *leaflets* lanceolate, keeled, membranaceous on the margin, very ſhort, permanent.

COR. one-petalled, funnel-form. *Tube* long, ſomewhat ventricoſe, ſtraitened at the baſe within the calyx. *Border* five-parted: *diviſions* lanceolate, ſhorter than the tube, recurved.

STAM. *Filaments* five, filiform, longer than the tube. *Anthers* ovate, incumbent.

PIST. *Germ* oblong, ſharp-pointed. *Style* filiform, length of the ſtamens, permanent. *Stigma* headed, two-plated.

PER. *Capſule* oblong, acuminate, two-celled: the margins of the *valves* intorted.

SEEDS numerous.

* Boutcher.

ESSENTIAL CHARACTER.

Cal. keeled. *Cor.* with a ventricofe tube and recurved divifions. *Stigma* two-plated. *Capf.* two-celled, two-valved; the margins of the valves intorted.

SPECIES.

1. Lifianthus longifolius.
Lin. fyft. 197. *Reich.* 1. 426. *mant.* 43. *Brown. jam.* 157. 1. *t.* 9. *f.* 1. *Sloan. jam.* 1. 157. *t.* 101. *f.* 1. (Rapunculus.)
Leaves lanceolate, fegments of the corolla lanceolate, acute.
2. Lifianthus conhifolius.
Lin. fyft. 197. *Reich.* 1. 427. *mant.* 43. *Brown. jam.* 157. 2. *t.* 9. *f.* 2. *Swartz. obf.* 60.
Leaves cordate, fegments of the corolla lanceolate, acute.
3. Lifianthus exfertus.
Swartz. prodr. 40.
Leaves ovate-lanceolate, peduncles trichotomous, genitals very long.
4. Lifianthus latifolius.
Swartz. prodr. 40.
Leaves lanceolate-elliptic acuminate, peduncles trichotomous, fegments of the corolla erect, genitals included.
5. Lifianthus umbellatus.
Swartz. prodr. 40.
Leaves elongated obovate, flowers terminating, pedunculed umbelled, fegments of the corolla very fhort, blunt, upright.
6. Lifianthus frigidus.
Swartz. prodr. 40.
Leaves ovate acuminate coriaceous, panicle terminating, trichotomous, corollas ventricofe, with roundifh fegments.
7. Lifianthus fempervirens.]
Bignonia fempervirens. *Lin. fpec.* 869. *Reich.* 3. 155. [a] *Mill. dict. n.* 7.
Gelfeminum f. Jafminum luteum odoratum virginianum fcandens fempervirens. *Cateſb. car.* 1. *t.* 53. *Rati hiſt.* 1769.
Syringa volubilis virg. &c. *Pluk. phyt. t.* 112. *f.* 5.
Leaves lanceolate-elliptic, fegments of the corolla ovate, blunt.
[8. Lifianthus glaber.
Lin. fyft. 197. *fuppl.* 134. *Smith. ic. ined. t.* 29.
Smooth, leaves ovate petioled, corymbs terminating.
9. Lifianthus Chelonoides.
Lin. fyft. 197. *fuppl.* 134.
Smooth, leaves oppofite fubconnate oblong, panicle terminating dichotomous racemefe.

DESCRIPTIONS, *&c.*

1. This elegant little plant rifes generally to the height of fourteen or fixteen inches or more: it is not much divided, but all the branches fhoot commonly to the fame height, and are furnifhed with oblong pointed leaves, placed oppofite. The flowers are large in proportion to the plant, are generally longer than the leaves, and ftand at the extremities of the branches [a].

According to Sloane, it rifes to about four or five feet high, being branched on every fide. The branches and twigs are woody. The pairs of leaves at an inch diftance from each other, an inch and half long, and half as much broad in the middle, fmooth, dark green, on petioles an eighth part of an inch in length. Flowers yellow, fuperior. Capfule pyramidal, oblong, covered with a few fmall leaves, three-celled, with great plenty of fmall brown feed in each cell.

Native of Jamaica, in a dry, fandy, but cool foil.

2. Browne remarks, that this plant may be deemed a variation of the foregoing: or that they are at leaft fo very like in the general make and habit, that the form of the leaves is almoft the only difference. Swartz, however, obferves, that the leaves are always heart-fhaped, the upper ones only being ovate and feffile; the corollas are alfo rather larger.

Native of Jamaica.

3. 4. 5. Natives of Jamaica.

6. Native of the mountains of Guadeloupe [a].

7. See the defcription under *Bignonia fempervirens*. Linnæus obferves that the feed-veffels are cordate, fimple filiques.

8. The whole plant fmooth. Stem upright, branched, round, leafy. Branchlets from the axils of the upper leaves, flowering at top. Leaves oppofite, oval rather than ovate, acute, quite entire, veined, paler underneath. Petioles fhort, connate-embracing, keeled. Stipules none. Flowers on few-flowered fimple umbels, terminating the ftem and branchlets. Pedicels upright, one-flowered. Bractes like the leaves, but fmaller, two or three at the bafe of each umbel. Calyx bell-fhaped, five-cleft; fegments unequal, acute: Corolla five times as long as the calyx, bell-funnel-form, with equal, acute clefts, and of a yellow colour. Filaments inferted towards the bafe of the corolla, equal, the length of the corolla. Anthers twin, cordate-oblong, opening in front. Germ fuperior, ovate. Style cylindric, after flowering twifted. Stigma two-lobed; lobes obovate, flat. Capfule ovate, acute, two-celled, two-valved; the valves bent in forming the partition. Found in South America by Mutis [a].

9. Stem herbaceous, fimple, round, fmooth, from two to three feet in height. Leaves elliptic-oblong, quite entire, bluntifh. Panicle divided into two or three long racemes. Flowers alternate, remote, directed one way, pendulous, yellow. Calyx globular. Tube of the corolla fomewhat recurved, gradually widening. Genitals afcending towards the tip. Germ pyramidal, attenuated into the compreffed ftyle. The two lobes or plates of the ftigma recurved and tuberculed. Capfule fmooth, hanging down with the ftyle.—The herb is very bitter, and ftrongly purgative. Native of Surinam [a]. Aublet's plant, which is cited as fynonymous in the Supplement, is diftinct from this, and a new fpecies [b].

PROPAGATION AND CULTURE.

7. See Bignonia fempervirens. The reft being natives of South America and the iflands of the Weft-Indies, are much more tender, and muft be nurfed in the bark-ftove.

LITA. (*Læta, Lævia, glabra, fmooth.*)
Lin. gen. Schreb. n. 1734. Voyria. *Aubl.* 208. *t.* 83. Vohiria. *Juſſ.* 141.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Rutaceæ*. *Gentianæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, erect, coloured, five-cleft, fharp, permanent.
COR. one-petalled, falver-fhaped. *Tube* cylindric, very long, enlarged at the bafe and tip: *border* five-cleft: *divifions* ovate, fpreading.
STAM. *Filaments* none. *Anthers* five, twin, in the throat of the corolla.
PIST. *Germ* oblong. *Style* filiform, length of the tube. *Stigma* headed, truncated.
PER. *Capfule* oblong, one-celled, two-valved.
SEEDS numerous, faw-duft-like, affixed to the margins of the valves.

OBS. *This genus is allied to* Gentiana, *but differs in the corolla, piſtil, and fruit.*

ESSENTIAL CHARACTER.

Cal. five-cleft, with two or three fcales at the bafe. *Cor.* falver-fhaped, with a very long tube, dilated at the bafe and throat, border five-cleft. *Anthers* twin, inferted in the throat. *Capf.* one-celled, two-valved. *Seeds* numerous.

SPECIES.

1. Lita rofea.
Voyria rofea. *Aubl. guian.* 209. *t.* 83. *f.* 1.
Flowers in pairs, fegments of the corolla acute.
2. Lita cærulea.
Voyria cærulea. *Aubl. guian.* 211. *t.* 83. *f.* 2.
Flowers in pairs, fegments of the corolla rounded.

DESCRIPTIONS, *&c.*

1. Root tuberous, fibrous, about a foot deep in the ground. Stem knobbed, quadrangular, with two little, connate fcales at each joint, pointed, fleſhy and brittle: as foon as it comes out of the ground, it divides into three, four or five branches, fcarcely an inch long, knobbed, fcaly, two-flowered, feldom one-flowered. Corolla rofe-coloured. Theſe flowers are almoft next the ground, moft of the ftem being concealed. The root, which is irregular, and as big as

[a] Browne. [a] Swartz.

[a] Smith. [a] Linn. fuppl. [a] Swartz. obſ.

the

the fift of a man, white within, and covered with a ruffet ſkin, is eaten in Guiana, where it grows wild, and differs not greatly from Potatoes. It flowers in may.

2. The branches of this are more numerous, the calyx is larger, with longer narrower ſegments; the corolla is blue, with a larger aperture to the tube, and the ſegments of the border larger, wider and rounded. Sometimes theſe are ſix in number, and then the flowers have ſix ſtamens.

Native of Guiana flowering in may.

Gentiana aphylla of Jacquin (amer. t. 60. f. 3.) which has only one ſtyle, is of this genus*.

LITHAGROSTIS. See *Coix*.

LITHONTHLASPI. See *Iberis* and *Thlaſpi*.

LITHOPHILA. (Λιθος φιλεω, *fond of rocks.*)
Swartz. prodr. 14. *Lin. gen. Schreb. n.* 1708.
Claſſ. 2. 1. Diandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* three-leaved; *leaflets* lanceolate, ſharp.
COR. *Petals* three, ovate-lanceolate, upright, converging, length of the leaflets of the calyx.
Nectary two-leaved: *leaflets* oppoſite, ſmaller than the corolla, keeled, acute, upright, compreſſed.
STAM. *Filaments* two, awl-ſhaped, upright, from the baſe of the germ, of the length of the nectary. *Anthers* roundiſh.
PIST. *Germ* roundiſh, ſuperior. *Style* upright, length of the ſtamens. *Stigma* obtuſe, emarginate.
PER. two-celled.
SEED . . . .

ESSENTIAL CHARACTER.

Cal. three-leaved. *Cor.* three-petalled. *Neft.* two-leaved.

SPECIES.

1. Lithophila muſcoides.
Swartz. prodr. 14.
Native of Navaza.]

LITHOSPERMUM. (Λιθοσπερμον *of Dioſcorides. From* λιθος *a ſtone, and* σπερμα, *a ſeed; which is of a ſtony hardneſs.*
Lin. gen. n. 181. *Reich. n.* 193. *Schreb. n.* 241. *Tournef. t.* 55. *Juſſ.* 130. *Gærtn. t.* 67.
Claſſ. 5. 1. Pentandria monogynia.
Nat. order of *Aſperifoliæ*. *Borragineæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, oblong, ſtraight, ſharp, permanent: *diviſions* awl-ſhaped, keeled.
COR. one-petalled, funnel-form, length of the calyx. *Tube* cylindric. *Border* half-five-cleft, obtuſe, upright. *Throat* perforated, naked.
STAM. *Filaments* five, very ſhort. *Anthers* oblong, incumbent, covered.
PIST. *Germs* four. *Style* filiform, length of the ſtamens. *Stigma* obtuſe, emarginate.
PER. none. *Calyx* grown larger, upright, containing the ſeeds in its boſom.
SEEDS four, rather oblong, obtuſe, gibbous.

ESSENTIAL CHARACTER.

Cal. five-parted. *Cor.* funnel-form, perforated at the throat, naked.

SPECIES.

1. Lithoſpermum officinale. *Common* or *officinal Gromwell.*
Lin. ſpec. 189. *Jyſt.* 185. *Reich.* 1. 385. *hort. cliff.* 46. *fl. ſuec. n.* 159. *mat. med.* 55. *Woodv. med. bot.* 134. *t.* 213. *Gærtn. fruct.* 1. 327. *Hudſ. angl.* 79. *Wither. arr. ed.* 3. 226. *Lightf. ſcot.* 132. *Relh. cant. n.* 147. *Engl. bot.* 134. *Hall. helv. n.* 595. *Scop. carn. n.* 186. *Pollich. pal. n.* 183. *Neck. gallob.* 99. *Fl. dan. t.* 1084. *Villars dauph.* 2. 450. *Krock. ſilef. n.* 271. *Gmel. ſib.* 4. 73. *Plenck. ic.* 75. *Ludw. eſſ.* 1. 147. *Knipb. cent.* 9. *n.* 59. *Sabb. hort. rom.* 2. *t.* 29. *Fuchſ. hiſt.* 489.
L. ſ. Milium ſolis. *Baub. hiſt.* 3. 590. 2. *Raii hiſt.* 503. *ſyn.* 228.
L. majus erectum. *Bauh. pin.* 258.—perenne, flore ochroleuco. *Mor. hiſt. ſ.* 11. *t.* 31. *f.* 1.
L. arvenſe. *Tabern.* 850.
L. minus. *Matth.* 918. *Dod. pempt.* 83. 2. *Cam. epit.* 659. *Ger.* 486. 2. *emac.* 609. 2.
L. vulgare minus. *Park. theat.* 432. 1.
Seeds ſmooth and even, corollas ſcarcely longer than the calyx, leaves lanceolate.
2. Lithoſpermum arvenſe. *Corn* or *Baſtard Gromwell.*
Lin. ſpec. 190. *Jyſt.* 185. *Reich.* 1. 385. *hort. cliff.* 46. *fl. ſuec. n.* 160. *Gærtn. fruct.* 1. 327. *Hudſ. angl.* 79. *Wither. arr. ed.* 3. 226. *Lightf. ſcot.* 133. *Relh. cant. n.* 148. *Engl. bot.* 123. *Hall. helv. n.* 594. (Heliotropium.) *Scop. carn. n.* 187. *Pollich. pal. n.* 184. *Neck. gallob.* 99. *Fl. dan. t.* 456. *Villars dauph.* 2. 450. *Krock. ſilef. n.* 272. *Knipb. cent.* 10. *n.* 56. *Thalib. ſap.* 81.
L. arvenſe radice rubra. *Baub. pin.* 258. *Lin. lapp. n.* 73.
L. arv. rad. rubente. *Park. theat.* 432. 6.
L. ſylveſtre arvenſe vel nigrum. *Camer. epit.* 660.
L. nigrum, flore albo ſemine echii. *Baub. hiſt.* 3. 592.
L. annuum tetracarpon, ſem. nigro auguloſo. *Mor. hiſt. ſ.* 11. *t.* 31. *f.* 7.
Echioides flore albo. *Ritvir. mon. t.* 9. *f.* 1.
Anchuſa degener facie Milii ſolis. *Ger. emac.* 610. 4. *Raii hiſt.* 503.
Bugloſſum arvenſe annuum Lithoſpermi folio. *Tournef. inſt.* 134. *Garid* 68. *Raii ſyn.* 227.
Seeds ovate wrinkled, calycine leaflets lanceolate, corollas ſcarcely longer than the calyx, leaves lanceolate ſharpiſh hiſpid.
[3. Lithoſpermum incanum. *Hoary Gromwell.*
Forſk. flor. auſtrol. n. 63.
Seeds rough, ſpikes terminating compound contracted, leaves linear-villoſe.]
4. Lithoſpermum virginianum. *Virginian Gromwell.*
Lin. ſpec. 190 *Jyſt.* 185. *Reich.* 1. 386. *Gron. virg.* 140. 24.
L. latifolium virg. flore albido longiore. *Mor. hiſt. ſ.* 11. *t.* 28. *f.* 3. *row* 3. *Raii ſuppl.* 272.
Corollas longer than the calyx acute rough-haired on the outſide, leaves ovate acute hiſpid nerved.
[5. Lithoſpermum tinctorum. *Dyer's Gromwell.*
Vahl ſymb. 2. 33. *t.* 28.
Arnebia tinctoria. *Forſk. deſcr.* 62, 63.
Seeds ſmooth and even, ſpike ſolitary terminating directed one way, braftes lanceolate, leaves linear-lanceolate blunt.]
6. Lithoſpermum orientale. *Yellow Gromwell* or *Bugloſs.*
Lin. ſyſt. 185. *Reich.* 1. 386.
Anchuſa orientalis. *Lin. ſpec.* 191. *hort. cliff.* 47. *Pallas it.* 3. 665. *Mill. dict. n.* 4.
Aſperugo divaricata. *Murr. in comm. gott.* 1776. *p.* 25. *t.* 2.
Bugloſſum orient. flore luteo. *Tournef. cor.* 6. *Buxb. cent.* 3. 17. *t.* 29. *Dill. elth.* 60. *t.* 52. *f.* 60.
Flowering-branches lateral, braftes cordate embracing.
7. Lithoſpermum purpurocæruleum. *Creeping Gromwell.*
Lin. ſpec. 190. *Jyſt.* 185. *Reich.* 1. 386. *hort. cliff.* 46. *Hudſ. angl.* 79. *Wither. arr. ed.* 3. 226. *Engl. bot.* 117. *Hall. helv. n.* 596. *Scop. carn. n.* 185. *Pollich pal. n.* 185. *Jacqu. auſtr.* 1. 11. *t.* 14. *D'Aſſo arrag. n.* 152. *Villars dauph.* 2. 451. *Krock. ſilef. n.* 273.
L. majus. *Dod. pempt.* 83. 1. *Ger.* 486. 1. *emac.* 609. 1.—repens. *Cluſ. hiſt.* 2. 163. 2.—vulgare. *Park. theat.* 431.—flore purpureo, ſemine Anchuſæ. *Baub. hiſt.* 3. 592. *Raii hiſt.* 503. *ſyn.* 229. *Petiv. brit.* 29. 6.
L. minus repens latifolium. *Baub. pin.* 258.
L. perenne procumbens flore purpuro-cæruleo. *Mor. hiſt. ſ.* 11. *t.* 31. *f.* 2.
L. umbellatum latif. *Bocc. ſic.* 75. *t.* 40. & anguſtif. *t.* 41.
Anchuſa repens, &c. *Pluk. phyt. t.* 76. *f.* 2.
Seeds ſmooth and even, corollas twice as long as the calyx, leaves lanceolate ſomewhat hairy.
[8. Lithoſpermum tenuiflorum.
Lin. ſyſt. 185. *ſuppl.* 130.
Bugloſſum chium arvenſe annuum, lithoſpermi folio, flore cæruleo. *Tourn. cor.* 6.
Corollas filiform, leaves linear-lanceolate ſcrigoſe.]

* Aublet & Juſſieu.

9. Lithoſpermum fruticoſum. *Shrubby Gromwell.*
Lin. ſpec. 190. *ſyſt.* 185. *Reich.* 1. 387. *D'Aſſo arrag.* 153. *Saxv. monſp.* 50. 63. *Barr. ic.* 1168. (Anchuſa)
Anchuſa anguſtifolia. *Bauh. pin.* 255.
Bugloſſum fruticoſum roſmarini folio. *Garid. aix.* 68. *t.* 15.
β. Anchuſa arborea. *Alp. exot.* 69. *t.* 68.
Bugloſſum famium frutescens, fol. roſmarini obſcure virentibus lucidis & hirſutis. *Tournef. cor.* 6.
Shrubby, leaves linear biſpid, ſtamens equalling the corolla.

[10. Lithoſpermum calloſum.
Vahl ſymb. 1. 14. *Forſk. deſcr.* 39.
Leaves lanceolate-linear callous warted biſpid, ſtem ſuffruticoſe biſpid.

11. Lithoſpermum ciliatum.
Vahl ſymb. 1. 14. *Forſk. deſcr.* 39.
Leaves ovate hoary callous at the edge ciliate, ſtem ſuffruticoſe muricated biſpid.

12. Lithoſpermum diſperſum.
Lin. ſpec. 191. *ſyſt.* 185. *Reich.* 1. 387. *Der.* 1. 13. *t.* 7.
Seeds only two, calyxes ſpreading.

DESCRIPTIONS, &c.

1. Root perennial, ſtrong. Stems erect, roundiſh, rough with cloſe-preſſed briſtles, and clothed with alternate, entire leaves, which are ſlightly revolute on their margin, hairy beneath, rough above with minute cartilaginous tubercles. Each of the numerous flowering-branches terminates in a recurved leafy ſpike of pale yellowiſh flowers: in the ſeeding ſtate theſe branches become erect, much elongated, and the leaves they bear are conſiderably enlarged, being broader than thoſe on the ſtem. It is ſeldom that more than two ſeeds are perfected in each flower: they are exquiſitely poliſhed, of a gray or yellowiſh hue, very hard, but brittle, ſeeming of a ſtony ſubſtance; whence the generic name, and whence alſo the ancient celebrity of theſe ſeeds as a cure for the ſtone, without the leaſt ſhadow of a reaſon[a].

Gærtner calls them ſtony, egg-ſhaped nuts, marked on the inſide with a ſtreak and two obſolete lines, imperforate, one-celled, valveleſs: ſeed ovate-beaked, black-brown.

Native of moſt parts of Europe, in dry, gravelly and chalky ſoils, with us in general ſparingly, but common in ſome woods. It flowers in may and june.

2. Root annual, ſmall, and not much branched; its bark abounding with a deep red dye, which ſtains paper, linen, &c. and is eaſily communicated to oily ſubſtances. Hence the name of Baſtard Alkanet, ſometimes given to this plant. Linneus, in his Flora Suecica informs us, that the country girls in the north of Sweden uſe the root to ſtain their faces on days of feſtivity.—Stem upright, a foot high or more, round or ſlightly angular, rough with cloſe-preſſed hairs, often much branched at top. Leaves alternate, lanceolate, entire, rigid, ſeſſile, rough with briſtly hairs cloſe-preſſed, ſtanding out from the edge. Flowers ſolitary, nearly ſeſſile, in the axils of the upper leaves. Corolla ſmall and white, with five ſwellings round its orifice, exactly as in L. purpuro-cæruleum. Very near the bottom of the tube ſtand the five very ſhort minute ſtamens, on a level with the ſtyle, which is about half as long as the tube. Seeds brown, rugged; rather covered with hard tubercles than wrinkled: two, three, or four, but generally three, with one abortive: ſometimes when there are four perfect ſeeds, there are two others abortive, and ſix diviſions in the calyx. The calycine ſegments are narrower than in L. officinale, and after flowering are three or four times as long as the ſeeds, whereas in the preceding ſpecies they are not twice the length[b]. Gærtner ſays, the nuts are ſtony, ovate, acuminate-beaked, convex on one ſide, angular on the other by means of a keel along the middle, rugged all over with tubercles.

Frequent in corn fields and waſte places, flowering from may to july.

[a] Engl. bot. [b] Engl. bot. Withe. Pollich.

3. This is a ſhrubby ſpecies, found in Teautea and Savage iſlands[c].]

4. Root perennial. Stems ſeveral, very hairy, about a foot and half high. Leaves ſeſſile, alternate. Flowers in ſhort reflexed ſpikes at the ends of the branches. Corolla white, longer than the calyx, the ſegments ending in acute points.

[Linneus remarks, that the dots ſcattered over the leaves are excavated, and that the wider of theſe have a briſtle iſſuing from them.

Native of Virginia and Maryland.] It flowers here in june, and the ſeeds ripen in autumn.

[Cultivated by Mr. Miller, in 1759.

5. Root fuſiform, two inches long, annual. Stems ſeveral, a finger's length, quite ſimple, ſhaggy with hairs, as is the whole plant; the lateral ones decumbent, the middle one erect. Leaves ſeſſile; thoſe next the root near two inches long, narrowed towards the baſe; thoſe on the ſtem an inch long and blunt. Spike the length of the ſtem, cloſely imbricate. Bracte linear-lanceolate at the baſe of the calyx, the length of the flower. Calyx deeply five-parted, with linear, bluntiſh ſegments: when fruit-bearing twice the ſize. Corolla longer than the calyx, with a filiform tube. Nuts four, obcordate-triangular, even, ſhining, convex on the outſide, flat on the inſide.

It differs from L. apulum (Myoſotis apula. *Lin.*) to which it is very nearly allied, in having a laxer ſtem, longer blunt leaves, a ſolitary ſpike terminating the ſtem, and as long if not longer than it, narrower blue corollas, and ſeeds twice as big[d].

Native of Egypt.

6. Stem barren upright, with fewer hairs. Leaves lanceolate, narrower at the baſe, quite entire, blunt, with dewy hairs on each ſide. Flowering-branches from the axils of the lower leaves, with cordate ſmaller bractes, having alſo dewy hairs. Flowers ſubpedunculed, yellow. Filaments ſhorter than the tube with black anthers[e].] It is a perennial plant, with long trailing branches; the under leaves are long, broad and hairy, diminiſhing as they approach the top. The flowers are about the ſame ſize with thoſe of common Bugloſs: there is a ſucceſſion of them great part of the year.

Native of the Levant. [Cultivated in 1713, in the botanic garden at Cheliſea. It flowers in may and june[f].

7. The long woody perennial root produces many round hairy leafy ſtems, moſt of which are procumbent, and throw out roots; the flowering ones only are perfectly erect, and from twelve to eighteen inches high. Leaves numerous, alternate, acute, clothed with ſhort cloſe-preſſed briſtles, which on the upper ſide of the leaf often ariſe from minute white tubercles, or warts, as in many of this natural order. The beautiful flowers appear in april or may, ſtanding erect in a ſort of double leafy ſpike, with the extremities a little curved downwards before flowering. Calyx hairy, divided to the baſe into five very narrow linear obtuſe ſegments. Corolla firſt purple, then blue, with a pale reddiſh tube; round its orifice are five blunt hairy ſwellings, which however do not cloſe it. Filaments ſomewhat ſhorter than the tube, and united with it half way up. Style about the ſame length, with a ſlightly-notched ſtigma. Germ and ſeeds very ſmooth; the latter frequently abortive, as in other plants that increaſe much by their roots[g].—The ſegments of the calyx, after flowering, become much longer, as in L. arvenſe[h], and other plants of this natural order.

Native of moſt of the temperate parts of Europe. Found in the Weſt of England, as in Somerſetſhire near Taunton. Near Denbigh in Wales. Mr. Latham diſcovered it in a chalky ſoil near Greenhithe in Kent.

8. This is an annual plant, a hand or a ſpan in height, like the ſecond ſpecies in minature. Stem upright, filiform, with one or two branches, ſubpubeſcent. Leaves alternate, ſeſſile, very ſhortly ſtrigoſe or hairy, bluntiſh. Calyxes on the branches all

[c] Forſter. [d] Vahl. [e] Linn. [f] Hort. kew.
[g] Engl. bot. [h] Withering.

directed one way, subpedicelled, alternate, oblong, five-parted, as in L. arvense. Corollas very small, blue: tube the length of the calyx; limb minute.

Native of Egypt[1].]

9. Root perennial, running deep into the ground. Stem upright, shrubby, from two to three feet high, pretty closely set with hairs. The flowers are produced in short reflex spikes. Calyxes hairy. Corollas reddish purple, changing to a deep purple; the two upper segments are turned back.

[Native of the South of Europe and the Levant. Cultivated in 1683, by Mr. James Sutherland. It flowers in may and june[2].

10. Stem a long span in height, with a white bark, villose at bottom, hispid at top: branches the height of the stem, once or twice divided at top. Leaves sessile, remote, blunt, with white callosities all over them, and with rigid concolor bristles towards the end. Spike terminating, revolute, extremely hirsute; with a linear leaflet, longer than the calyx, and ciliate, at the base of each flower. Tube of the corolla villose. It varies with the branches more or less erect.

11. This is a small stiff shrub, upright, a long span in height, hoary, muricated at top, hispid, very much branched: branches dichotomous. Leaves half embracing, patulous at the tip, warted with white callosities at the edge, small. Spike lateral, half an inch in length[1].

12. Root annual. Stem herbaceous, a hand in height, round, hispid, upright, dividing at top into two almost upright branches, seldom more. Stem-leaves alternate, sessile, tongue-shaped, spreading very much or recurved, channelled, blunt, hispid, somewhat rugged, an inch long, veinless. Branch-leaves lanceolate, acute, erect, smaller. Flowers alternate, directed one way, opposite to the branch-leaves, on short round hispid peduncles. Calyx hispid, a little shorter than the corolla. Corolla blueish white, small; border flattish. Filaments scarcely visible with the naked eye. Germs only two. Seeds ovate, acuminate, even, converging.

Native of Spain, between Madrid and Cadiz[m].

Of the foregoing species the following are

- Herbaceous
  - Annual. 2. 5. 8. 12.
  - Perennial. 1. 4. 6. 7.
- Shrubby. 3. 9. 10. 11.

Seeds
- Smooth. 1. 5. 7. 12.
- Rugged. 2. 3.

Leaves
- Lanceolate. 1. 2. 6. 7.
- Linear-lanceolate. 5. 8. 10.
- Linear. 3. 9.
- Ovate. 4. 11.
- Tongue-shaped. 12.

Corolla
- White. 2. 4.
- Pale yellow. 1.
- Yellow. 6.
- Blue. 5. 7. 8.
- Blueish white. 12.
- Purple. 9.]

PROPAGATION AND CULTURE.

These plants may be cultivated by sowing their seeds soon after they are ripe, in a bed of fresh earth, allowing them room, and keeping them clear from weeds. They will thrive in almost any soil and situation: [and if the seeds be permitted to scatter, the plants will in general rise without care. Some of the sorts (6. 7.) are not without their beauty. The first being wild is seldom cultivated, and the second is a common weed among corn.

[LITHOSPERMUM. See *Anchusa. Coix. Linum. Myosotis. Pulmonaria. Stellera.*

LITHOXYLUM. See *Fucus.*

LITTORELLA. (*Dimin. from Littus, the shore; this plant growing on the sea coast.*)

Lin. gen. Reich. n. 1145. *Schreb. n.* 1415. *Berg. in act. fuec.* 1768. *Juss.* 90.

Class. 21. 4. Monoecia Tetrandria.

Nat. order of *Plantagines* Juss.

[1] Linn. suppl. [2] Hort. kew. [m] Linn. dec. [1] Vahl.

* *Male.*

CAL. *Perianth* four-leaved, upright.

COR. one-petalled. *Tube* the length of the calyx. *Border* four-parted, upright, permanent.

STAM. *Filaments* four, filiform, very long, inserted into the receptacle. *Anthers* heart-shaped.

* *Female* in the same plant.

CAL. none.

COR. one-petalled, conic, with slightly four-cleft mouth; permanent.

PIST. *Germ* oblong. *Style* filiform, very long. *Stigma* acute.

PER. the investing *corolla.*

SEED. *Nut* one-celled.

OBS. *The flower is that of Plantain, but the fruit different.*

ESSENTIAL CHARACTER.

MALE. *Cal.* four-leaved. *Cor.* four-cleft. *Stam. long.*

FEM. *Cal.* none. *Cor.* slightly four-cleft. *Styles* long. *Seed* a nut.

SPECIES.

1. Littorella lacustris. *Plantain Shoreweed.*
   Lin. fil. 848. *Reich.* 4. 124. *mant.* 295. *Berg. in act. Stockh.* 1768. *p.* 341. *Hudf. angl.* 415. *Wither. arr. ed.* 3. 194. *Lightf. scot.* 571. *Relh. cant. n.* 701. *Fl. dan. t.* 170. *Gifeke ic. faec.* 1. *t.* 21.
   Plantago uniflora. *Lin. spec.* 167. *fl. lapp. n.* 64. *fuec. n.* 135. *Hull. helv. n.* 655. *Juss. in act. par.* 1742. *p.* 131. *t.* 7. *Guett. stamp.* 2. 26.
   Plantago palustris, &c. *Tournef. inst.* 128. *Raii syn.* 316.
   Gramen junicum. f. Holosteum minimum palustre, &c. *Pluk. phyt. t.* 35. *f.* 2. *Mor. hist.* 3. 230. *f.* 8. *t.* 9. *f.* 30. *Raii hist.* 1310.
   Subularia repens fol. convexo-planis. *Dill. muse.* 542. *t.* 81.

DESCRIPTION, *&c.*

The root shoots out long running fibres, which take root afresh, and thus in a short time cover the brink of the lakes with tufts of semicylindrical linear acute leaves, about two inches long. Three, four or more naked stalks arise from between the leaves, about an inch and half long, terminated each with one greenish male flower. The female flowers are sessile, commonly two, sometimes three, at the base of the male stalk[1].

Linnæus in his earlier works, following Tournefort, placed this plant with the Plantagos. It has indeed their flower; but the stamens and pistils being found in separate flowers, though on the same plant, and the fruit being different from that of the Plantains, he afterwards separated it from that genus. He remarks, that the male flower is on a stalk, taller than the female: the female flower sessile at the root, and the style often as long as the stalk of the male flower.

Native of the north of Europe, on the shores of lakes.

Ray, who ranges it with the Rush-Grasses, and calls it the smallest Marsh Plantain, observed it near Cambridge, Glasgow and Penzance. Frequent in Scotland and some parts of Wales. On Hounslow heath. Near Lowestoft, Suffolk. Hoseley lough, Northumberland, &c. On the margins of all the lakes in Ireland, that have gravelly shores.

LIVE-IN-IDLENESS. See *Viola.*

LIVE-LONG. See *Telephium.*

LIVERWORT. See *Anemone* and *Lichen.*

LIZARDS-TAIL. See *Saururus.*

LOASA. (*Probably so named, by Adanson, from some Spanish Botanist.*)

Adanf. fam. 2. 501. *Jacqu. obf. t.* 38. *Juss.* 322.

Loola. *Lin. gen. Reich. n.* 724. *Schreb. n.* 908.

Class. 13. 1. Polyandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, superior, permanent: *leaflets* lanceolate, very spreading, with reflex sides.

COR. *Petals* five, obovate, hooded, large, extremely spreading, narrowed at the base into claws,

[1] Lightfoot.

Nectary of five leaflets, alternating with the petals, converging into an acute cone, rather ſhorter than the calyx, lanceolate, rugoſe, awned with a double filament.

STAM. *Filaments* numerous, capillary, longer than the nectary, from fifteen to ſeventeen to each petal. *Anthers* incumbent, roundiſh.

PIST. *Germ* ſubovate, ſeed-bearing. *Style* filiform, upright, the length of the ſtamens. *Stigma* ſimple, obtuſe.

PER. *Capſule* top-ſhaped, one-celled, three-valved at the tip; valves ſemi-ovate, acute, ſpreading.

SEEDS a great many, ovate, ſmall. *Receptacles* three longitudinal lines running from the bottom of the capſule to the inciſures of the valves.

OBS. *In point of affinity it approaches to* Mentzelia. *Jacqu. In habit, and ſituation of the germ and ſeeds, it approaches the Cucurbitaceous plants.*

ESSENTIAL CHARACTER.

Cal. five-leaved, ſuperior. *Cor.* five-petalled; petals hooded. *Nect.* five-leaved, converging. *Capſ.* turbinate, one-celled, three-valved, many-ſeeded.

SPECIES.

1. Loaſa hiſpida.
Lin. ſyſt. 495. *Reich.* 2. 588.
L. urens. *Jacqu. obſ.* 2. 15. *t.* 38.
Ortiga chiloenſis urens, acanthi folia. *Feuill. peruv.* 2. 757. *t.* 43.

DESCRIPTION, *&c.*

This is an elegant annual plant, riſing from a fibrous white root, the thickneſs of the little finger. It is ſubdivided into ſpreading branches; and is armed all over with ſtiff ſhining brownish prickles, that ſting like the nettle. Stems round, whitiſh green, marked here and there with ſhort brown longitudinal lines. Leaves pinnatifid, petioled, irregularly alternate, rough, blunt: the ſegments pinnatifid, tooth ſinuate; in the upper ones leſs divided, but very unequal. The uppermoſt leaves are only ſinuate. All the branches terminate in very looſe racemes. Peduncles ſolitary, an inch long, both axillary and oppoſite to the leaves. Bractes none. Flowers elegant but void of ſcent. Calycine ſegments acuminate, hairy. Petals ſomewhat hairy, and finally turned back. The filaments are erect, but after the exploſion of the pollen are ſucceſſively bent back. Germ hairy, half inferior. Capſule rough-haired, furrounded at top with the ſhrivelled ſegments of the calyx. The petals are yellow; the nectaries white variegated with red and green dots. Theſe are at a little diſtance from each other, the filaments whilſt they remain upright occupying the interſtices, and the anthers exploding their pollen whilſt they are cloſe to the ſtigma. After the fecundation is completed the filaments retire gradually under the arches of the petals. Adanſon calls theſe ſmall laminæ petals, and therefore makes the number of the petals ten.

Feuillée ſays, that the corolla in his plant is red and deep green beneath, and that the leaves are oppoſite, Adanſon affirms that the capſule is five-valved, and the petals connected, which is not the caſe in Jacquin's plant. Perhaps Feuillée's and Adanſon's plant may be the ſame, and different from Profeſſor Jacquin's.

Native of South America, and cultivated at Vienna before 1767*.

LOBELIA. *(So named by Plumier, from Matthias de Lobel, a Flemiſh botaniſt, born* 1538. *Phyſician and Botaniſt to K. James I. Died at London,* 1616.

Lin. gen. n. 1006. *Reich. n.* 1091. *Schreb. n.* 1363. *Gærtn. t.* 25. *Juſſ.* 165. Dortmanna. *Rudb. A. V.* 1720. Laurentia. *Mich.* 14. Rapuntium. *Tournef. t.* 51. *Dill. elth.* 242. *Gærtn. t.* 30.

Claſſ. 19. 6. Syngeneſia Monogamia.

Nat. Order of *Campanaceæ*. *Campanulaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-cleft, very ſmall: growing round the germ, withering: *toothlets* nearly equal: the *two ſuperior ones* looking more upward.

COR. one-petalled, irregular. *Tube* cylindric, longer than the calyx, divided longitudinally above: *Border* five-parted, *diviſions* lanceolate; of which the *two ſuperior ones* are ſmaller, leſs reflex, more deeply divided, conſtituting an upper lip: the *three inferior ones* more ſpreading, frequently larger.

STAM. *Filaments* five, awl-ſhaped, the length of the tube of the petal, connate above. *Anthers* connate into an oblong cylinder, gaping five-ways at the baſe.

PIST. *Germ* ſharp-pointed, inferior. *Style* cylindric, length of the ſtamens. *Stigma* obtuſe, hiſpid.

PER. *Capſule* ovate, two or three-celled, two or three-valved, gaping at the top, girt by the calyx. *Diſſepiments* contrary to the valves.

SEEDS a great many, very ſmall. *Receptacle* conic.

ESSENTIAL CHARACTER.

Cal. five-cleft. *Cor.* one-petalled, irregular. *Capſ.* inferior, two or three-celled.

SPECIES.

* *With entire leaves.*

1. Lobelia ſimplex. *Slender Lobelia.*
Lin. ſyſt. 800. *Reich.* 3. 953. *mant.* 291.
L. debilis. *Lin. ſuppl.* 395.
Stem upright, leaves linear quite entire, peduncles ſolitary.
2. Lobelia Columneæ. *Mealy Lobelia.*
Lin. ſyſt. 800. *ſuppl.* 393. *Smith. ic. ined.* 1. *t.* 22.
Leaves oblong blunt revolute very much wrinkled, ſtowing above, tomentoſe beneath.
3. Lobelia bellidifolia. *Daiſy-leaved Lobelia.*
Lin. ſyſt. 800. *n.* 12. *ſuppl.* 396.
Stem upright panicled, leaves obovate crenate.
4. Lobelia pinifolia. *Pine-leaved Lobelia.*
Lin. ſpec. 1318. *ſyſt.* 800. *Reich.* 3. 954. *Berg. cap.* 343. *Breyn. cent.* 173. *t.* 87. *Burm. afr.* 111. *t.* 41. *f.* 2. *Raii ſuppl.* 384. *n.* 14. (Rapunculus) item, Rapuntium *n.* 31. *p.* 385.
Shrubby, leaves linear cluſtered quite entire.
5. Lobelia Dortmanna. *Water Lobelia* or *Gladiole.*
Lin. ſpec. 1318. *ſyſt.* 800. *Reich.* 3. 954. *fl. lapp. n.* 279. *ſuec. n.* 783. *hort. cliff.* 426. *Hudſ. angl.* 377. *Wither. arr. ed.* 3. 245. *Engl. bot.* 140. *Lightf. ſcot.* 505. *t.* 21. *Fl. dan. t.* 39.
Dortmanna lacuſtris, flor. ſparſis pendulis. *Rudb. act. upſ.* 1720. *p.* 97. *t.* 2. (*p.* 17. *f.* 7.)
Gladiolus ſtagnalis ſ. lacuſtris. *Rudb. elyſ.* 2. 202. *f.* 15.
G. ſtagn. Dortmanni. *Cluſ. cur.* 40. *Raii hiſt.* 1325. 1911. *ſyn.* 287. *Petiv. brit. t.* 67. *f.* 7.
G. lac. Cluſii, ſ. Leucoium paluſtre, flore ſubcæruleo. *Park. theat.* 1250.
Leucoium pal. flore ſubcæruleo. *Baub. pin.* 41.
Campanula aquatica. *Blair. obſ.* 103. *t.* 2.
Leaves linear two-celled quite entire, ſtem almoſt naked.
6. Lobelia Tupa.
Lin. ſpec. 1318. *Reich.* 3. 954. *Feuill. peruv.* 2. 739. *t.* 29. (Rapuntium.)
Leaves lanceolate quite entire, raceme ſpiked.
7. Lobelia Kalmii.
Lin. ſpec. 1318. *Reich.* 3. 955. *Tournef. inſt.* 164. (Rapuntium.)
Stem upright, leaves lanceolate-linear bluntiſh alternate quite entire, raceme terminating.
8. Lobelia paniculata. *Panicled Lobelia.*
Lin. ſpec. 1319. *Reich.* 3. 955. *Burm. afr.* 100. *t.* 83. *f.* 3.
Leaves linear quite entire, panicle dichotomous.
9. Lobelia grandis. *Great Lobelia.*
Lin. ſyſt. 800. *ſuppl.* 394.
Leaves oblong quite entire ſmooth, corymbs bractled, corollas hiſpid.
10. Lobelia ferruginea. *Ruſt-coloured Lobelia.*
Lin. ſyſt. 801. *ſuppl.* 394.
Stem villoſe, leaves lanceolate ſerrate acute, where the veins anaſtomoze ruſt-coloured-tomentoſe on both ſides, genitals elongated.
11. Lobelia chinenſis. *Chineſe Lobelia.*
Lour. cochinch. 514.
Leaves lanceolate quite entire, flowers ſolitary terminating, ſtem creeping.
12. Lobelia cornuta. *Horned Lobelia.*
Lin. ſpec. 1319. *Reich.* 3. 955.

* Jacqu. obſ.

Leaves ovate petioled, flamens very long.
** *With an upright stem and gashed leaves.*
13. Lobelia Phyteuma.
Lin. spec. 1319. *Reich.* 3. 955.
Leaves ovate-oblong crenate, stem almost naked spiked, anthers hirsute distinct.
14. Lobelia bulbosa. *Tuberous-rooted Lobelia.*
Lin. spec. 1319. *fil.* 800. *Reich.* 3. 955. *suppl.* 396.
Cyphia bulbosa. *Berg. cap.* 172. *Lin. mant.* 482.
Rapuntium tuberosum, &c. *Burm. afr.* 99. *t.* 38. *f.* 2.
Stem upright, lower leaves petiolate.
15. Lobelia triquetra. *Tooth-leaved Lobelia.*
Lin. fil. 800. *Reich.* 3. 955. *mant.* 120.
β. L. comosa. *Lin. spec.* 1323. *hort. cliff.* 500.
L. corymbosa. *Berg. cap.* 344.
Stem upright, leaves lanceolate toothed, raceme terminating leafless.
16. Lobelia longiflora. *Long-flowered Lobelia.*
Lin. spec. 1319. *fil.* 800. *Reich.* 3. 956. *mant.* 482. *Brown. jam.* 322. 1. *Jacqu. amer.* 219. *pict.* 107. *t.* 200. *hort. t.* 27.]
Rapuntium longiflorum. *Mill. dict. n.* 7. *descr. n.* 8.
Rapunculus aquaticus, fol. cichorei, flore albo, tubo longissimo. *Sloan. jam. t.* 101. *f.* 2. *Raii suppl.* 383.
Trachelium sonchi folia, flore albo longissimo. *Plum. spec.* 38. *it.* 253. *f.* 1.
Leaves lanceolate toothed, peduncles very short lateral, tube of the corolla filiform very long.
[17. Lobelia tomentosa. *Downy Lobelia.*
Lin. fil. 800. *suppl.* 394.
Straight, tomentose, leaves linear toothed, peduncles terminating very long one or two-flowered.
18. Lobelia secunda.
Lin. fil. 801. *suppl.* 395.
Upright, smooth, lower leaves oblong toothed, upper lanceolate entire, peduncles racemed directed one way.
19. Lobelia affurgens. *Tree Lobelia.*
Lin. spec. 1321. *Reich.* 3. 956. *amoen.* 5. 408. *Swartz. obs.* 317. *Brown. jam.* 322. 3.
Leaves broad-lanceolate serrate, toothletted and decurrent below, racemes compound terminating.
20. Lobelia patula. *Spreading Lobelia.*
Lin. fil. 801. *suppl.* 395.
Herbaceous, diffused, virgate, smooth, leaves ovate toothed, peduncles lateral.
21. Lobelia acuminata. *Pointed-leaved Lobelia.*
Swartz. prodr. 117. *Brown. jam.* 322. 2.
Rapunculus folio oblongo, &c. *Sloan. jam.* 1. 158. *t.* 95. *f.* 2.
Stem upright suffruticose, leaves lanceolate attenuated serrulate, raceme terminating many-flowered.
22. Lobelia stricta.
Swartz. prodr. 117.
Stem upright suffruticose, lower leaves ovate-lanceolate smooth toothletted and prickly at the edge, raceme terminating spiked.
23. Lobelia Cardinalis. *Scarlet Lobelia*, or *Cardinal's flower.*
Lin. spec. 1320. *fil.* 801. *Reich.* 3. 957. *hort. cliff.* 426. *ups.* 276. *Gron. virg.* 34. *Knipb. cent.* 4. *n.* 42. *Knorr. del.* 2. *t.* L. 2. *Mill. illustr. Curt. magaz.* 320.]
Rapuntium Cardinalis. *Mill. dict. n.* 1.
R. galeatum virginianum, coccineo flore majore. *Mor. hist.* 2. 466. *f.* 5. *t.* 5. *f.* 54.
R. maximum coccineum, spicato flore. *Herm. lugd.* 879. *t.* 880.
R. americanum flore coccineo. *Rob. ic.* 263.
Trachelium amœnum, rubrum. *Pervarii. Raii hist.* 746.
—flore rubro nano, C. Planta Cardinalis. *Park. parad.* 356. *t.* 355. *f.* 6.
Stem upright herbaceous, leaves oblong-lanceolate serrate somewhat villose, flowers in a sort of spike, calyxes smooth, segments quite entire.
24. Lobelia syphilitica. *Blue Lobelia* or *Cardinal flower.*
Lin. spec. 1320. *fil.* 801. *Reich.* 3. 957. *mant.* 482. *hort. cliff.* 426. *mat. med.* 194. *Woodv. med. bot.* 177. *t.* 63. *amoen.* 4. 527. *Gron. virg.* 134. *Knipb. cent.* 8. *n.* 60. *Jacqu. ic.* 3. *t.* 597. *elliott.* 1. 263.

Rapuntium syphiliticum. *Mill. dict. n.* 2. *Gærtn. fruct.* 1. 152.
R. americanum flore dilute cæruleo. *Dedart. turn.* 105. *Rob. ic.* 264.
Rapunculus galeatus virginianus flore violaceo majore. *Mor. hist.* 2. 466. *f.* 3. *t.* 5. *f.* 55.
Stem upright, leaves ovate-lanceolate subserrate, sinuses of the calyx reflex.
[25. Lobelia laciniata.
L. arborea. *Forst. flor. austral. n.* 308.
Shrubby, leaves smooth elliptic-lanceolate serrate, pedicles axillary solitary without bractles, calyxes smooth.
26. Lobelia furinamensis.
Lin. spec. 1320. *Reich.* 3. 957. *Curt. magaz.* 225. *Act. hort. kew.* 3. 498.
L. lævigata. *Lin. fil.* 801. *suppl.* 392.
Suffruticose, leaves oblong serrate smooth, pedunctes axillary solitary bractled at the base, calyxes toruloſe.
27. Lobelia inflata. *Bladder-podded Lobelia.*
Lin. spec. 1320. *Reich.* 3. 958. *hort. upsal.* 276. *cliff.* 500. *Act. upsal.* 1741. *p.* 23. *t.* 1. *Gron. virg.* 34.]
Rapuntium inflatum. *Mill. dict. n.* 5.
Stem upright, leaves ovate subserrate longer than the peduncle, capsules inflated.
28. Lobelia chiffortiana. *Purple Lobelia.*
Lin. spec. 1320. *fil.* 801. *Reich.* 3. 958. *hort. cliff.* 426. *t.* 26. *Gron. virg.* 107. 134.
Rapuntium chiffortianum. *Mill. dict. n.* 3.
R. trachelii folio, flore purpurascente. *Plum. spec.* 5. *ic.* 235. *f.* 2.
Stem upright, leaves cordate even obsoletely toothed petioled, corymb terminating.
29. Lobelia urens. *Stinging Lobelia.*
Lin. spec. 1321. *fil.* 801. *Reich.* 3. 958. *Hudſ. angl.* 378. *Wither. arr. ed.* 3. 246. *Lœfl. it.* 167.
Rapuntium urens. *Mill. dict. n.* 4.—foliolense. *Mor. hist.* 300. *Bocc. ſic. t.* 11. *Raii hist.* 746. *Monn. obs.* 131.
Rapunculus galeatus, &c. *Mor. hist.* 2. 467. *f.* 5. *t.* 5. *f.* 56.
Draba flore cæruleo galeato. *Baub. prodr.* 110. *pin.* 63.
Stem upright smooth angular, leaves lanceolate toothed smooth, racemes spike-shaped, calycine segments awl-shaped even.
[30. Lobelia minuta. *Least Lobelia.*
Lin. fil. 801. *Reich.* 3. 959. *mant.* 292.
Root-leaves ovate, scapes capillary.
31. Lobelia volubilis. *Twining Lobelia.*
Lin. fil. 801. *suppl.* 396. *Burm. prodr.* 25.
Stem twining.
*** *With a prostrate stem, and gashed leaves.*
32. Lobelia Laurentia. *Italian annual Lobelia.*
Lin. spec. 1321. *fil.* 801. *Reich.* 3. 959. *Gouan. hort.* 466. *var.* β. *Schreb. in nov. act. nat. cur.* 3. 480.
Laurentia annua minima flore cæruleo. *Mich. gen.* 18. *t.* 14.
Rapunculus aquaticus repens, flore cæruleo inaperto. *Raii suppl.* 383. *Bocc. mus.* 35. *t.* 27.
β. Rapuntium creticum minimum bellidis folio flore maculato. *Tournef. cor.* 9. *Schreb. act. nat. cur.* 3. 480. β.
Stem prostrate, leaves lanceolate-oval crenate, stem branched, peduncles solitary one-flowered very long.
33. Lobelia repanda.
L. angulata. *Forst. flor. austral. n.* 309.
Stem prostrate quite simple, leaves roundish repand-toothed, peduncles axillary solitary one-flowered.
34. Lobelia Erinus. *Small spreading Lobelia.*
Lin. spec. 1321. *fil.* 802. *Reich.* 3. 959. *mant.* 483.]
Rapuntium Erinus. *Mill. dict. n.* 8.
Campanula minor africana, &c. *Herm. lugd.* 110. *t.* 111.
Trachelium minus afric. flor. violaceis per caulem sparsis. *Tournef. inſt.* 131.
Stem patulous, leaves lanceolate somewhat toothed, peduncles very long.

35. Lobelia erinoides. *Trailing Lobelia.*
Lin. ſpec. 1322. *ſyſt.* 802. *Reich.* 3. 960. *mant.* 291. *hort. cliff.* 426.
Rapuntium erinoides. *Mill. dict. n.* 9.
Campanula minor africana, erini facie, caul. procumbentibus. *Herm. lugdb.* 108. *t.* 100.
Stems proſtrate filiform, leaves petioled oblong toothed.

[36. Lobelia anceps.
Lin. ſyſt. 800. *ſuppl.* 395.
Leaves lanceolate decurrent.

37. Lobelia pubeſcens. *Downy-leaved Lobelia.*
Ait. hort. kew. 3. 498.
Stems angular proſtrate, leaves lanceolate toothed roughhaired, peduncles axillary one-flowered.

38. Lobelia zeylanica.
Lin. ſpec. 1322. *Reich.* 3. 960. *Seba. theſ.* 1. 37. *t.* 22. *f.* 12? (Campanula.)
β. L. hirta. *Lin. ſpec.* 1. 932.
Stems procumbent, leaves ovate ſerrate acute, lower obtuſe, peduncles one-flowered, capſules ſubvilloſe.

39. Lobelia lutea. *Yellow Lobelia.*
Lin. ſpec. 1322. *ſyſt.* 802. *Reich.* 3. 960.
Rapuntium fol. oblongis dentatis, ſtipe luteo ſpicato, flagellis procumbentibus. *Burm. afr.* 101. *t.* 39. *f.* 1.
Rapunculus afr. ramoſus, &c. *Herm. afr.* 18. *Raii ſuppl.* 248.
Stems procumbent, leaves lanceolate ſerrate, flowers ſeſſile ſubſpiked.

40. Lobelia hirſuta.
Lin. ſyſt. 802. *n.* 41. *ſuppl.* 395.
Shrubby, hirſute, proſtrate, leaves ovate-toothed, peduncles lateral very long two or three-flowered.

41. Lobelia coronopifolia.
Lin. ſpec. 1322. *ſyſt.* 802. *Reich.* 3. 961. *mant.* 483. *Burm. afr. t.* 38. *f.* 1. *Herm. afr.* 18. *Breyn. cent. t.* 88. (Rapuntium.)
Leaves lanceolate toothed, peduncles very long.
**** *With a proſtrate ſtem and entire leaves.*

42. Lobelia depreſſa.
Lin. ſyſt. 802. *ſuppl.* 395.
Depreſſed, leaves lanceolate, ſtem fleſhy.

DESCRIPTIONS, *&c.*

Theſe are moſtly herbaceous plants, ſome annual but more perennial, and ſome of the ſpecies ſuffruticoſe, or woody at the bottom of the ſtems, which in ſome are proſtrate, in others upright. Leaves alternate. Flowers either ſolitary and axillary with two ſmall bractes, or in looſe terminating ſpikes with three little bractes. L. lactefcens and minuta (n 25. 30.) have no bractes. L. longiflora has a very long tubular flower, with a bifid ſtigma [a]. L. Phyteuma, bulboſa, volubilis and lutea have the anthers diſtinct. The predominant colour in the corollas is blue.

1. This is a ſmall annual plant, ſcarcely a hand in height, herbaceous, upright, ſimple, ſmooth and even. Leaves alternate, ſeſſile, remote, acute, even, paculous. Peduncles axillary, one-flowered, naked, even, upright, twice as long as the leaves. Capſule inferior, turbinate. Native of the Cape of Good Hope [b].

L. debilis of the ſupplement is doubtleſs the ſame with this. It is there ſaid to be a very little plant, ſo much reſembling L. depreſſa (n. 41.) as to be perhaps only a variety of it; and to have been obſerved at the Cape by Thunberg.

2. Branch or ſtem ſomewhat woody, angular, tomentoſe-mealy, eſpecially towards the top, leafy. Leaves ſcattered, oval-oblong, netted-veined, very thickly tomentoſe underneath, with the veins thick and ſtanding out. Leaves quite entire at the edge, but being rolled back, Linnæus miſtook the interſtices between the veins for notches, and ſet them down as crenate in the ſpecific character. Petiole channelled, mealy. Flowers axillary, ſolitary, peduncled. Calyx mealy, hemiſpherical, ten-angled, five-toothed; teeth linear, upright, preſſed cloſe to the corolla. Corolla curved in, bellying a little in the middle, five-cornered, the ſegments of the border unequal, linear, mealy on the outſide. Stamens a little longer than the corolla. Anthers united into an oblique incurved ſmooth cylinder, bearded at top below the ſtigma. Style a little longer than the ſtamens. Capſule four-valved; valves bowed back, ſmooth. Native of New Granada, where it was found by Mutis. Linneus ſuſpected a great affinity between this plant and Columnea ſcandens [c]; and has given the differences in the ſupplement.

3. This is an annual plant, about a hand in height, upright, hiſpid and leafy below, divided at top into a longer panicle. Leaves blunt, pubeſcent underneath. Panicle ſmooth and even, with the leaves of the ramifications awl-ſhaped. The lower peduncles are longer. Found at the Cape of Good Hope by Thunberg [d]. Both in the Syſtema and Supplementum it is by miſtake named bellidiflora.

4. This is a ſhrubby, upright, branched plant, the branches ſurrounded with abundance of narrow ſharp leaves an inch in length. Flowers many, ſmall, blue, at the tops of the twigs, among the leaves [e]. The calycine leaflets have a gland at their baſe.

Native of the Cape of Good Hope [f]. Introduced in 1786, by Mr. Francis Maſſon [g].

5. The root conſiſts of numerous capillary whitiſh fibres. Leaves growing at the bottom of the water in a circle, numerous, about two inches long, reflected into an elegant curve at the end, ſmooth, conſiſting of two hollow parallel tubes. Stem erect, round, hollow, ſmooth, from twelve to eighteen inches high, naked except three or four oval ſeſſile ſcales about a quarter of an inch long. Flowers about nine in a looſe ſpike, above the water, from half an inch to an inch aſunder, on ſlender peduncles about half an inch long, each ariſing from a bracteal ſcale ſimilar to thoſe on the ſtems. Calyx divided into five linear or awl-ſhaped ſegments, a line and half or two lines long. Corolla white faintly tinged with blue: tube narrow: upper lip of two narrow lanceolate ſegments, erect; lower of three oval reflected ſegments, the middle one larger and longer. Capſule elliptical, ſurrounded with the calyx, forming a ring a little beneath the ſummit, and terminated by the ſtyle with its club-ſhaped hairy ſtigma [h]. Linnæus remarks that the whole plant, even the leaves beneath the water, are milky: and that the flowering-ſtalk is of a length proportional to the depth of the water in which the plant grows.

Native of the north of Europe; in lakes of mountainous countries. With us in Wales, Weſtmoreland, Cumberland, Scotland. It flowers in july and auguſt.

It was ſent to Chuſius by Dortmann an apothecary at Groeningen, hence he named it Gladiolus ſtagnalis Dortmanni, and Rudbeck called it Dortmanna.

6. The root and herb of this ſpecies are a violent poiſon.

Native of Peru [i].

7. A foot high, with a round ſtem, ſcarcely branched. Leaves linear-lanceolate below, linear above, quite entire, bluntiſh, naked, ſeſſile. Flowers in a looſe raceme, ſolitary on alternate peduncles, from the axils of the upper leaves, furniſhed with a leaflet. Corollas blue. It is an annual plant, and a native of Canada, where it was found by Kalm [k].

8. Native of the Cape of Good Hope.

9. Leaves very large, repand, petioled. Flowers many in corymbs, interſperſed with rounded hiſpid bractes. Pedicels elongated, hiſpid. Calyx hiſpid, with ovate, blunt ſegments. Corolla club-ſhaped, ferruginous, before flowering curved, afterwards ſtraight. Stamens red hiſpid.

Native of South America, where it was found by Mutis.

10. This differs from the preceding in the ferruginous nap with which the ſtems, petioles, nerves of the leaves, peduncles, calyx and corolla are covered; in having the leaves much ſmaller, acute and ſerrate; the peduncles more elongated, almoſt the length of the leaves; the flowers more curved; and the genitals elongated far beyond the corolla, not included in it.

Native of America, found by Mutis.

The hairineſs in this and L. Columnea is ſingular, parts of the herb and flower being quite concealed by it [l].

[a] Jaſeq. [b] Linn. mant.
[c] Smith. [d] Linn. ſuppl. [e] Burm. ſuppl. [f] Linn.
[g] Hort. kew. [h] Woodw. Mſ. [i] Linn. from Feuillée.
[k] Linn. ſpec. [l] Linn. ſuppl.

11. Stem herbaceous, filiform, annual, procumbent, creeping; with upright branches, five inches in length. Leaves alternate, ſmooth, ſeſſile. Flowers peduncled, ſolitary, terminating. Calycine ſegments ſhort, awl-ſhaped, interrupted, patulous. Corolla pale blue. Stigma bifid, revolute. Capſule two-celled. Seeds roundiſh.—It differs both from L. zeylanica and erinoides in having the leaves quite entire and the peduncles terminating; though it is like them in habit.

Native of China near Canton [a].

12. Native of Cayenne. Diſtinguiſhed and named from the great length of the ſtamens. Linneus ſays that he ſaw the plant in Royen's collection, and we are no otherwiſe acquainted with it.

13. Native of the Cape of Good Hope.

14. This reſembles L. coronopifolia (n. 40.) very much [b]. The filaments are connate at the baſe; the anthers diſtinct; and the petals equal. Hence Bergius ſeparated it from Lobelia under the name of *Cyphia* [c].

15. This is an annual plant. Stems herbaceous, a foot high. Leaves alternate, ſeſſile, narrow-lanceolate, and as it were glued together at the baſe: the upper ones leſs remote. Raceme peduncled, upright; with the peduncle obſoletely three-cornered in moſt. Flowers blue.

Native of the Cape of Good Hope [d]. Introduced in 1774, by Mr. Francis Maſſon. It flowers from may to ſeptember [e].

16. This is an annual, herbaceous elegant plant, ſeldom above fourteen or ſixteen inches in height, the whole of it rough-haired. Stem almoſt upright, very much branched from all the axils. Leaves alternate, ſeſſile, ſubpinnatifid-toothed, ſharpiſh, ſmooth, half a foot long. Peduncles one-flowered, axillary, ſolitary, villoſe. Bracte awl-ſhaped. Calyx truncated, with five diſtant, toothletted teeth. Corolla handſome, upright, white, four inches long: tube the length of the leaf, filiform; border equal. Filaments joined to the tube of the corolla almoſt to the top. Anther ten-grooved. Germ turbinate, five-cornered. Stigma fleſhy, two-lipped. Capſule green, when it burſts at the ripening of the ſeeds. The whole plant is very poiſonous. Taken internally it brings on an invincible purging. If the plant be handled, and the hand be unawares applied to the eyes or lips, it brings on an inflammation. Horſes are reported to burſt with eating it; whence in the Spaniſh Weſt Indies it has the name of *Reventa-cavallos*. It is well known in Domingo under the name of *Quedet* [f]. It is alſo native of Jamaica, Cuba, Martinico, by rivulets, and in moiſt, cool, ſhady places.—Cultivated in 1739, by Mr. Miller. It flowers from june to auguſt [g].

17. This is very diſtinct from L. hirſuta (n. 39.)

Native of the Cape of Good Hope, where it was found by Thunberg.

18. This ſpecies is ſingular in having the branches flowering almoſt from the baſe in all the axils of the leaves, and the flowers all nodding to one ſide. Found at the Cape by Thunberg [h].

19. Root perennial. Stem herbaceous, three or four feet high, ſimple or only ſimply divided at top, angular, thick, ſmooth, red, milky. Leaves ſubſeſſile, or on very ſhort petioles, ovate-lanceolate, a foot long, alternate, nerved, ſmooth on both ſides: toothleſs at the baſe of the leaf linear. Petioles very ſhort, decurrent at the ſides, whence the ſtem is winged, continued under the leaf to the tip, thick, red. Raceme almoſt upright; curved. Flowers numerous, heaped, blood-red, very large, pubeſcent, on round peduncles an inch in length, with linear bractes at the baſe of them. Calyx ſuperior, with five long lanceolate reflex ſerrate teeth. Corolla curved inwards. The anther has five blue grooves. Germ inferior, angular, ſurrounded by the calyx. Style thick. Stigma incloſed within the anther, capitate-compreſſed, white-villoſe. Capſule angular, two-celled, crowned by the calyx [i].

[a] Loureiro. [b] Linn. ſuppl. [c] Linn. mant. & Berg. cap. [d] Linn. mant. [e] Hort. kew. [f] Jacquin, Linn. mant. Browne. [g] Hort kew. [h] Linn. ſuppl. [i] Swartz.

Native of Jamaica, in the cooler mountains, where it ſhoots frequently to the height of five or ſix feet [a]. Introduced in 1787, by Mr. Alexander Anderſon [b].

20. Found by Thunberg at the Cape of Good Hope. In the ſupplement, it is ſaid to be ſingular that it ſeldom has leaves or flowers.

21. This ſeldom riſes above three feet in height. It grows generally in the lower ſhady hills of Jamaica [c]. —Sloane ſays it has a ſtalk as big as one's finger, green and ſmooth. Leaves many, without order, ten inches long, and two broad in the middle, dark green. Flowers pale yellow. Seeds very ſmall, brown.

22. Native of the iſland of Guadeloupe [d].]

23. The root is compoſed of many white fleſhy fibres. The lower leaves are oblong, and of a dark purpliſh colour on their upper ſide. The ſtalks are erect, about a foot and half high, with leaves about three inches long, and an inch and half broad in the middle, on very ſhort petioles and placed alternately. The ſtalk is terminated by a ſpike (raceme) of flowers, of an exceeding beautiful ſcarlet colour. They have a pretty long tube, which is a little incurved, and at the top they are cut longitudinally into five ſegments; two upper, which are the ſmalleſt, are greatly reflexed; the three under, which form the lower lip, are longer, and ſpread open. They appear at the end of july and in auguſt, when they make a fine appearance for a month or more, and when the autumn proves favourable, they will produce good ſeeds here. It grows naturally by the ſide of rivers and ditches in great part of North America. [Linneus and the Kew Catalogue aſſign it to Virginia only. Parkinſon, who mentions it as cheriſhed in our gardens (in 1629), ſays, "that "it groweth near the rivet of Canada, where the "French plantation in America is ſeated."]

24. Root perennial. Stem ſimple, from a foot to two feet in height, and upwards, ſtrong, ſimple, ſmooth, with angles formed by the decurrent edges of the leaves having ſtiffiſh hairs on them. Leaves alternate, ſeſſile, ſomewhat rugged. Flowers axillary, ſolitary, numerous, large, on ſhort peduncles, forming altogether a long ſpike. Calyx ſerrate-toothed; the ſegments lanceolate, covering the germ, as in Campanula Medium, &c. Corolla blue, varying in ſhades from a rich violet to pale blue, angular: the ſegments almoſt equal, ciliated along the keel, and having two bumps on the palate [e]. Capſule united with the calyx to the middle, ſubglobular, mucronate, marked with a ſlight groove on both ſides, two-celled, two-valved: partition contrary to the valves. Receptacle ſpongy, excavated, conical, convex on one ſide, faſtened on the other to the middle of the partition on both ſides. Seeds numerous, ſmall, ovate-oblong, wrinkled, of a reddiſh yellow colour [f].

Native of Virginia. Cultivated here in 1665, as appears from Rea's Flora [g]. It flowers from auguſt to octobers; or according to Mr. Miller] earlier than the preceding, and the ſeeds frequently ripen in England.

[Every part of the plant abounds with a milky juice, and has a rank ſmell. The root, which is the part directed for medicinal uſe, in taſte reſembles tobacco, and is apt to excite vomiting. It derives the trivial name from its efficacy in the cure of ſyphilis, as experienced by the North American Indians, with whom it was a ſecret. Sir William Johnſon purchaſed the ſecret, and it has ſince been publiſhed by Kalm, Bartram, &c.

The method of employing this medicine is as follows. A decoction is made of a handful of the roots in three meaſures of water. Of this, half a meaſure is taken in the morning faſting, and repeated in the evening: the doſe is gradually increaſed till its purgative effects become too violent, when it is to be intermitted for a day or two, and then renewed till a perfect cure is effected. During the uſe of this medicine a proper regimen is enjoined, and the ulcers are alſo to be frequently waſhed with the decoction, or if deep and foul, to be ſprinkled with the powder of the inner

[a] Browne. [b] Hort. kew. [c] Browne. [d] Swartz. [e] Linn. mant. [f] Gertner. [g] p. 140. Hort. kew.

bark

bark of New-Jersey Tea-tree (Ceanothus americanus). Although the plant is said to cure the disease in a very short time, yet its virtues have not been confirmed by any instances of European practice [a].

25. This species is a native of the island of St. Helena. It is probably the same with L. arborea of Forster, found in the Society isles.

26. Leaves alternate, subpetioled, acute, very finely serrate. Peduncles the length of the leaves, with two linear bractes towards the base. Calyx gibbous, with linear-lanceolate segments. Corolla the length of the leaf, five-cornered, impressed in five rows above the base. Capsule ventricose [b].

L. levigata, which is the same with this, is thus described in the Supplement. Stem herbaceous, smooth, round. Leaves alternate, petioled, elliptic or ovate-lanceolate, acute, smooth, serrate. Peduncles lateral, axillary, round, with two awl-shaped bractes at the base. Calyx superior, with five, awl-shaped, patulous teeth. Corolla oblong, tubular, incurved, red, with a cavity at the base within and below the stamens: border short, five-cleft: the two upper segments acute, the three lower shorter. Stamens longer than the corolla. Capsule globular, crowned with the calyx, two-celled. Seeds minute.

Native of the West Indies. Introduced in 1786, by Mr. Alexander Anderson. It flowers in april [c].

27. This is a biennial plant in England. Stems channelled, hairy, two feet high. Leaves about two inches long, and one broad in the middle, sessile, light green. Flowers small, on long, slender, axillary peduncles, forming a loose spike. Corolla light blue. It flowers in july, and the seeds ripen in september.

[Native of Virginia and Canada. Cultivated by Mr. Miller in 1759 [d].]

28. This is an annual plant. The stem rises about a foot high, and then divides into four or five smaller, which grow erect. The lower part has heart-shaped smooth leaves, an inch and half long, and three quarters of an inch broad at the base, lessening to a point at the end, on short petioles. The upper slender stems are thinly furnished with small purplish flowers to the top.

[The peduncles are long and somewhat angular [e]. It is a native of America. Linnæus says of Virginia and Canada: but Mr. Miller gives it to Jamaica, whence Dr. Houstoun sent him the seeds. He cultivated it in 1739 [f].]

29. This is an annual plant. Stem nearly upright, somewhat curved, from twelve to eighteen inches high, simple, smooth, angular; the angles rough. Lower leaves elliptical, blunt, two inches long, from six to eight lines broad, irregularly and slightly toothed, petioled: the next above sessile; the upper lanceolate, half embracing, closely pressed to the stem at the base, frequently having a bundle of small leaves in the axils, appearing like the rudiments of branches; all smooth. Flowers in a long spike, sometimes more than twenty; the lower ones distant, the upper rather crowded, each on a short peduncle, from the axil of a bracteal leaf; of which the lower ones are lanceolate, the upper awl-shaped. Calyx deeply divided into five awl-shaped erect segments, three lines long. Corolla about half an inch long, rough, bright blue; tube narrow; upper lip with two awl-shaped erect segments; lower with three lanceolate reflected, the middle one longest. Stamens longer than the tube. Anthers forming a cylinder, deep blue with white hairy margins. Style slender. Stigma club-shaped, hairy, inclosed within the cylinder of anthers [g].

The whole plant is milky, of a warm taste, and if chewed, especially the root, excites a pungent sense of burning in the tongue [h].

Native of France, Spain and England. On Shute common between Axminster and Honiton, Mr. Newbery. It flowers in july and august.

30. This is a minute annual plant, like Cineraria and Bellium, only about an inch high. Root filiform, creeping by runners. Leaves radical, obovate, obtuse, tender, scarcely crenate, on long petioles. Scape setaceous, two inches high, upright, one-flowered. Calyx oblong, lanceolate, almost upright. Corolla funnel-form. Capsule inferior, oblong. It is allied to L. Laurentia, but is more tender, without any bractes on the scape. It differs from L. Erinus in having no stem but the scape or naked flowering stalk [i].

Native of the Cape of Good Hope. Introduced in 1772, by Mons. Richard. It flowers from june to september [k].

31. Stem filiform, contrary, herbaceous. Leaves alternate, remote, even, linear, with obsolete subcalloose toothlets; at top frequently trifid, the lateral segments very short. Flowers lateral, solitary, pedunculed. Anthers distinct.

Native of the Cape of Good Hope, where it was found both by Sparrmann and Thunberg [l].

32. This is seldom more than three or four inches high. The leaves resemble those of the common Daisy in shape and size. The flowers come out singly on very long slender peduncles [a]: with a setaceous bractle on the middle of each [b].

Native of Italy, about Pisa. In the island of Elba, Corsica and Sicily.

Micheli made this a distinct genus under the name of Laurentia, in compliment to Marcantonio Laurenti, M.D. and Professor at Bologna.

33. Native of New Zealand [c].

34. This is an annual plant. Stem a span high, filiform, branched and spreading out at bottom. Root-leaves oval; stem-leaves lanceolate; all smooth. Peduncles axillary, naked, three times as long as the leaves, slender, one-flowered [d]. Flowers small and blue, appearing in july; succeeded by small roundish seed-vessels, filled with small seeds which ripen in september.

Native of the Cape of Good Hope. [Cultivated by Mr. Miller in 1759. Said in the Kew catalogue to have been introduced by Mr. Masson in 1774.

35. This also is an annual plant, with many slender, trailing, herbaceous, simple stems, half a foot long. Leaves alternate, subpetioled, remote, bluntish, with two or three obsolete lateral teeth. Peduncles lateral, solitary, shorter than the leaf. Calycine leaflets lanceolate. Corolla funnel-form-lanceolate, angular, equal, blue, with patulous segments. Filaments united into a five-streaked, club-shaped tube. Anthers with distant tips. Germ inferior. Stigma two-lipped hirsute. Capsule obovate, two-celled.

Native of the Cape of Good Hope [e]. Cultivated by Mr. Miller in 1759. Said in the Kew Catalogue to have been introduced by Mr. Masson in 1786.

36. Root annual. Root-leaves petioled, obovate. Stem quite simple, a span high, even. Stem-leaves alternate, even, scarcely toothed, remote. Flowers from the upper axils of the leaves, pedunculed, solitary, small, blue. It may perhaps be a variety of the preceding [f].

Native of the East Indies.

37. Native of the Cape of Good Hope, where it was found by Mr. W. Paterson. Introduced in 1780, by the Countess of Strathmore. It flowers from may to august [g].

38. This is a small plant, that has the appearance of Veronica Chamædrys. Stem creeping. Leaves alternate, petioled, almost smooth: lower obtuse, crenate; upper acute, sharply serrate. Peduncles axillary, subsolitary, longer than the leaf, pubescent [h].

Stem round. Leaves cordate, smooth, petioled. Flowers blue.

Native of China, in watery and shady places [i].

39. Stem quite simple, upright, striated. Leaves alternate, sessile, upright, with a few acuminate upright serratures. Flowers terminating, yellow, larger than the leaf. Filaments connate. Anthers erect, striated, distinct, bearded at the tip. Style also bearded at the tip. Stigma oblong, bifid, revolute [k].

[a] Woodville. [b] Linn. spec. [c] Hort. kew. [d] Ibid. [e] Linn. [f] Hort. kew. [g] Woodward, MS. [h] Willdr. from Bocc. & Mor.

[a] Linn. mant. [b] Hort. kew. [c] Linn. suppl. [d] Ray. [e] Linn. syst. [f] Pontey. [g] Linn. mant. [h] Ibid. [i] Linn. suppl. [k] Hort. kew. [l] Linn. spec. [a] Osbeck voy. Engl. edit. 1. 391. [b] Linn. mant.

Native of the Cape of Good Hope. Introduced in 1774, by Mr. Francis Maſſon. It flowers in june and july [1].

40. Found at the Cape of Good Hope by Thunberg [2].

41. Stem procumbent, hairy. Leaves linear, with three teeth on each ſide. Peduncles longer than the whole plant [3]. Native of the Cape of Good Hope. Introduced in 1787 by Mr. Francis Maſſon. It flowers in july and auguſt [4].

42. Stem herbaceous, a hand long, varicoſe, proſtrate on every ſide. Peduncles alternate, the length of the leaves, ſolitary. Leaves not at all decurrent. Flowers dark-purple. Native of the Cape of Good Hope [5].

Thunberg has ſeveral other ſpecies, and has enumerated thirty Lobelias natives of the Cape of Good Hope, in his Prodromus Plantarum Capenſium, p. 39, 40.

Miller has only one ſpecies of Lobelia, which is the Scævola of Linnæus. His Rapuntiums belong to this genus. He enumerated ten in the ſeventh edition of his Dictionary. In the eighth he omitted the ſecond ſpecies, which is only a variety of the firſt, but preſerved the ten deſcriptions, ſo that the numbers do not correſpond, but the deſcription of the third ſort belongs to n. 2. and ſo of the reſt. This error is rectified in the quarto edition of 1771.

The following ſynopſis, though incomplete, may aſſiſt in diſcriminating the ſpecies.

Herbaceous.
- Annual. 1. 3. 7. 27. 28. 29. 30. 32. 34. 35. 36. 39. 40.
- Perennial. 5. 16. 19. 20. 23. 24. 31. 37. 38. 41. 42.

Shrubby. 2. 4. 21. 22. 25. 26. 40.

Stem
- Upright. 1 to 7. 13 to 31.
- Proſtrate. 11. 32 to 41.

Leaves
- Entire. 1 to 12. 41.
- Cut or Gaſhed. 13 to 40.

- Roundiſh. 33.
- Lanceolate. 6. 10. 11. 16. 18. 21. 29. 34. 36. 37. 39. 41. 42.
- Lanceolate-linear. 7.
- Lanceolate-oval. 32.
- Ovate. 12. 20. 27. 30. 38. 40.
- Ovate-lanceolate. 19. 22. 24.
- Ovate-oblong. 13.
- Elliptic-lanceolate. 25.
- Obovate. 3.
- Oblong. 2. 9. 26. 35.
- Oblong-lanceolate. 23.
- Linear. 1. 4. 5. 8. 17. 31.
- Cordate. 28.
- Pedate. 14.

Corolla
- Blue. 4. 7. 24. 29. 32. 34. 35. 36. 38. 41.
- Pale Blue. 11. 27.
- Bluiſh White. 5.
- White. 16.
- Purple. 28. 42.
- Red. 26. Blood-red. 19. Scarlet. 23.
- Yellow. 39. Pale Yellow. 21.

Anthers
- Connate. 1 to 12. 15 to 30. 32 to 42.
- Diſtinct. 13. 14. 31. *Cyphia Bergii.*

PROPAGATION AND CULTURE.

16. The ſeeds of this ſort ſhould be ſown after it is ripe, in pots filled with rich earth, and plunged into the tan-bed in the ſtove, obſerving to refreſh the earth frequently with water. In the ſpring theſe pots may be removed, and plunged into a hot-bed, which will ſoon bring up the plants: when theſe are fit to remove, they ſhould be each tranſplanted into a ſeparate ſmall pot filled with rich earth, and plunged into a freſh hot-bed, ſhading them from the ſun till they have taken new root; then they may be treated in the ſame way as other tender plants from the ſame country, giving them a large ſhare of air in warm weather, and frequently refreſhing them with water. In autumn the plants muſt be plunged into the tan-bed of the ſtove, where they will flower the following ſummer, and produce ripe ſeeds, ſoon after which the plants will decay. If the ſeeds of this plant are brought from the Weſt-Indies, they ſhould be ſown as ſoon as they arrive, in pots filled with rich earth; and if it happens in the winter, the pots ſhould be plunged into the tan-bed in the ſtove; but if it is in the ſpring or ſummer, they may be plunged into a hot-bed in the common frames. Theſe ſeeds when ſown in the ſpring, ſeldom grow the ſame year, therefore the following autumn the pots ſhould be removed into the ſtove, and managed according to the above directions.

23, 24. Theſe are propagated by ſeeds, which, when they ripen in England, ſhould be ſown in autumn in pots filled with rich kitchen-garden earth, and placed under a common hot-bed frame, or, if the ſeeds come from the country where the plants grow naturally, they ſhould be ſown in the ſame way as ſoon as they arrive, for if they are kept out of the ground till ſpring, they will lie a year in the ground before they vegetate. The pots in which theſe ſeeds are ſown ſhould be expoſed to the open air at all times when the weather is mild, but they muſt be ſcreened from the froſt, and the very hard rain in winter. In the ſpring the plants will appear, when they ſhould have as much free air as poſſible in mild weather, and if the ſpring proves dry, they muſt be frequently refreſhed with water. As ſoon as they are fit to remove, they ſhould be each planted in a ſeparate ſmall pot filled with the ſame rich earth, and placed in the ſhade till they have taken new root; then they may be placed where they may have the morning ſun, in which ſituation they may remain till autumn. During the ſummer, they muſt be duly watered in dry weather, and when the roots have filled the pots, they ſhould be removed into larger. In autumn they muſt be placed under a common frame to ſcreen them from hard froſt, but they ſhould enjoy the open air at all times when the weather is mild. The ſpring following they ſhould be new potted, and placed where they may have the morning ſun, always obſerving to water them duly in dry weather, which will cauſe their ſtalks to be ſtronger, and produce larger ſpikes of flowers in auguſt. Theſe will continue long in beauty, if they are not too much expoſed to the ſun, and, if the autumn proves warm, the ſeeds will ripen well in England. The roots will ſometimes laſt two or three years, and produce offsets for increaſe, but they will not flower ſo ſtrong as the ſeedling plants, therefore an annual ſupply of them ſhould be raiſed. There are many who propagate them by cutting their ſtalks into proper lengths, and plant them in pots filled with good earth, or into an eaſt border, covering them cloſe with glaſſes. Theſe frequently take root, but they are not ſo good as the ſeedlings.

They will live in the full ground if they are protected from hard froſt in winter, and they will flower ſtronger than thoſe in pots.

27. Sow the ſeeds in autumn in pots filled with rich earth, and treat the plants in the ſame way as the twenty-third ſort.

28. When the ſeeds are permitted to ſcatter on pots which ſtand near them, and theſe are ſheltered from froſt, the plants will come up plentifully the following ſpring; or if they be ſown in pots in autumn, and ſheltered in winter, the plants will riſe the following ſpring. Tranſplant theſe into ſeparate ſmall pots, and place them under a frame.

29. Sow the ſeeds in autumn in a warm border, or in pots filled with loamy earth, and placed under a common frame in winter. When they come up in the ſpring, tranſplant them into a border of ſoft loamy earth, or into other pots, ſhading them till they have

[1] Hort. kew. [2] Linn. ſuppl. [3] Linn. mant. [4] Hort. kew. [5] Linn. ſuppl.

taken new root, and duly watering them in dry weather, which will cauſe them to flower ſtrong, and produce good ſeeds annually.

34. 35. If the ſeeds of theſe ſorts be ſown in autumn, they will ſucceed much better than when they are ſown in ſpring: theſe may be ſown in pots, and ſheltered under a common hot-bed frame in winter, expoſing them to the open air at all times in mild weather, but ſereening them from the froſt; and in the ſpring, the pots ſhould be plunged into a moderate hot-bed, which will ſoon bring up the plants; when theſe are fit to remove, they ſhould be each planted in a ſeparate ſmall pot filled with rich earth, and plunged into a moderate hot-bed again, ſhading them from the ſun till they have taken new root; when they muſt have a large ſhare of air at all times when the weather is mild, and as the plants grow ſtrong, they ſhould be gradually hardened to bear the open air, into which they ſhould be removed in June, placing them in a ſheltered ſituation, where they will flower in July, and if the ſeaſon prove favourable, the ſeeds will ripen in September; but if the ſeaſon ſhould prove cold, it will be proper to remove one or two plants into a glaſs caſe, to obtain good ſeeds.

[N. 5. 7. 23. 24. 27. 29. 32. being natives of Europe or North America, are hardy plants, and directions for their treatment are given under 23. 27. and 29.

N. 1. 3. 4. 8. 13. 14. 15. 17. 18. 20. 30. 31. 34. 35. 37. 39. 40. 41. 42. are natives of the Cape of Good Hope. Theſe, therefore, muſt be preſerved in the dry ſtove, and treated as directed for N. 34.

The reſt being natives of the Weſt Indies, and other hot climates, muſt be preſerved in the bark ſtove, and treated as directed above for N. 16.

Lobelia Cheiranthus. See *Manulea.*

——— fruteſcens. See *Scævola.*

Loblolly Bay. See *Gordonia.*

Lobus aromaticus. See *Epidendrum.*

——— echinatus. See *Gallandina.*

——— machæroides. See *Dolichos.*

LOCKER-GOULANS. See *Trollius.*

LOCUSTA. See *Valeriana.*

LOCUST TREE. See *Ceratonia, Gleditſia,* and *Hymenæa.*

LOEFLINGIA. (*So named by Linnæus from Peter Loefling, one of his diſciples, who travelled in Spain and America, and died on his travels in* 1756.)

Lin. gen. n. 52. *Reich. n.* 58. *Schreb. n.* 71. *Gærtn. t.* 129. *Juſſ.* 299.

Claſſ. 3. 1. Triandria Monogynia.

Nat. order of *Caryophylleæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, upright: *leaflets* lanceolate, marked on each ſide at the baſe with a toothlet, ſharp-pointed, permanent.

COR. *Petals* five, very ſmall, oblong-ovate, converging into a globe, round.

STAM. *Filaments* three; length of the corolla. *Anthers* roundiſh, twin.

GERM ſuperior, ovate, three-cornered. *Style* filiform, rather wider above. *Stigma* a little obtuſe.

PER. *Capſule* ovate, ſomewhat three-cornered, one-celled, three-valved.

SEEDS a great many, ovate-oblong.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* five-petalled, very ſmall. *Capſ.* one-celled, three-valved.

SPECIES.

1. Loeſlingia hiſpanica.

Lin. ſpec. 50. *Syſt.* 83. *Reich.* 1. 95. *Act. holm.* 1758. 16. *t.* 1. *f.* 1. *Loeſ. it.* 113. *t.* 1. *f.* 2. *Gærtn. fruct.* 2. 222. *Cavan. hiſp.* 64. *n.* 103. *t.* 94.

DESCRIPTION, *&c.*

Root annual. Leaves oppoſite, mucronate. Branches proſtrate, alternate, pubeſcent, clammy. It has the appearance of Scleranthus[a]. Capſule ſmall, narrower above. Receptacle columnar, looſe, pencil-branched above, almoſt the length of the capſule. Seeds ſixteen to twenty, very ſmall, ovate produced into a beak, with a very ſlight groove along the back, hollow-dotted, ſtraw-coloured or rufeſcent[b]. Native of Spain, on open hills.—Introduced in 1770, by Monſ. Richard. It flowers in June[c].

Cavanilles ſays, that the ſtems are a ſpan high, ſubdichotomous. Leaves very ſmall, with ſtipulaceous appendages, toothletted below. Flowers ſolitary, axillary, and in the diviſions of the branches. Calycine leaflets mucronate, wider at the baſe, concave; the three outer two-awned below, the two inner almoſt always awnleſs. Corolla white; petals obovate, emarginate. Filaments ſhorter than the corolla. Anthers ovate, twin. Germ ovate-acuminate. Stigmas three. Capſule ovate-acute.

Loeſlingia indica. See *Pharnaceum depreſſum.*

LOESELIA. (*So named by Linnæus from John Loeſel, author of* Flora Pruſſica, 1654; *publiſhed by Gottſched, with additions in* 1703.)

Lin. gen. n. 767. *Reich. n.* 826. *Schreb. n.* 1029. *Gærtn. t.* 62. *Juſſ.* 135. Royenia. *Houſt. in Phil. tranſ.*

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Convolvuli*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, four-cleft, ſharp, ſhort, permanent.

COR. one-petalled, unequal. *Tube* the length of the calyx. *Border* five-parted: all the *diviſions* deflected to the lower ſide, ovate-lanceolate, equal.

STAM. *Filaments* four, length of the corolla; of which *two* are ſhorter; all oppoſite the diviſions of the petal, and reflected in a contrary ſituation to the corolla. *Anthers* ſimple.

PIST. *Germ* ovate. *Style* ſimple, ſituated as the ſtamens. *Stigma* thickiſh.

PER. *Capſule* ovate, three-celled.

SEEDS ſolitary or two, obſcurely cornered.

OBS. *The ſtamens are five, one of which is ſhorter than the reſt, and faſtened to the neareſt ſegment of the corolla; the reſt are inſerted into the tube. G.*

ESSENTIAL CHARACTER.

Cal. four-cleft (five-toothed, *G.*) *Cor.* with all the ſegments directed one way (deeply five-cleft, with oblong ciliated ſegments. *G.*) *Stam.* oppoſite to the petal (five, unequal. *G.*) *Capſ.* three-celled, (gaping at top. *G.*)

SPECIES.

1. Loeſelia ciliata.

Lin. ſpec. 875. *Syſt.* 567. *Reich.* 3. 168. *Roy. lugdb.* 299. *Gærtn. fruct.* 1. 295.

Royena ſol. acute dentatis & veluti ſpinoſis, flore luteo. *Houſt. Mſs.*

DESCRIPTION, *&c.*

Stem upright, obſoletely quadrangular, brachiate. Leaves oppoſite, lanceolate-ovate, acutely ſerrate. Branches oppoſite: laſt branchlets imbricate, with ſubcordate, embracing, ſerrate, ciliate leaflets; the lower ones ſmaller, the upper ones more crowded, and gradually larger, till a branchlet terminates in a ſtoriferous head[a]. Capſule ſmall, clothed with the calyx, obovate or turbinate, thin, whitiſh, opening three ways at top. In each cell one or two ſeeds, faſtened to the inner angle, oblong, convex on one ſide, obſoletely angular on the other, of a pale rufeſcent colour, with abrupt tranſverſe lines of a deeper colour diſpoſed longitudinally in rows; covered with a ſingle membranaceous ſkin that diſſolves in water into a pellucid mucilage[b].

Found at La Vera Cruz in South America by Houſtoun.

LOGONDIUM. See *Vitex.*

LOGWOOD. See *Hæmatoxylum.*

LOLIUM. (*of Pliny, Varro, and other Latin writers; q.* λολεω ολλυμι, *fugetem perdere, or* λολιω ολλυμι, *ſeges novia. A bad weed among corn; hence called* infelix lolium *by Virgil.*)

Lin. gen. n. 95. *Reich. n.* 101. *Schreb. n.* 126.

Claſſ. 3. 2. Triandria Digynia.

Nat. order of *Gramina, Graminea*, or *Graſſes.*

[a] Gærtner. [b] Hort. kew. [c] Royen.

GENERIC

GENERIC CHARACTER.

CAL. *Receptacle common* elongated into a *ſpike*, preſſing the flowers diſtichally ſpiked to the angle of the culm.
Glume univalve; oppoſite the ſhaft, awl-ſhaped, permanent.

COR. bivalve: *Valvule inferior* narrow-lanceolate, convolute, ſharp-pointed, the length of the calyx: *Valve ſuperior* ſhorter, linear, more obtuſe, concave upwards.
Nectary two-leaved: *leaflets* ovate, obtuſe, gibbous at the baſe. S.

STAM. *Filaments* three, capillary, ſhorter than the corolla. *Anthers* oblong.

PIST. *Germ* top-ſhaped. *Styles* two, capillary, reflex. *Stigmas* plumoſe.

PER. none. *Corolla* cheriſhes the ſeed, gapes, lets it fall.

SEED ſingle, oblong, convex on one ſide, furrowed-flat on the other, compreſſed.

OBS. *The ſeſſile ſpikes are placed in the ſame plane with the culm; hence the ſtem bears the office of a ſecond calycine valve (deficient and oppoſite.)*

ESSENTIAL CHARACTER.

Cal. one-leafed, fixed, many-flowered.

SPECIES.

1. Lolium perenne. *Perennial Darnel* or *Ray Graſs*.
Lin. ſpec. 122. *fyſt.* 124. *Reich.* 1. 230. *fl. lopp. n.* 32. *ſuec. n.* 110. *Huſſ. angl.* 55. *Wither. arr. ed.* 3. 167. *Relh. cant. n.* 101. *Engl. bot.* 315. *Fl. ruſt.* 4. *Anderſ. eſſays*, 2. 208. *t.* 2. *Sowayne gram. paſc. Dickſ. hort. ſic. Hall. helv. n.* 1416. *Scop. carn. n.* 129. *Neck. gallob.* 70. *Pollich. pal. n.* 129. *Leers herborn. n.* 97. *t.* 12. *f.* 1. *Schreb. gram. t.* 37. *Fl. dan. t.* 747. *Villars dauph.* 2. 175. *Krock. ſileſ. n.* 189.)
Gramen loliaceum anguſtiore folio & ſpica. *Bauh. pin.* 9. *theat.* 127, 128. *Schreuch. gram.* 25. *t.* 1. *f.* 7. A. B. C. *Reliqu. Rudb.* 13. A. *Mill. dict. n.* 2. *Monti ic.* 19. *Raii hiſt.* 1263. *ſyn.* 395.
[Gr. lol. ſpica ſimplici vulgare. *Mor. hiſt. ſ.* 8. *t.* 2. *f.* 2.
L. rubrum. *Ger. emac.* 78. 2.
L. rubr. ſ. Phoenix. *Park. theat.* 1145. 2.
Phoenix Lolio ſimilis. *Bauh. hiſt.* 2. 436.
Phoenix. *Matth.* 1023. *Dod. pempt.* 540. 1.
Hordeum murinum. *Lob. obſ.* 21. 1.
Spike awnleſs, ſpikelets compreſſed, longer than the calyx, and compoſed of ſeveral flowers.

2. Lolium tenue.
Lin. ſpec. 122. *Reich.* 1. 230. *Gmel. tub.* 31. *Allion. pedem. n.* 2186. *Villars dauph.* 2. 176.
L. perenne 2. *Wither. arr. ed.* 3. 167.
Gramen loliaceum, fol. & ſpicis tenuiſſimis. *Vaill. par.* 81.
Gr. loliacei varietas ſpica tereti anguſtiſſima. *Scheuch. gram.* 28.
Spike awnleſs, round, ſpikelets three-flowered.

3. Lolium temulentum. *Annual Darnel* or *Ray Graſs*.
Lin. ſpec. 122. *fyſt.* 124. *Reich.* 1. 231. *fl. ſuec. n.* 109. *Huſſ. angl.* 55. *Wither. arr. ed.* 3. 168. *Lightf. ſcot.* 107. *Relh. cant. n.* 102. *Fl. ruſt.* 33. *Muſ. ruſt.* 6. *t.* 1. *f.* 1. *Hall helv. n.* 1420. *Scop. carn. n.* 130. *Willeb. illuſtr. n.* 10. *Gouan. illuſtr.* 5. *Pollich. pal. n.* 130. *Leers herborn. n.* 98. *t.* 12. *f.* 2. *Schreb. gram.* 74. *t.* 36. *Fl. dan. t.* 160. *Gunn. norv.* 1. 63. *n.* 163. *Allion. pedem. n.* 2187. *Krock. ſileſ. n.* 190. *Villars dauph.* 2. 176.
Gramen loliaceum, ſpica longiore. *Bauh. pin.* 9. *theat.* 121. *Scheuch. gram.* 31. *t.* 1. *f.* 7. E. F. *Monti ic.* 18. *Reliqu. Rudb. t.* 12.
Lolium. *Dod. pempt.* 538. *Lob. obſ.* 21. 2. *Matth.* 41. *Camer. epit.* 198.—album. *Ger.* 71. 1. *emac.* 78. 1. *Park. theat.* 1145. 1. *Raii hiſt.* 1262. 1. *ſyn.* 395.—verum. *Mor. hiſt.* 3. 181. *ſ.* 8. *t.* 2. *rvw* 2.
L. gramineum ſpicatum, caput tentans. *Bauh. hiſt.* 2. 437.
Spike awned, ſpikelets compreſſed, many-flowered.

4. Lolium bromoides. *Sea Darnel.*
Huſſ. angl. 55. *Wither. arr. ed.* 3. 169.
Feſtuca avenacea ſterilis paniculis confertis erectioribus, ariſtis brevioribus. *Raii ſyn.* 413. *t.* 17. *f.* 2.—ſter. humillima, ſpica unam partem ſpectante. *Pet. cent. gram. n.* 101. *Syn. ed.* 2. 261. 5.
Panicle ſimple, pointing one way, ſpikelets awned.

5. Lolium diſtachyon.
Lin. ſyſt. 124. *Reich.* 1. 231. *mant.* 187.
Spikes in pairs, calyxes one-flowered, corollas woolly.

DESCRIPTIONS, &c.

1. Root perennial, creeping. Stems ſeveral from the ſame root, proſtrate or oblique at the baſe, but the flowering ſtem upright, ſmooth, from ſix inches to eighteen, twenty and twenty-four inches in height, according to the ſoil: they have ſeveral joints near the baſe, at a ſmall diſtance from each other, but on the upper part only one or two. (Auguſt the 2d, 1797, I count, on a great number of plants of a middling ſize three joints, and never more than four, the flowering-ſtem running up from eleven to fourteen inches above the laſt joint.) They are frequently ruſſet-coloured at the joints. Leaves four or five inches long, and from two to four lines wide, lengthened out into a point; the leaf on the ſtem above twice as broad as thoſe next the root and on the runners. The ſheath covers the ſtem for ſeveral inches above the upper joint; both that and the leaves are ſmooth. The flowers are in a ſpike, which is from four to ſix or ſeven, and even nine inches in length, compoſed of many (ten to eighteen) ſpikelets, ranged at a little diſtance from each other, in two rows alternately along the rachis or common receptacle. The ſpike is generally flat, but ſometimes nearly cylindrical; and it ſometimes ſhows a diſpoſition to become branched, particularly towards the bottom. The rachis is flexuoſe, or changes its direction in a curve line from one ſpikelet to another; and each ſpikelet being lodged at the baſe in a hollow of it, has no occaſion for an inner valve to the calyx for protection, and therefore is not provided with one. The number of flowers in each ſpikelet varies from three or four to ſix, ſeven or eight, and even ſometimes nine, ten and eleven; but ſix or ſeven is the moſt common number. The valve of the calyx tapers to a point; and the terminating calyx is two-leaved. The two inner huſks, which are the valves of the corolla, are both of the ſame length, or nearly ſo. The germ is placed between the upper of theſe, and two ſmall white ſemitranſparent ſubſtances, which Linnæus calls the nectaries. The ſeed eaſily quits the chaff.

There are many varieties of this Graſs, differing in ſize or colour of the ſtem and ſpike, as well as the number of flowers in each ſpikelet. The flowers are now and then found with awns or beards. The ſpikelets alſo are ſometimes cluſtered, and ſometimes branched.

Perennial Darnel is common in moſt parts of Europe, by way ſides and in paſtures, flowering in june. It is called in Engliſh *Ray-graſs*, from the French *ivraie*, which is their name for L. temulentum, and they call this *Fauſſe ivraie*. It is corruptly called by farmers Rie-graſs, but this Graſs bears no reſemblance to Rie, and that is a name appropriate to a very different Graſs, *Hordeum pratenſe*. Mr. Ray names our Ray-graſs *Red Darnel-graſs*. In ſome places it is called *Crop*, in Devonſhire, *Eaver*, in Norfolk, *White Noneſuch*. In German it has many names; *Perennirende* or *dauernde Lolch*, *Winterlolch*, *Suſſer Lolch*, *Engliſche Raygras*, *Lethe*, *Lethegras*, *Dort*, *Dorten*, *Drot*, *Wintertriſpe*, *Mauſtertſte*, *Mauſthafer*, *Rothhafer*, *Furſthafer*, *Maulkorn*, *Peterſhorn*, *Taubkorn*, *Wilder Dinkel*, *Dinkelſpelzen*, *Grashauch*, *Grashalch*, *Tanſch*, *Teiver*. In Daniſh, *Raigræs*. In Swediſh, *Renrepe*, *Engelmanz Rifegras*. In Italian, *Loglio vivace*, *Loglio ſalvatico*, *Fenice*. In Spaniſh, *Ballico*, *Vallito*. In Portugueze, *Joyo vivace*. In Ruſſian, *Pſchanez*.

How long Ray-graſs may have been in cultivation, I am not able to aſcertain. We may, however, venture to fix the introduction of it after the middle of the laſt century. For not only Gerarde in 1597, his republiſher Johnſon in 1633, and Parkinſon in 1640, give not the leaſt hint of any uſe to which this graſs is applied, but none of the writers on huſbandry before the Reſtoration, as Sir Hugh Plat, Googe, Markham, Sir Richard Weſton, Hartlib, Gabriel Plattes, Blith or Yarranton, ſay a word in its commendation, or even

insinuate that this, or any particular species of Grass, properly so called, was sown in laying down land.

The first mention I find made of it for cultivation, is in Dr. Plot's Oxfordshire, printed in 1677[a]. "They have *lately* sown, says he, *Ray-grass*, or the *Gramen loliaceum*, by which they improve any cold, sour, clay-weeping ground, for which it is best, but good also for drier upland grounds, especially light stony or sandy land, which is unfit for lasher loin. It was first sown in the Chiltern parts of Oxfordshire, and since brought nearer Oxford by one Mr. Eustace, an ingenious husbandman of Islip, who, though at first laughed at, has since been followed even by those very persons that scorned his experiment; it having precedence of all other grasses, in that it takes almost in all sorts of poor land, endures the drought of summer best, and in the spring is the earliest grass of any, and cannot at that time be overstocked, its being kept down making it sweeter and better beloved by cattle than any other grass: nay sometimes they have been known to leave meadow hay to feed on this: but of all other cattle it is best for horses, it being hard hay; and for sheep, if unsound, it having been known by experience to have worked good cures on them, and in other respects the best winter grass that grows." Some, he informs us, sow two bushels on an acre, but it is best to sow three, with Non-such.

Ray, in his history (1688) relates, that it is sown in a few places, and that it is excellent for fatting bullocks. In the third volume of the Oxford history of Plants by Morison and Bobart (1699) it is said, that the seeds are gathered and sown in thin and moist land; and that it is much esteemed, under the name of Ray-grass, as food for sheep and other cattle.

According to Stillingfleet, "it makes a most excellent turf on sound rich land, where it will remain. Many, he adds, are tempted by the facility of procuring the seed of this grass to lay down grounds near their houses, where they want to have a fine turf with it; for which purpose, unless the soil be very rich, a worse grass cannot be sown, as it will certainly die off in a very few years entirely." This gentleman thinks that Ray-grass does not feed good venison, and presumes from hence that it is not proper for sheep, having always observed that the same kind of ground which yields good venison, yields also good mutton. If it be the natural produce of very strong or wet lands, this is easily accounted for. In such situations it is by no means unprolific of leaves, but in dry upland pastures it runs much to stalks or bents. It is not well adapted to form a lawn, its foliage being of quick growth, and its flowering stems continually shooting forth[b]. [Mr. Miller says[c], that Ray-grass will succeed better than any other sort in strong cold land, and is an earlier seed in the spring; but that it is a very coarse grass, becoming very hard and wiry unless it be cut early, so that few cattle care to eat it. He remarks, that it has few leaves, and runs much to stalk or bents, or as it is called in some counties Bennet. When this grass is fed, therefore, he recommends the bents to be mown off. He adds, that there is another species (variety) called Red Darnel, which is of a worse nature than the other; the stalks growing hard much sooner, and having narrower leaves. It is very common in most pasture grounds, for as it comes early to flower, the seeds are generally ripe before the hay is cut. [This variety is the produce chiefly of dry pastures, where Ray-grass certainly produces little else besides stalks.

After all the encomiums that have been bestowed upon this grass, Dr. Anderson asserts that it is now in general known to be but a very indifferent grass for pasture, on account of the tendency it has to send out numerous seed-stalks very early in the season, after which no animal will taste it; so that unless it be for a very short while in the spring, when the leaves are tender and succulent, it is no longer fit for pasturage: the stalks after the month of may becoming withered; so that after that period, the field is usually covered entirely with these dead stalks, and remains during the rest of the season with very few signs of vegetation. It is moreover but a short-lived grass, usually dying out entirely in five or six years. On both which accounts, it is by no means to be recommended in general as a proper grass for pasturage.

All grasses that run chiefly to seed-stalks, should seem to be, for the same reasons, improper for that purpose; so that our researches ought to be directed principally to discover such grasses as run chiefly to leaves, and produce but few flower-stalks.

It was this quality that first recommended to Dr. Anderson the *Purple Fescue-grass*, and induced him to try some experiments with regard to it[d].

It is judiciously remarked by Mr. Curtis, that though, *Lolium perenne* may not possess all that is desirable in a grass, it is not therefore to be considered as of no value, and indiscriminately rejected. The complaint so generally urged against it, of its producing little more than stalks or bents, will be only found valid when the plant grows in upland pasture: in rich moist meadows its foliage is more abundant, and it seems to be the general opinion of agriculturists that it is highly acceptable and nutritious to cattle[e]. Certainly it is not adapted to all soils and situations equally. Several sorts may be even preferable to it, and though early, it is not the first that springs, not only the vernal, but the Fox-tail and the Meadow-grasses, all excellent in their kind, appearing earlier than this[f]. Ray-grass, however, is still valuable both as an early seed, and as being fit to mow for hay a fortnight before mixt grasses. For the latter use the abundance of stalks is an excellence, provided the grass be cut whilst the sap is in them, the chief nutriment of hay residing in these.

Mr. Swayne having hinted in his *Gramina pascua*, a work very useful to gentlemen and farmers in distinguishing pasture grasses, that there was reason to think that Ray-grass had by frequent sowing degenerated, so as to be inferior in many respects to that which grows naturally in our best meadows. Mr. Pacey, an enlightened agriculturist in the upper part of the county of Stafford, has raised it from seed selected from old pastures, and has multiplied it to that extent as to sell annually a considerable quantity; it having been proved by the most competent judges to be greatly superior to the Ray-grass commonly cultivated[g]. Mr. Swayne asks whether the L. temulentum has had any share in bringing on this degeneracy? I should think not, but ascribe it rather to cultivating and saving the seed on improper soils, particularly such as are too dry. Some persons are of opinion that if land lies under Ray-grass two or three years, it exhausts; and assert, that if one half of a field be laid down with clover, trefoil, &c. and the other half with a mixture of Ray-grass: when it is ploughed for corn, the latter part will be worse to a considerable degree[h]. It would, however, probably be the same with any other grass.

How this species came to be selected originally for cultivation, I cannot say. If it was not accident, it was perhaps because it is common, and the seeds are easily collected. That it should now be the only sort of seed which is to be had in any quantity in the shops, is a disgrace to us, since the best sorts have been so repeatedly pointed out by Mr. Curtis and others, and premiums offered for collecting them, during so many years, by the Society for the Encouragement of Arts, Manufactures and Commerce[i].

2. This is smaller than the preceding. It is distinguished by the tenuity of the culm and spike, which last is cylindrical and awnless; the spikelets are three-flowered[k]. Allione and Villars suppose it to be annual. It is generally looked upon to be no more than a variety of L. perenne. Native of France and Germany. Linnæus remarks that it is very different from Triticum tenellum.

3. Root annual. Stems or culms from two to three feet in height, upright, round, especially near the spike, rough when stroked upwards, having three, four,

[a] Ch. 6. par. 31. 32. 33. [b] Curtis, pract. obf. p. 33.
[c] Art. Gramen, n. 2. [d] Phil. 4. and 65.
[e] Effays, 2. 308. [f] Swayne in Wither. arr. ed. 3. 168.
[g] Young's ann. 2. 75. and 16. 47. [h] See art. Grass.
[i] Villars and Withering.

or five joints. Leaves flat, pointed, from nine inches to a foot or more in length, and three or four lines in breadth, the upper ſurface rough when ſtroked upwards, the lower ſmooth. Sheaths ſtriated, rough, crowned with a ſhort blunt ligula, ſlightly notched at the edge. Spike from five or ſix inches to a foot in length, rough. Spikelets alternate, in a double row, pale green, half an inch long: the number of flowers in each varying from five to nine. The ſingle valve of the calyx is the length of the ſpikelet, and has not any awn; the terminating flower of each ſpikelet, and frequently the lower ſpikelets, have two calycine valves. The outer valve of the corolla is only half the length of the calyx; it is edged with white, and puts forth below the tip a ſtraight awn, twice its own length. The ſeed is incloſed in the corolla, faſtened to the inner valve, and does not quit it ſpontaneouſly.

There is a variety of this without awns, and with a ſmooth culm, which Withering makes a diſtinct ſpecies, under the name of L. arvenſe, or White Darnel.

Annual Darnel is a native of moſt parts of Europe, Japan, the Cape of Good Hope, &c. Though there can be no doubt of its being a diſtinct ſpecies from the Perennial Darnel, yet we are at a loſs for ſpecific diſtinctions: for that has ſometimes awns to the flowers, and this, not unfrequently, has none. This however is annual, taller and larger in every reſpect, and of a paler hue. Its place of growth is alſo different: for it is a weed among corn, eſpecially wheat and barley, and alſo among flax. It flowers in july and auguſt, later than *L. perenne*.

Virgil joins it with the Wild Oat, as a weed among crops in general——

——" Interque nitentia culta
" Infelix lolium & ſteriles dominantur avenæ[1]."

The epithet *infelix* is probably given it from its deleterious qualities.

Ovid unites it with *Tribulus*, infeſting Wheat——

——" Lolium tribulique fatigant
" Triticeas meſſes & inexpugnabile gramen[2]."

The flour of the ſeeds, mixed with wheat flour, produces diſorders in the human body, as vomiting, purging, and violent cholics, but it has not a ſenſible effect, unleſs taken in conſiderable quantity; or, according to Linnæus, unleſs it be eaten hot. The ſeed, malted with barley, ſoon occaſions drunkenneſs; hence the French name *Ivraie*, and by corruption our Engliſh *Ray*.

In Yorkſhire it is called *Droke*, and in Ireland *Sturdy*.—In Germany *Jakrige Lolch, Germaine Lolch, Somme Lolch, Lulchtreſpe, Betaubende Lolch, Taubkorn, Tollkorn, Taubkraut, Tobbauſor, Taberich, Taberling, Taumel, Taumellolch, Schwindelbaſer, Schwindelkorn, Trunkenweizen, Schlafweizen, Kuhweizen, Rauſch, Rauſchkorn, Dippelbaſor, Sommertreſpe, Traſp, Traſpen, Treſp, Treſpen, Weizentwalch, Twalch, Wendiſche Piank, Radel, Schwanzel, Dert, Treſpendorſt, Treſpdorp, Schafsgraſs, Leitharb, Unkraut, Zizania.* In Denmark, *Hoyre, Fleygregræs, Heire, Swingel, Dude.* In Sweden, *Darrepe.* In Italy, *Loglio, Gioglio, Zizzania.* In Spain, *Joyo, Cizana, Zizana.* In Portugal, *Joyo, Zizania baſtarda.* In Ruſſia, *Kukol.*

In this enlightened age it can ſcarcely be neceſſary to correct an old vulgar error, that wheat degenerates into this graſs. The fact is, that in very wet ſeaſons, and among very bad huſbandmen, Darnel has ſo far prevailed as to ſuffocate the wheat, and to take its place.

Celſus recommends the meal of Lolium to be uſed in poultices, in common with that of wheat, far, barley, and ervum[3].

4. Root annual. Culms ſeveral, from ſix inches to a foot in height, oblique, round, ſmooth, ſomewhat branched. Leaves rolled in a little, acute, naked, much ſhorter than the ſheath, which is ventricoſe and naked. Ligule bluntiſh. Spikelets peduncled, linear, with from four to eight flowers in each. Peduncles ſhort, thickened, rugged. Calycine valve linear, concave, awned. Outer valve of the corolla larger, linear, keeled, awned, rugged: inner ſhorter, linear, flat, awnleſs. Awn twice as long as the floret.

Native of England, on the ſea coaſt, in looſe ſand; flowering in may and june[4].

5. Culms decumbent, branched at the baſe: the flowering ones riſing, a foot high, filiform, narrow, even. Spikes in pairs, terminating, equal, ſeſſile, linear, very narrow, directed one way outwards: flowers alternate, white with ſhaggy hairs. Glume of the calyx ſublateral, linear, blunt, permanent. Corolla ovate, woolly with white ſhagginеſs.

Native of Malabar. Obſerved by Koenig[5].]

PROPAGATION AND CULTURE.

1. *Ray-graſs.*

This Graſs is uſually ſown with Clover, upon ſuch lands as are deſigned to be ploughed again in a few years, and the common method is to ſow it with Spring Corn; but from many repeated trials, I have always found, that by ſowing theſe ſeeds in auguſt, when there has happened a few ſhowers to bring up the Graſs, that the crop has anſwered much better than any which has been ſown in the common way; for the Graſs has often been ſo rank, as to afford a good feed the ſame autumn; and the following ſpring there has been a ton and a half of hay per acre mowed very early in the ſeaſon, and this has been upon cold ſour land; ſo that I am convinced of that being the beſt ſeaſon for ſowing theſe Graſſes, though it will be very difficult to perſuade thoſe perſons to alter their practice, who have been long wedded to old cuſtoms. The quantity of ſeeds which I allow to an acre is about two buſhels, and eight pounds of the common Clover, which, together, will make as good plants upon the ground as can be deſired; but this is not to be practiſed upon lands where the beauty of the verdure is principally regarded, but is fit only for thoſe who have profit in view.

When this graſs is fed, mow off the bents in the beginning of june, otherwiſe they will dry upon the ground, and have the appearance of a ſtubble field all the latter part of ſummer; and they will not only be diſagreeable to the ſight, but troubleſome to the cattle, who will not touch them. By permitting them to ſtand the after-growth of the graſs is greatly retarded, and the beautiful verdure loſt for three or four months, ſo that it is good huſbandry to mow the bents before they grow too dry, and rake them off the ground: if they are then made into hay, it will ſerve for cart-horſes or dry cows in winter.

[Dr. Anderſon affirms, that Ray-graſs requires a deep open looſe deaſish ſoil, tending to dampneſs, to bring it to full perfection. On a ſoil of this ſort he has meaſured ſeveral ſtalks above ſix feet in length.

He obſerves that ſoot, which does not promote the growth of clover, has a ſurpriſing effect upon that of Ray-graſs[6].

Mr. Kent ſays, that Ray-graſs is ſown with clover at the rate of a quarter of a peck to an acre, or by itſelf at the rate of two pecks to an acre, or in the proportion of a gallon to an acre, with eight pounds of clean trefoil; that all cattle are particularly fond of it in the ſpring, but towards midſummer the ſtalks become dry, and cattle then refuſe them; that therefore this graſs ſhould be kept down by being conſtantly fed. When mixed with clover and mowed for hay, it may however be ſpring-fed, and is even the better for it, becauſe it would otherwiſe be ripe before the clover. When ſown with clover its greateſt advantage is experienced in the ſecond and third years, for as the clover declines, this increaſes in proportion. When mixed with trefoil, it is a very good graſs upon light land, deſigned to continue ſeveral years in ſheep-paſture[7].

In Norfolk the ſecond year's lay of Ray-graſs and clover is invariably-paſtured; the ſpring-ſhoot being uſually expended in finiſhing or topping up turnep-fed bullocks; for which purpoſe no other vegetable is perhaps ſuperior to Ray-graſs. Store-cattle follow the bullocks, and keep poſſeſſion of the lays till they

[1] Georg. 1. 153. [2] Metam. l. 5. [3] L. 2. c. 33.
[4] Hudſon. [5] Linn. mant. [6] Eſſays, 2. 300. 309.
[7] Hunt, p. 47.

are broken up for wheat, in july, auguſt, ſeptember or october[1].

Next to Sainfoin, Ray-graſs is in the higheſt eſteem with the Cotſwold farmers. Not only the green herbage, but the hay is there conſidered as ſuperiorly nutritious. Bullocks are finiſhed with ordinary barley and ray-graſs hay; that is, not with the ſtraw of ray-graſs, but with the herbage cut in a ſtate of ſucculency, and properly made[2].

If ſuffered to ſtand too long before it be mown, the hay will of courſe be ordinary. If ſuffered to run up in the ſpring before ſtock be turned upon it, much of it will be left uneaten. If the ſeed ſown be foul, the herbage will be of a bad quality. Under bad management the ſucceeding wheat crop will be unprofitable.

The ſeed ſhould be winnowed, and freed from the ſeeds of weeds, as carefully as the ſeed of wheat or other grain.

If Ray-graſs be intended for paſturage, it ought to be broken as early in ſpring as the land will bear ſtock; which ought to be ſo proportioned, that it never can get above a moderate bite.

If it be ſhut up for hay, it ought to be mown as ſoon as the ſeed-ſtems are fully formed, before the flowers come out.

If it be intended for ſeed, it ought to ſtand until the flowers be fully blown: but it muſt not be expected, in this caſe, that the ſtraw will prove hay.

As a ſpring-ſeed Ray-graſs is preferable to every other graſs; and in autumn it renews its nutritious bite. This property, added to its productiveneſs, and to the facility with which its ſeeds may be collected in quantity, give it a decided preeminence to every other blade-graſs at preſent known.

But this, like other early graſſes, remains in a great meaſure unproductive during the ſummer months. This renders it improper to be ſown alone, for paſturage; and White Clover, the Trefoils, or other ſummer herbage ſhould be cultivated with it.

All perhaps that is wanted in addition to theſe, in order to render the buſineſs of cultivating perennial lays as nearly perfect as common practice may require, is one or more ſummer blade-graſſes of a nutritious quality and productive growth; the ſeeds of which may be eaſily collected ſeparately from the ſeeds of weeds.

Meadow Feſcue (Feſtuca pratenſis) is moſt likely to anſwer this purpoſe; or Meadow Poa (Poa pratenſis) if the ſeeds were eaſily ſeparable.

From a gallon to a peck of clean winnowed ſeed of Ray-graſs is abundantly ſufficient to ſow an acre, when mixed with the Clovers, Trefoil, &c.[3]

In general, where prejudices have ariſen againſt Ray-graſs, it has been becauſe bad ſeed has been ſown, or becauſe the ſoil is improper for it, or that the management has been faulty.

3. Annual Darnel is very injurious to a wheat crop, but may eaſily be avoided, as it is ſown along with the ſeed, from which it may be ſeparated by the ſieve; and not being a root-weed it is unpardonable to ſuffer it to increaſe to any conſiderable degree.

LOLIUM. See *Agroſtemma* and *Cynoſurus*.

LOMBA. See *Piper*.]

LONCHITIS. (*From* λογχη, *a ſpear.*)

Lin. gen. n. 1177. *Reich. n.* 1294. *Schreb. n.* 1629.

Claſſ. 24. 2. Cryptogamia Filices.

Nat. order of *Filices* or *Ferns*.

GENERIC CHARACTER.

Capſules diſpoſed in ſimulated lines lying under the ſinuſes of the frond.

SPECIES.

[1. Lonchitis hirſuta.

Lin. ſpec. 1536. *Jaſſ.* 932. *Reich.* 4. 400. *Brown. jam.* 89. 3.

Filix ramoſa pinnulis quercinis. *Plum. fil.* 18. *t.* 20.

Adiantum pianis quercinis, ramis villoſis. *Pet. fil.* 82. *t.* 4. *f.* 5.

[1] Marſh. Norf. 1. 301, 309. [2] Marſh. Glouc. 2. 72.
[3] Marſh. Yorkſh. 2. 89.

4

Fronds pinnatifid blunt quite entire, ſhoots branched hirſute.

2. Lonchitis aurita.

Lin. ſpec. 1536. *Jaſſ.* 932. *Reich.* 4. 400.

Filix latifolia ſpinulis mollibus & nigris aculeata. *Plum. fil.* 14. *t.* 17.

F. ſpinoſa, ſeminibus lunulatis. *Pet. fil.* 172. *t.* 4. *f.* 4.

Fronds pinnate, the loweſt pinnas two-parted, ſhoots undivided prickly.

3. Lonchitis repens.

Lin. ſpec. 1536. *Jaſſ.* 932. *Reich.* 4. 400.

Filix aculeata repens. *Plum. fil.* 11. *t.* 12.

F. ramoſa acul. *Pet. fil.* 39. *t.* 4. *f.* 6.

Fronds pinnate, pinnas alternate ſinuate, ſhoots branched prickly.

4. Lonchitis pedata.

Lin. ſpec. 1536. *Jaſſ.* 932. *Reich.* 4. 401. *Brown. jam.* 89. 2. *t.* 1. *f.* 1, 2.

Fronds pedate, pinnas pinnatifid ſerrulate.

5. Lonchitis tenuifolia.

Forſt. flor. auſtral. n. 425.

Arboreſcent, fronds decompounded, leaves pinnate, pinnas linear-oblong ſerrate, the loweſt pinnatifid.

DESCRIPTIONS, &c.

1. This Fern riſes commonly to the height of four or five feet, and is moderately hirſute[1].

Native of South America and Jamaica.

2, 3. Natives of South America.

4. This Fern riſes by a ſimple ſtalk to the height of two or three feet, and then divides into three parts, whereof the middle is ſimple, but each of the lateral diviſions is again parted into three ſimple branches of a proportionate length.

Native of Jamaica, in the mountains of New Liguanee[2].

5. Native of the iſle of Tanna in the South Seas[3].

Mr. Miller has two ſpecies under Lonchitis—

1. L. aſpera, which is *Oſmunda* or *Blechnum Spicant.*

2. L. aſpera major, which is *Polypodium Lonchitis.*

PROPAGATION AND CULTURE.

Theſe Ferns being natives of very hot climates, muſt be planted in pots, and plunged into the bark-pit. They may be increaſed by parting the roots. In ſummer they ſhould have plenty of free air, and be frequently watered.

LONCHITIS. See *Acroſtichum, Adiantum, Aſplenium, Blechnum, Ophioglaſſum, Oſmunda, Polypodium, Pteris.*

LONDON-PRIDE. See *Saxifraga.*]

LONICERA. *So named by Plumier, from Adam Lonicer, phyſician at Frankfort, where he died in* 1588, *aged* 58. —*Methodus herbarum*, 1540. *Kranterbuch*, 1546. *Hiſtoria Naturalis*, 1551, 1555, &c.

Lin. gen. n. 233. *Reich. n.* 250. *Schreb. n.* 319.

Capriſolium. *Tournef. t.* 378. *Juſſ.* 212. *Gærtn. t.* 27.

Periclymenum. *Tournef. t.* 378.—Chamæceraſus. *Tournef. t.* 379.—Xyloſteum. *Tournef. t.* 379. *Juſſ.* 212.—Diervilla. *Tournef. Juſſ.* 211. Symphoricarpos. *Dill. elth.* 273. *Juſſ.* 211.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Aggregatæ. Capriſolia.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, ſuperior, ſmall.

COR. one-petalled, tubular; *Tube* oblong, gibbous; *Border* five-parted: *diviſions* revolute, one of which is more deeply ſeparated.

STAM. *Filaments* five, awl-ſhaped, nearly the length of the corolla. *Anthers* oblong.

PIST. *Germ* roundiſh, inferior. *Style* filiform, the length of the corolla. *Stigma* obtuſe-headed.

PER. *Berry* umbilicated, two-celled.

SEEDS roundiſh, compreſſed.

OBS. Capriſolium *has the inferior diviſion of the corolla ſeparated twice as deep. Berries diſtinct.*

Periclymenum *has the diviſions of the corolla cut almoſt equally deep. Berries diſtinct.*

Chamæceraſus *has the lower diviſion of the corolla twice as deeply cut. Two Berries ſeated on the ſame baſe.*

[1] Browne. [2] Ibid. [3] Forſter.

Xyloſteum

Xylosteum *has the divisions of the corolla almost equally cut. Two Berries on the same base.*

Symphoricarpos. *Corolla nearly bell-shaped: Fruit two celled, half-four-celled, seeds solitary.*

L. Alpigena *and* cærulea *are singular in having one germ for two styles, like Mitchella.*

ESSENTIAL CHARACTER.

Cor. one-petalled irregular. *Berry* many-seeded, two-celled, inferior. (In Xylosteum one-celled, in alpigena three-celled. *G.*)

SPECIES.

* Periclymena, *with a twining stem.*

1. Lonicera Caprifolium. *Italian Honeysuckle.*
Lin. spec. 246. *fyst.* 215. *Reich.* 1. 480. *Hort. cliff.* 85. *upsal.* 42. *vir. cliff.* 14. *Sauv. monsp.* 139. *Villars dauph.* 2. 534. *Scop. carn. n.* 242. *Jacqu. austr.* 4. 30. *t.* 357. *Du Roi harbk.* 1. 385. *Pollich pal. n.* 217. *Allion. pedem. n.* 465. *Krock. silef. n.* 328. *Pallas rosf.* 1. 55. *Knipb. cent.* 3. *n.* 58. *Knorr. del.* 1. *t.* S. 4. *Pleuck. ic. t.* 134.

Periclymenum perfoliatum. *Baub. pin.* 302. *Dalech.* 1427. *Rai hist.* 1490. *Ger.* 743. 2. *emac.* 891. 2.—ſ. italicum. *Park. theat.* 1460. 3.

P. italicum. *Mill. dict. n.* 5.

α. Caprifolium ital. perfol. præcox. *Hort. angl.* 14. *n.* 3. *t.* 5. *Italian early White Honeysuckle.*

β. C. ital. *Hort. angl.* 14. *n.* 1. *t.* 5. *Duham. arb.* 3. *Dod. pempt.* 411. *Tourn. inſt.* 608. *Garid.* 80. *t.* 20.

Flowers ringent in terminating whorls, leaves deciduous, the upper ones connate-perfoliate.

[2. Lonicera dioica. *Glaucous Honeysuckle.*
Lin. ſyſt. 215. *Ait. hort. kew.* 1. 230.

L. media. *Murr. in nov. comm. gott.* 1776. *p.* 28. *t.* 3.

Whorls subcapitate bractéd, leaves deciduous glaucous beneath, the upper ones connate-perfoliate, corollas ringent gibbous at the base.]

3. Lonicera ſempervirens. *Trumpet Honeysuckle.*
Lin. ſpec. 247. *ſyſt.* 215. *Reich.* 1. 481. *Hort. cliff.* 58. *Fabric. helmſt.* 398. *Du Roi harbk.* 1. 337. *Hort. angl. t.* 7. *Knipb. cent.* 3. *n.* 59. *Knorr. del.* 1. *t.* 53.

Periclymenum ſempervirens. *Mill. dict. n.* 1.

P. virginianum. *Riv. mon.* 116.

P. perfoliatum virgin. ſempervirens & florens. *Herm. lugdb.* 484. *t.* 483. *Rai hiſt.* 1491.

α. major. *Great Trumpet Honeysuckle.*
With roundiſh leaves.

β. minor. *Small Trumpet Honeysuckle.*
With oblong leaves.

Spikes naked terminating, the upper leaves connate-perfoliate, corollas almoſt regular, tube bellying at top.

4. Lonicera grata. *Evergreen Honeysuckle.*
Ait. hort. kew. 1. 231.

Periclymenum americanum. *Mill. dict. n.* 7.

Caprifolium perfoliatum ſempervirens, floribus ſpeciosis. *Raud. cbelſ.* 9

Flowers in terminating whorls, leaves perennial obovate glaucous beneath, the upper ones connate-ſubperfoliate, corollas ringent.

[5. Lonicera implexa. *Minorca Honeysuckle.*
Ait. hort. kew. 1. 231.

Flowers ringent in whorls, bracteas even, leaves perennial ſmooth oblong, the upper ones connate-perfoliate, the uppermoſt dilated.]

6. Lonicera Periclymenum. *Common Honeysuckle.*
Lin. ſpec. 247. *ſyſt.* 216. *Reich.* 1. 481. *hort. cliff.* 58. *upſ.* 42. *Fl. ſuec. n.* 193. *mat. med.* 62. *Hauſq. angl.* 94. *Wither. arr. ed.* 3. 246. *Curt. lond.* 1. 15. *Relh. cant. n.* 178. *Holl. belv. n.* 673. *Pollich pal. n.* 218. *Villars dauph.* 2. 534. *Krock. ſilef. n.* 329. *Allion. pedem. n.* 466. *Laur. cochinch.* 150. *Du Roi harbk.* 1. 382. *Blackw. t.* 35. *Fl. dan.* 908. *Scop. carn. n.* 243.

α. L. vulgaris. *Common Wood-bind.*
Periclymenum vulgare. *Mill. dict. n.* 6.
Periclymenum. *Fuchſ. hiſt.* 646. *Trag.* 822. *Lob. icſ.* 353. 1. *Ger.* 743. 1. *emac.* 891. 1.

P. non perfoliatum. *Bauh. hiſt.* 2. 104. 1.—germanicum. *Baub. pin.* 302.

P. ſ. Caprifolium vulgare. *Park. theat.* 1460. 1. *Rai hiſt.* 1490.

Caprifolium germanicum. *Dod. pempt.* 411. *Rai ſyn.* 458. *Tourn. inſt.* 608.—non perfoliatum. *Hort. angl. t.* 8. *f.* 1, 2. *Knipb. cent.* 8. *n.* 61.

β. L. ſerotina. *Late Red Honeysuckle.*
Caprifolium german. flore rubello ſerotinum. *Hort. angl* 14. *n.* 4. *t.* 7. *Mill. fig.* 53. *t.* 79. *Riv. mon. t.* 122.

γ. L. belgica. *Dutch Honeysuckle.*
Periclymenum germanicum. *Mill. dict. n.* 4.
Capr. german. floribus ſpeciosis. *Hort. angl.* 15. *n.* 5. *t.* 6.
Periel. ſ. Capr. german. flore rubello. *Park. theat.* 1460. *n.* 2. *Rai hiſt.* 1490.

δ. L. quercifolia. *Oak-leaved Honeysuckle.*
Capr. non perfoliatum, foliis ſinuoſis. *Tourn. inſt.* 608. *Rai ſyn.* 458. *Duham. arb.* 6.
Periel. fol. guercinis. *Merr. pin.* 92.

Flowers ringent in terminating heads, leaves deciduous all diſtinct.

[7. Lonicera japonica. *Japaneſe Honeysuckle.*
Lin. ſyſt. 216. *Thunb. jap.* 89.

Flowers terminating in pairs ſeſſile, all the leaves diſtinct, ſtems twining.]

** Chamæcerafa *with two-flowered pedunckes.*

8. Lonicera nigra. *Black-berried upright Honeyſuckle.*
Lin. ſpec. 247. *ſyſt.* 216. *Reich.* 1. 481. *Jacqu. auſtr.* 4. *p.* 7. *t.* 314. *Sauv. monſp.* 140. *Villars dauph.* 2. 534. *Krock. ſilef. n.* 331. *Allion. pedem. n.* 467. *Holl. belv. n.* 676. (Caprifolium.)

Periclymenum rectum ſabaudicum. *Ger.* 1111. 1. *emac.* 1294. 1.—fructu nigro. *Park. theat.* 1462. *f.* 2. *Rai hiſt.* 1491.—2. *Clef. hiſt.* 1. 58.—fol. ferrato. *Baub. hiſt.* 2. 107.

P. alpinum nigrum. *Geſn. faſc.* 37. *t.* 8. *f.* 48.

Chamæcerafus alpina, fructu nigro gemino. *Baub. pin.* 451. *Tournef. inſt.* 609.

Peduncles two-flowered, berries diſtinct, leaves elliptic quite entire.

9. Lonicera tatarica. *Tartarian Upright Honeyſuckle.*
Lin. ſpec. 247. *ſyſt.* 216. *Reich.* 1. 482. *hort. upſ.* 42. *Gmel. ſib.* 3. 134. *n.* 7. *Amm. ruth.* 184. *n.* 262. *Knipb. cent.* 9. *n.* 61. *Pallas roſſ.* 1. 55. *t.* 36. *Du Roi harbk.* 1. 391. *Jacqu. ic. collect.* 1. 34.

Peduncles two-flowered, berries diſtinct, leaves cordate obtuſe.

10. Lonicera Xyloſteum. *Fly Honeyſuckle.*
Lin. ſpec. 248. *ſyſt.* 216. *Reich.* 1. 482. *Fl. ſuec. n.* 194. *hort. cliff.* 58. *Wither. arr. ed.* 3. 247. *Scop. carn. n.* 244. *Pollich pal. n.* 219. *Sauv. monſp.* 140. *Villars dauph.* 2. 535. *Krock. ſilef. n.* 330. *Allion. pedem. n.* 468. *Du Roi harbk.* 1. 388. *Fl. dan. t.* 808. *Pallas roſſ.* 1. 56. *Gmel. ſib.* 3. 129. *n.* 5. *Laur. cochinch.* 150. *Duham. arb.* 2. *t.* 154. *Mill. fig. t.* 167. *f.* 1.

Caprifolium Xyloſteum. *Gærtn. fruct.* 1. 135. *Hall. helv. n.* 677.

Periclymenum rectum germanicum. *Ger.* 1111. 2. *emac.* 1294. 2.—fructu rubro. *Park. theat.* 1462. 1. *Rai hiſt.* 1491.—fructu rubro & nigro. *Baub. hiſt.*

Xyloſteum. *Dod. pempt.* 412. 1. *Riv. mon. t.* 120.

Chamæcerafus dumetorum, fructu gemino rubro. *Baub. pin.* 451. *Tourn. inſt.* 603.

Peduncles two-flowered, berries diſtinct, leaves quite entire pubeſcent.

11. Lonicera pyrenaica. *Pyrenean Upright Honeyſuckle.*
Lin. ſpec. 248. *ſyſt.* 216. *Reich.* 1. 483.

Xyloſteum pyrenaicum. *Tournef. inſt.* 609. *Magn. hort. t.* 209. *Rai dendr.* 93. *Duham. arb.* 2. 274. *t.* 110.

Peduncles two-flowered, berries diſtinct, leaves oblong ſmooth.

12. Lonicera alpigena. *Red-berried Upright Honeyſuckle.*
Lin. ſpec. 248. *ſyſt.* 216. *Reich.* 1. 483. *hort. cliff.* 58. *Scop. carn. n.* 245. *Jacqu. auſtr.* 3. 40. *t.* 274. *Sauv. monſp.* 140. *Villars dauph.* 2. 535. *Krock. ſilef. n.* 332. *Allion. pedem. n.* 470. *Pallas roſſ.* 1. 57. *Mill. fig. t.* 167. *f.* 2.

Capri-

Caprifolium alpigenum. *Gærtn. fruct.* 1. 136. *Hall. helv. n.* 675.

Periclymenum rectum 4. *Clus. hist.* 1. 59.—3. *Tabern.* 900.—fructu rubro. *Ger. emac.* 1295. 4. *Park. theat.* 1463. 4. *Raii hist.* 1492.

Xylosteum fructu cerasi. *Riv. mon. t.* 121.

Chamæcerasus. *Gesn. fasc.* 33. *t.* 14. *f.* 44.—montana. *Gesn. ap. Cord.* 213. *fasc.* 33. *t.* 14. *f.* 44.

C. alpina, fructu rubro gemino, duobus punctis notato. *Bauh. pin.* 451. *Tournef. inst.* 609.

Peduncles two-flowered, berries coadunate twin, leaves oval-lanceolate.

[13. Lonicera caucasica.

Pallas rosf. 1. 57.

Peduncles two-flowered, berries coadunate-twin, leaves ovate-lanceolate quite entire.]

14. Lonicera cærulea. *Blue-berried Upright Honeysuckle.*

Lin. spec. 249. *syst.* 216. *Reich.* 1. 484. *Gmel. sib.* 3. 131. *n.* 6. *Pallas rosf.* 1. 58. *t.* 37. *itin.* 2. 568. (L. pyrenaica.) *Scop. carn. n.* 246. *Du Roi barbk.* 1. 394. *Jacqu. austr.* 5. 35. *app. t.* 17. *Hall. helv. n.* 674. (Caprifolium.)

Periclymenum rectum fructu cæruleo. *Clus. paun.* 83. *Bauh. hist.* 2. 108. *Ger.* 1112. 3. *emac.* 1295. 3. *Park. theat.* 1463. 3. *Raii hist.* 1492.

Chamæcerasus montana, fructu singulari cæruleo. *Bauh. pin.* 451. *Duham. arb.* 4.

Peduncles two-flowered, berries coadunate-globular, styles undivided.

**** Stem upright, peduncles many-flowered.*

[15. Lonicera mongolica.

Pallas rosf. 1. 59. *t.* 38. *itin.* 3. *app.* 721. *n.* 76. *Gmel. sib.* 3. 135. *n.* 8. *t.* 25.

Peduncles many-flowered, berries simple ent-flowered, leaves ovate serrate pubescent.]

16. Lonicera Symphoricarpos. *Shrubby St. Peter's-wort.*

Lin. spec. 249. *syst.* 216. *Reich.* 1. 484. *hort. cliff.* 58. *Gron. virg.* 23. *Du Roi barbk.* 1. 396. *Plenck ic. t.* 133.

Symphoricarpos foliis alatis. *Dill. elth.* 371. *t.* 278. *f.* 360. *Duham. arb.* 2. *t.* 82.

Vitis idæa caroliniana, fol. subrotundis hirsutis. *Hort. angl.* 85. *t.* 20.

Heads lateral peduncled, leaves petioled.

[17. Lonicera bubalina.

Lin. syst. 216. *suppl.* 146. *Thunb. prodr. cap.* 41. *Vahl symb.* 3. 37.

Heads terminating peduncled, leaves oblong quite entire smooth.]

18. Lonicera Diervilla. *Yellow-flowered Upright Honeysuckle.*

Lin. spec. 249. *syst.* 217. *Reich.* 1. 484. *mat. med.* 62. *Willich obs. n.* 76. *Du Roi barbk.* 1. 396. *Knipb. cent.* 9. *n.* 60. *Plenck. ic. t.* 135.

Diervilla. *Lin. hort. cliff.* 63. *t.* 7.

D. Lonicera. *Mill. dict.*

D. acadiensis fruticosa, flore luteo. *Tourn. in act. par.* 1706. *t.* 7. *f.* 1. *Duham. arb.* 1. 209. *t.* 87. *Mill. fig.* 83. *t.* 124. *marked* 125.

Racemes terminating, leaves serrate.

[19. Lonicera corymbosa.

Lin. spec. 249. *syst.* 217. *Reich.* 1. 484.

Periclymenum foliis acutis, floribus profunde dissectis. *Feuill. peruv.* 1. 760. *t.* 45.

Corymbs terminating, leaves ovate acute.

DESCRIPTIONS, *&c.*

Some authors separate this natural genus of shrubs, keeping the first section or *Periclymena* of Linneus together under the name of *Caprifolium*: the second section or *Chamæcerasa* under the name of *Xylosteum*: and the third with the name of *Diervilla*. The first have twining stems, the leaves of some connate, the flowers sessile in terminating heads or whorls several together. The second have upright stems, and the peduncles two-flowered, axillary and solitary. The third have many-flowered axillary and terminating peduncles[a].]

1. The first sort is commonly called the Italian Honeysuckle; of this there are two or three varieties, the early white Honeysuckle is one; this is the first which flowers, always appearing in may. The branches of this are slender, covered with a light green bark, and garnished with oval leaves of a thin texture, placed by pairs, sitting close to the branches, but those which are situated towards the end of the branches, join at their base, so that the stalk seems as if it came through the leaves. The flowers are produced in whorled bunches at the end of the branches; they are white, and have a very fragrant odour, but are of short duration, so that in about a fortnight they are entirely over; and soon after the leaves appear as if blighted and sickly, making an indifferent appearance the whole summer, which has rendered them less valued than the others. The other variety is the yellow Italian Honeysuckle, which is the next in succession to the white. The shoots of this are much like those of the former, but have a darker bark; the leaves are also of a deeper green; the flowers are of a yellowish red, and appear soon after the white; they are not of much longer duration, and are succeeded by red berries, containing one hard seed inclosed in a soft pulp, which ripens in the autumn.

[This is a very smooth shrub, in its natural state twining round trees with its long, round, opposite branches. Leaves very smooth, conjugate; the lower ones ovate, blunt, connate by a membrane investing the branch, more united under the flowering-stalks, a pair on the flowering-stalks themselves; the uppermost almost orbicular, perfoliate, forming a sort of dish for the flowers; they are all glaucous underneath. Flowers about six in a whorl (or from six to eight, sometimes fewer), slender and delicate, white, reddish white, red, or yellow, extremely fragrant, from an inch and half to almost two inches in length, the lips by no means so long or large as in the Woodbind or German Honeysuckle, but short, and broader in proportion. Stamens and style shorter than the corolla. Berries roundish or subovate, succulent, smooth, red or orange with a black spot at top, containing four or five (from one to six) roundish smooth seeds.

Native of the South of Europe. Cultivated by Gerarde in 1596. It seems then not to have been long known, for Gerarde says, "the double Honi-"suckle groweth now in my garden, and many others "likewise in great plenty, although not long since, "very rare and hard to be found, except in the garden "of some diligent herbarist."

Italian Honeysuckle is named in German *Geißblatt, Durchwachsene welsche oder Italienische Geißblatt, Durchwachs, Je longer je lieber, Jerichorose, Welsche Speckblie, Waldblie, Waldwinde, Zaunling, Gilgenconfori.* In Dutch, *Italiaansche Kamperfolie, Caprifolie, Geitenblad.* In Danish, *Italiensk Gedeblad, Skovlilie.* In Swedish, *Italienst Getblad.* In French, *Chevrefeuille des jardins* or *d'Italie.* In Italian, *Madreselva, Caprifoglio.* In Spanish, *Madreselva.* In Portuguese, *Matrisylva.*

2. Murray called this species *media* because it has the stem and manner of flowering as in the Periclymena, but a short corolla with a gibbose tube, as in the Chamæcerasa[b].

It is a native of North America, and was introduced in 1766, by Peter Collinson Esq. It flowers in june and july[c].]

3. This sort grows naturally in Virginia, and many other parts of North America, but has been long cultivated in the english gardens by the title of Virginia Trumpet Honeysuckle. Of these there are two varieties, if not distinct species, one being much hardier than the other. The old sort, which came from Virginia, has stronger shoots; the leaves are of a brighter green; the bunches of flowers are larger, and deeper coloured than the other which came from Carolina. These plants have the appearance of the common Honeysuckle, but the shoots are weaker than any of those, except the wild sort called Woodbine; they are of a purplish red colour, and smooth. The leaves are of an oblong oval shape inverted, and closely surround the stalk; of a lucid green on their upper side, but pale on their under. The flowers are produced in

[a] Juss.

[b] Linn. syst. 216. n. 6.

[c] Hort. kew.

bunches

bunches at the end of the branches; theſe have long ſlender tubes, which are enlarged at the top, where they are cut into five almoſt equal ſegments. The outſide of the flower is of a bright ſcarlet, and the inſide yellow; they have great appearance of the Honeyſuckle, but are not ſo deeply divided, nor are the ſegments reflexed. They have no odour, but for the beauty of their flowers, and their long continuance, together with their leaves being evergreen, they are preſerved in moſt curious gardens.

[The involucre is very large, and more perfectly connate-perfoliate than even in the firſt ſort. The ſpike of flowers is compoſed of three or four whorls one above another, not ſpread all round, but moſtly turned to one ſide, either quite naked, or having only an imperfect leaf at the baſe. Flower-ſtalk ſingle with one perfoliate leaf, or triple, with a large perfoliate leaf at the baſe of the whole, and a ſmaller one a little below the flowers on each ſide ſtalk. Flowers ſix in each whorl, eighteen to twenty-four in the whole ſpike. Corolla from an inch and half to an inch and three-quarters in length, almoſt ſtraight, very ſlender at bottom, but ſwelling very much at top; lip leſs irregular than in the other Honey-ſuckles, but yet one petal is ſomewhat ſeparated from the reſt, and a little bent back. Stamens the length of the corolla. Piſtil longer.

Ray mentions its being cultivated at Fulham, "in "horto inſtructiſſimo Rev. Epiſcopi Londinenſis "D. Compton." It was however cultivated earlier than this, namely in 1656, by John Tradeſcant Junior. It flowers from may to auguſt[2].]

4. This ſort grows naturally in North America; it has ſtrong branches, covered with a purple bark, which are garniſhed with lucid green leaves embracing the ſtalks, and continuing their verdure all the year. The flowers are produced in whorled bunches at the end of the branches; there are frequently two and ſometimes three of theſe bunches riſing one out of another; they are of a bright red on their outſide, and yellow within, of a ſtrong aromatic flavour. This ſort begins to flower in june, and there is a ſucceſſion of flowers till the froſt puts a ſtop to them, ſo that it is the moſt valuable of all the ſorts.

[Cultivated in 1739, by Mr. Miller.

5. Leaves ſmaller and narrower than in the other ſorts.

Native of Minorca. Introduced about 1772, by Monſ. Richard. It flowers from june to ſeptember[3].]

6. The common wild Engliſh Honeyſuckle or Woodbind trails over buſhes, and twines round the boughs of trees, with its very ſlender hairy (or ſmooth) branches, [which are oppoſite, and commonly ſtained with purple, in part at leaſt or on one ſide. Leaves oppoſite, ovate, ſmooth (or hairy), underneath glaucous, all diſtinct and more ſeparated from the ſtem, though even in theſe there is a ſlight membranaceous ring running round the branch and connecting the two oppoſite leaves. The upper floral leaves are ſeſſile and cordate. Peduncles ſhort, ſingle, or more often triple, covered with glandular hairs, as are alſo the calyx, and tube of the corolla. Flowers in a thick roundiſh whorled ſpike, many together (from ten or twelve to nineteen or twenty;) tube an inch long, curved a little; border two-parted, both parts reflex, the upper one divided into four blunt and nearly equal ſegments, the lower one linear and entire. The tube is wider and ſhorter, the border much longer than in the Italian Honeyſuckle. On account of the border being turned back, the ſtamens ſtand much above the corolla, and the piſtil much above them. The corollas are uſually red on the outſide, and yellowiſh within, but they vary much in colour, between red, purple and yellow, and in the ſhade are very pale. They are very ſweet, eſpecially in the evening. There are very ſmall, whitiſh blunt bodies at the baſe of the ſtyle, which are ſuppoſed to be the nectaries. Berries roundiſh, red, diſtinct, having the remains of the calyx adhering to them, and containing ſeveral ſeeds, of a yellowiſh brown colour, round on one ſide, and flatiſh on the other.

Native of moiſt parts of Europe in woods and hedges, alſo in many parts of the Chineſe empire. With us it flowers from the end of may to july.

The early writers attribute virtues to this ſhrub, which are now quite given up: but the beauty and exquiſite fragrance of the flower ſtill give it a place in our ornamental plantations. In climbing it turns from eaſt to weſt, with moſt of our other Engliſh climbers; and in common with them it bears clipping and pruning well; for in a ſtate of nature, thoſe plants that cannot aſcend without the aſſiſtance of others, are often liable to loſe large branches, they have therefore a proportional vigour of growth to reſtore accidental damages. This ſhrub is ſubject, when placed near buildings, to be diſfigured and injured by Aphides, vulgarly called blights: theſe inſects were formerly ſuppoſed to be brought by the eaſt wind, and conſequently the miſchief was looked upon as inevitable; but obſervation has corrected that error; their hiſtory is well known, but no effectual remedy againſt them is as yet diſcovered. Theſe inſects are not very numerous in ſpring, but as the ſummer advances they increaſe in a ſurpriſing degree: their firſt attacks therefore ſhould be watched, and the branches they firſt appear on cut off and deſtroyed, for when they have once gained ground, they are defended by their numbers. Small plants may be cleared of them by tobacco duſt or Spaniſh ſnuff, but this is not practicable for large trees. The leaves are likewiſe liable to be curled up by a ſmall caterpillar, which produces a beautiful little moth, *Phalæna tortrix*. In the evening ſome ſpecies of Sphinges or Hawk-Moths are frequently obſerved to hover over the bloſſoms, and with their long tongues to extract the honey from the very bottom of the flowers[1]. A conſiderable quantity of nectareous juice may ſometimes be diſcerned in the tube. Inſects that are too large to penetrate into the narrow part of the tube, and have not a long tongue, like the Sphinges, to reach the juice, let it out, by making a puncture towards the bottom, and thus tapping the liquor. The reſources of animals in procuring their food are innumerable.]

β. The late-red Honeyſuckle produces a greater quantity of flowers together than either the Italian or Dutch Honeyſuckle, ſo that it makes a finer appearance than either of them during the time of flowering.

It has not been ſo long an inhabitant of the Engliſh gardens as the Dutch Honeyſuckle, for about the year 1715 it was eſteemed a great curioſity; when it was called the *Flemiſh Honeyſuckle*, and was probably brought over by the Flemiſh floriſts, who at that time came over annually with flowers and plants for ſale[4].

7. The plants of Dutch Honeyſuckle may be trained with ſtems, and formed into heads, which the wild ſort cannot, the branches being too weak and trailing for this purpoſe. The branches of this are ſmooth, of a purpliſh colour, garniſhed with oblong oval leaves three inches long, and an inch and three quarters broad, of a lucid green on their upper ſide, but pale on their under, having very ſhort foot-ſtalks; they are placed by pairs, but are not joined at their baſe. The flowers are produced in bunches at the end of the branches, each flower ariſing out of a ſcaly cover, which cover, after the flowers fade, forms an oval head, whoſe ſcales lie over each other like thoſe of fiſh. The flowers are of a reddiſh colour on their outſide, and yellowiſh within, of a very agreeable odour. This ſort flowers in june, july, and auguſt. There are two varieties of it, one is called the long blowing, and the other the late red Honeyſuckle. ß.

[The ſtems are ſtronger, the leaves larger, the flowers and heads of berries larger, and the corollas redder than in our Woodbind.

δ. This has ſimple leaves, cut like the Oak, and ſmooth. Found firſt near Oxford by Mr. Jenner, and afterwards by Mr. Knowlton, in the way from Hitchin to Wembly[5]. In Sir John Woodhouſe's woods Norfolk, by Mr. Woodward[6].

There is alſo a variety with variegated leaves.

[1] Curtis. [2] Mill. ic. [3] Ray ſyn.
[4] Hort. kew. [5] Ibid [6] Wither. arr.

In Engliſh this ſhrub is Woodbinde, Honeyſuckle, Suckling and Caprifoly.

Shakſpeare ſeems to have diſtinguiſhed the Honeyſuckle from the Woodbine, or Woodbine,

" So doth the Woodbine, the ſweet Honeyſuckle
" Gently entwiſt ——"

Milton appears to have miſtaken it, when he calls it the Eglantine, which is the Sweet Briar.

" Through the Sweet Briar or the Vine,
" Or the twiſted Eglantine."

Shakſpeare clearly diſtinguiſhes the Woodbine from the Eglantine.

" I know a bank whereon the wild Thyme blows,
" Where Ox-lip and the nodding Violet grows,
" Quite-canopied with luſcious Woodbine,
" With ſweet Muſk-roſes and with Eglantine[1]."

The ſame Poet alludes to the uſe of this ramping ſhrub for forming Arbours.

" And bid her ſteal into the pleached bower
" Where Honeyſuckles ripened by the ſun,
" Forbid the ſun to enter"
" ——— Beatrice who e'en now
" Is couched in the Woodbine coverture[2]."

This ſhrub in German is *Specklilie, Geiſslilie, Zaungilgen, Waldgilgen, Baumlilie, Lilie unter den Dornen, Lilienfrucht, Deutſche Geiſsblatt, Deutſche je langer je lieber, Jericheroſen, Georgenroſen, Klein Gilgen Konfort, Aſtranken, Geflochtungene Lautzern, Zaunling, Zaunkreyſeben, Waldrebe, Waldwinde, Waldmerſier, Wilde Ranken, Mennikenkraut.* In Dutch, *Gruwone Kamperfelie, Maanneſeykruid.* In Daniſh, *Gedeblad, Skovilie, Loberoſe, Labelilie.* In Sweduſh, *Matleſtrad.* In French, *La Chevrefeuille des bois.* In Italian, *Caprifoglio, Madreſelva, Vincibosco, Legabosco, Periclimeno.* In Spaniſh, *Madreſelva, Virginia, Periclimeno.* In Portugueze, *Matriſylva do Norte.*

7. Stem round, twining, hirſute, little branched. Branches oppoſite, round, two-leaved, flowering, very hirſute, ſpreading. All the leaves petioled, oppoſite, ovate, ſharpiſh, quite entire, villoſe, pale beneath, an inch long, the upper ones ſmaller. Petioles deflex-ſpreading, hirſute, a little ſhorter than the branches. Flowers at the ends of the branches, terminating in pairs, ſeſſile. Calyx very ſhort. Corolla tubular, irregular, villoſe, red, an inch long. Stamens equal to the corolla. Anthers incumbent. Style the length of the corolla. Stigma headed, undivided.

Native of Japan[3].

8. Height three or four feet. Leaves ſmall, the younger ones hirſute, quite entire, but plaited a little, ſo as to appear ſerrate. Stipules ovate-lanceolate. Bractes two dry ſcales and three tranſverſe broad leaflets. Peduncles axillary, ſlender, an inch long, oppoſite. Calyx broadiſh. Corolla purple on the outſide, white within, or quite white, pubeſcent. Berries black, a little oblong, containing three, five, and ſometimes ten ſeeds[4].

Native of France, Switzerland, Auſtria, Sileſia, Piedmont. It flowers in march, april and may. Cultivated in 1683[5].

The Japoneſe plant, which Thunberg in Flora Japonica took for this, is ſince made a new ſpecies by him, under the name of L. flexuoſa[6].]

9. This grows about the ſame height with the preceding and fourteenth ſort, and it bears a great reſemblance to them in the branches; but the leaves are heart-ſhaped, and the berries are red, growing ſometimes ſingle, at others double, and frequently there are three joined together; they are about the ſame ſize with the preceding.

The leaves are ſmooth, on ſhort petioles. Involucre lanceolate: involucels obovate. Corolla pale fleſh-colour, the upper lip three-parted, the middle ſegment biſid, the lower ſimple[7].

Profeſſor Pallas deſcribes it more particularly thus.—It is a tree frequently a fathom in height, but commonly leſs, riſing with ſeveral trunks, often thicker than the wriſt, ſpreading, branched very much from the bottom; covered with a brownish-gray, ſmoothiſh bark, cloven longitudinally. Branches knobbed, with a whitiſh-gray ſmooth bark, ſhooting off the epidermis. Shoots oppoſite, ſmooth, bearing both leaves and flowers. Leaves oppoſite, tender, bright glaucous green petioled, cordate-lanceolate, very ſmooth, except the edge which is ciliated with very tender hairs. Stipules none. Above the peduncles a wart-like gland, which on the woody branches is permanent, and puts forth buds. Peduncles from the upper axils of the leaves ſolitary, at a little diſtance from the petioles, oppoſite, making half a right angle with the ſhoot. Involucre of each pair of flowers ſix-leaved, the two outer leaflets almoſt the ſame length with the tube of the corolla and linear, the other four lanceolate, blunt and ſub-croſe at top, reddiſh. Germs inferior, perfectly ſeſſile within the involucre. Calyx above the germ minute, five-toothed, the teeth blunt and croſe, reddiſh. Corollas before they open parallel, club-ſhaped, of a deep roſe colour, when open fleſh-coloured, diverging; tube gibbous at the baſe from the nectary; border ſpreading, irregularly five-cleft, ſegments concave, more coloured on the outſide, the three upper ones leſs deeply cut, broadiſh, upright; the lower ones narrower, cut to the tube, divaricating downwards. When the flower is imperfectly expanded, the three upper ſegments frequently, the two lower ſometimes, are glued together. Stamens from the jaws of the corolla, ſhorter than the border; filaments pubeſcent at the baſe; anthers erect, oblong, four-grooved, yellow. Style a little ſhorter than the filaments, white, hairy, deciduous with the flower. Stigma fungus-ſhaped, green, bent back like a tongue, having commonly a ſimilar lobule but ſmaller at the baſe. Berries diſtinct, ſcarlet, ſucculent, one of them often abortive. Seeds oblong, flat, yellowiſh.

In ſhady groves it varies with a white flower. In autumn the leaves put off their fringes and become quite ſmooth.

Native of Ruſſia, but not beyond 55° of latitude. In the more ſouthern parts it flowers in may, in the eaſtern and in gardens at Peterſburgh in june.] With us it flowers in april, and the fruit is ripe in july. [It is frequented by the Meloe veſicatoria, and the inſect is collected from this ſhrub for the Apothecaries. The berries are eaten by the common people, though they are naſeouſly bitter, and are apt to purge. The flowers have hardly any ſmell; the leaves are bitterſh. The wood is very hard and ſolid, of a yellowiſh gray colour, beautifully veined, and uſed to make walking ſticks and the handles of tools[8].

Cultivated in 1752, by Mr. Miller[9], to whom the ſeeds were ſent from the Imperial garden at Peterſburgh, to which they were conveyed from Tartary.

10. Fly Honeyſuckle riſes with a ſtrong woody ſtalk ſix or eight feet high, covered with a whitiſh bark, dividing into many branches. Leaves ovate, oppoſite, entire and covered with a ſhort hairy down. The flowers come out on each ſide of the branches oppoſite, on ſlender peduncles, each ſuſtaining two white flowers ſtanding erect. The three lower legments of the corolla are narrow and reflex, the other two are broader and upright.

[Leaves oppoſite, three pairs on each branch, rather ſoft, and like cloth to the touch. Peduncles oppoſite, axillary. Corolla yellow, upper lip four-cleft, lower linear, entire. Filaments woolly[10]. The corolla with us is uſually a dirty white, but it is often yellowiſh, or doll purple on the outſide, where it is alſo pubeſcent.

Berry inferior, ſpherical, crowned with the rudiment of the calyx, (red or black, full of a dark purple watery pulp), ſubtranſparent, one-celled. Seeds ſix to twelve, placed without order or in a ring, ſubcartilaginous, hard, compreſſed a little or angular, red[11]. Scopoli and Adanſon ſay, that the berries have three cells, with two ſeeds in each.] Mr. Miller ſays that

[1] Midſ. night's dream. a. 4. ſc. 1. [2] A. 2. ſc. 4.
[3] Much ado, a. 3. ſc. 1. [4] Thunberg.
[5] Linn. fyſt. from Hall. enumd. and Krocker.
[6] Bert. kew. from Gmelin's hort. 27. n. 2. [7] Lin. tranſ. 2. 330.
[8] Linn. ſpec. [9] Flora Roſſica. [10] Hort. kew.
[11] Withering. [12] Gaertner.

they

they are red and clammy, joined at their base, and ripe in the beginning of september.

[Linnæus says, that this shrub makes excellent hedges in a dry soil; that the clear parts between the joints of the shoots are used in Sweden for tobacco-pipes, and that the wood, being extremely hard, makes teeth for rakes, &c. Gmelin informs us that the Russians prepare an empyreumatic oil per descensum from the wood, which they recommend for cold tumours and chronical pains. Animals seldom touch the leaves. Birds eat the berries only in hard weather. They are reputed purgative and emetic.

Native of the North of Europe, and even of the South of France, Italy, and Hungary. Common in Russia, especially the more northern parts, and in Siberia as far as the river Jenisea. Also in Kamtschatka, with black berries: and in Cochinchina, according to Loureiro. According to Withering, it is a native of England. It appears in all our plantations of shrubs, and was cultivated, according to Sutherland, in 1683[1]. It flowers in may.]

11. This seldom rises more than three or four feet high, dividing into several spreading irregular branches. The flowers come out from the side of these on slender peduncles, each sustaining two white flowers, which are cut into five segments almost to the bottom.

[It differs from the preceding in having regular corollas, divaricated branches, and smooth leaves[2].

Native of the Pyrenean mountains and Siberia.—Cultivated in 1739, by Mr. Miller[3], who received a plant of it from the Duke D'Ayen's garden at St. Germain's. He says that it grows also naturally in Canada; and that it flowers in april.

12. This has a short thick woody stem, which divides into many strong woody branches growing erect. Leaves petioled, entire, dark green above but pale underneath. Flowers upon very long slender peduncles, which come out opposite on each side of the branches, at the base of the leaves; they are red on the outside, but pale within, shaped like those of the Fly Honeysuckle, but a little larger, and standing erect. They appear at the end of april, and are commonly succeeded by two ovate red berries, joined at the base, and having two punctures. They ripen at the beginning of august. Sometimes there is but one berry, which is frequently as large as a Kentish Cherry.

[The berry is thus described by Gærtner. It is on a long peduncle, ovate, red, composed of two berries, each of which is most manifestly three-celled: cells clothed with their proper membrane, and separate from the seeds all round, but sometimes obliterated when ripe. Seeds in each cell regularly two, and therefore twelve in the whole; but no more than two or three of them come to maturity, and these are large, subovate, thick, very smooth, pale straw-colour, on one side convex or irregularly gibbous, flat or somewhat concave on the other, shining. Because the berry is three-celled, and the seeds loose and shining, Adanson has separated this from the other species, under the name of *Ibra*, and Gærtner seems inclined to follow him. At this rate, we might form a genus of almost every species.

Linnæus remarks, that the leaves are smooth; the corollas without any spur, and irregular; the two upper segments of the calyx scarcely distinct.—Scopoli, that the leaves are shining underneath; the peduncles striated, a finger's length, with two bractes on them; the filaments hairy at the base, and the anthers of the same colour with the corolla, which according to him is red, but according to Linnæus, yellow. Krocker says it is blood-red.

Native of the South of Europe. Cultivated by Gerarde in 1596[4].

In his Herbal, having figured Lonicera nigra, Xylosteum, caerulea, and tatarica, he says that he has a plant of the *first* kind in his garden, but that he had not as yet seen the rest. Johnson names this *Cherry Honeysuckle*.

13. Height about five feet; trunk covered with a whitish bark; branches spreading, red or hoary-testaceous; branches long, slender, wand-like. Leaves opposite, approximating, on very short petioles, ovate-lanceolate, an inch broad, quite entire except that they are sometimes a little sinuated, nerved, smooth as is the whole shrub. Peduncles axillary, solitary, half an inch long, and therefore much shorter than in *L. nigra*, which this sort most resembles, upright. Germ crowned with two calyxes distinct, having the tube very short, and the teeth longer. Stipules two, setaceous-linear, scarce apparently serrulate, under the germ, and nearly equal to it. Corolla irregular, red; tube funnel-form; lower segment bent down, simple, narrower, oblong; upper broad, four-lobed. Stamens a little longer than the corolla; anthers oblong, from erect incumbent, pale. Style curved in, simple. Fruiting peduncle erect. Berry twin-globular, dark blue, with two lanceolate bractes under it, and the rudiments of the calyxes at top. Seeds in both parts of the berry ten, greenish white, rounded, compressed. The wood is hard, weighty, like ivory, beautifully veined with green; much esteemed for walking sticks, which are sent to Peterburgh.

Native of Caucasus. Called by the Russians *Tegusum* and by the Tartars *Tekut-tuun*, which signifies nine skins; this shrub every year casting its epidermis, which adheres copiously to the twigs.]

14. This seldom rises more than four or five feet high. The branches are slender, covered with a smooth purplish bark. The joints are distant, where leaves come out opposite, and sometimes there are two on each side. The peduncles are very short, each sustaining two white flowers, succeeded by blue berries single and distinct. The flowers appear in may (march or april), and the berries ripen in august.

[Height from three to five feet. Very much and irregularly branched from the bottom. Branches opposite, in the full-grown shrub smooth, fulvous, scariose all over with the rags and tatters of the epidermis. Wood very hard, beautifully veined with gray and pale yellow. At all the branchlets are opposite wooden stipules, transversely subconnate, seeming to arise from the permanent petioles of the fallen leaves. On the shoots of the year, from the axils of the leaves sharp buds spring, which the next year form new branchlets. The younger branchlets, especially when luxuriant, are ferruginous, and extremely hirsute with clustered hoary hairs. Leaves opposite, on short pubescent petioles, ovate or ovate-oblong, pubescent underneath, but becoming smooth with age. Peduncles axillary, solitary, nodding, smooth, two-flowered, and sometimes though seldom three-flowered. Germ subglobular, smooth, crowned with the calyxes which are very shortly toothletted, and accompanied by two setaceous hairy stipules, twice as long as the germ. Corollas pale (Linnæus says, yellow), large, funnel-form, with a hairy tube, gibbous at the base on the outside with the nectary, border smooth, with ovate segments. When there is a third flower it has a slender tube and no nectary. Stamens shorter than the border of the corolla, with oblong erect pale anthers. Style simple, a little longer than the segments of the corolla, with a simple capitate stigma. Berries at first subglobular, when ripe oblong, large, dark blue, with a bitterish purple juice, and six or eight small, oblong, acute, yellow seeds. The purple juice stains paper of a strong colour, and might perhaps be useful in dyeing[5].

Native of Switzerland, Austria, Siberia as far as Kamtschatka, and in the islands adjacent to America. —Cultivated here in 1724[6].

15. This is smaller than *L. Xylosteum*, upright, with slender branches, straight, opposite, spreading, with a whitish-gray outer bark. Leaves fewer, opposite, petioled, hoary underneath. Peduncles terminating, between the last pair of leaves, the length of the petioles, bifid, sustaining on each two, four or five sessile flowers. Calyx none, but a rim crowning an inferior, cylindric striated germ. Corolla yellowish white, equal, small, bell-shaped, five-toothed. Sta-

[1] Hort. ken. from hort. edinb. 77. n. 1. [2] Linn. spec. [3] Hort. ken. [4] Ibid. [5] Pallas. [6] Ibid. [7] Horr. ken. from Farber's catalogue, in Mill. dict.

mens

mens the length of the corolla, with large twin anthers. Germ within the flower, prominent with a very short umbilicus, and a truncated stigma. Berry globular, large, ovate-depressed, convex on the outside, containing five, six or seven seeds. Not only in the desert of the Mongols in the Russian Empire, but in Dauria[a].]

16. Height about four feet, sending out many slender branches. Leaves ovate, hairy, opposite, on very short petioles. The flowers are produced in whorls round the stalk; they are of an herbaceous colour, and appear in august. The fruit, which is hollow, and shaped like a potage pot, ripens in the winter. [The corollas are regular and bell-shaped. The fruit fleshy, globular, the form and size of the flowers of Arbutus, four-celled, containing cartilaginous roundish seeds. The flowers and fruits are axillary, and being in close clusters, Dillenius gave this shrub the name of *Symphoricarpos*. The leaves grow in ten pairs or more on a stalk, like pinnate leaves; they are somewhat glaucous underneath, being covered with a fine down. The fructification is not unlike that of Cuscuta in appearance, but not in structure[b].

Native of Virginia and Carolina. Cultivated in 1730. It flowers in august and september[b].

17. Branches round, smooth, compressed at top, somewhat villose, dilated a little under the leaves, and knobbed where they have fallen. Leaves opposite, on short petioles, subcoriaceous, three inches long, smooth, except that they have a few hairs on the midrib, nerved, veinless, abundance of small hairs in the axils of the leaves. Heads of flowers on short pedunclés at the ends of the branchlets, fix together, sessile, supported on each side by a petioled leaf, and surrounded by a very short, ovate, acute, villose, many-leaved involucre. Calyx rough-haired; segments linear-lanceolate, shorter than the corolla: which is villose on the outside, ash-coloured, the form of Comfrey. Capsule two-celled, crowned with the permanent calyx scarcely of this genus. Found by Sparrman at the Cape of Good Hope, where the Dutch call it *Buffelbourn*[c].

18. This is a low shrub, seldom rising more than three feet high. The stalks are slender and woody, and have a reddish-coloured bark. Leaves oblong, pointed, slightly serrate, opposite. Flowers small, pale yellow, two or three on each division of the raceme. Berries oval, black, four-celled, with one hard seed in each cell. In England they are rarely formed, and never come to maturity.

The roots creep far under ground, and send out many stems: many of these which come up in the spring produce flowers the same year, so that there is generally a succession of them from may to september; the shoots of the former year flowering early, the side branches soon following, and then the young shoots. It is a native of North America, and was first brought to Europe from Acadie by Mons. Dierville a French surgeon, whence Tournefort gave it the name of *Dierzilla*[a].—Mr. Miller cultivated it in 1739[d].

19. Native of Peru.

PROPAGATION AND CULTURE.

All the sorts of Honeysuckle are propagated either by layers or cuttings. When by layers, the young shoots only should be chosen. They should be layed in the autumn, and by the following autumn they will have taken root, when they should be cut off from the plants, and either planted where they are to remain, or into a nursery to be trained up, either for standards, which must be done by fixing down stakes to the stem of each plant, to which their principal stalk should be fastened, and all the other cut off; the principal stalk must be trained to the intended height of the stem, then it should be shortened to force out lateral branches, and these should be again stopped to prevent their growing too long; by the constant repeating this as the shoots are produced, they may be formed into a sort of standard; but if any regard is had to their flowering, they cannot be formed into regular heads, for by constantly shortening their branches, the flower-buds will be cut off, so that few flowers can be expected; and as it is an unnatural form for these trees, so there should be but few of them reduced to it, for when they are planted near other bushes, in whose branches the shoots of the Honeysuckles may run and mix, they will flower much better, and have a finer appearance than when they are more regularly trained; therefore, when the plants are in the nursery, if two or three of the principal shoots are trained up to the stakes, and the others are entirely cut off, they will be fit to transplant the following autumn, to the places where they are to remain; for though the roots may be transplanted of a greater age, yet they do not thrive so well as when they are removed while they are young. When these plants are propagated by cuttings, they should be planted in september, as soon as the ground is moistened by rain. The cuttings should have four joints, three of which should be buried in the ground, and the fourth above the surface, from which the shoots should be produced. These may be planted in rows, at about a foot distance row from row, and four inches asunder in the rows, treading the earth close to them; and as the Evergreen and late red Honeysuckles are a little more tender than the other sorts, if the ground between the rows where these are planted, is covered with tanner's bark, or other mulch to keep out the frost in winter, and the drying winds of the spring, it will be of great advantage to the cuttings; and if the cuttings of these sorts have a small piece of the two years wood at their bottom, there will be no hazard of their taking root. The plants which are raised from cuttings, are preferable to those which are propagated by layers, as they have generally better roots.

These plants will grow in almost any soil or situation, except the fourth, which will not thrive where it is too much exposed to the cold in winter: it thrives best in a soft sandy loam, and will retain its leaves in greater verdure in such ground than if planted in a dry gravelly soil, where in warm dry seasons the leaves often shrink, and hang in a very disagreeable manner; nor will those sorts which naturally flower late in the autumn, continue so long in beauty on a dry ground, unless the season should prove moist and cold, as those in a gentle loam, not too stiff or wet.

There are few sorts of shrubs which deserve cultivation better than most of these, for their flowers are very beautiful, and perfume the air to a great distance with their odour, especially in the mornings and evenings, and in cloudy weather, when the sun does not exhale their odour, and raise it too high to be perceptible; so that in all retired walks, there cannot be too many of these intermixed with the other shrubs. I have seen these plants intermixed in hedges planted either with Alder or Laurel, where the branches have been artfully trained between those of the hedge; from which the flowers have appeared dispersed from the bottom of the hedge to the top, and being intermixed with the strong green leaves of the plants which principally compose the hedge, they have made a fine appearance; but the best sorts for this purpose, are the Evergreen and long-blowing Honeysuckles, because their flowers continue in succession much longer than the others.

These shrubs may also be propagated by seeds, but unless they are sown in the autumn soon after they are ripe, the plants will not come up the first year.

3. The Trumpet-Honeysuckle is usually planted against walls or pales, to which their branches are trained; for they are too weak and rambling to be reduced to heads, and are liable to be killed in severe winters. This sort therefore should have a warm aspect, where it will begin to flower at the end of june, and there will be a succession of flowers till the autumn. [It may, however, be trained like the other Honeysuckles, and will flower among other shrubs, in the south border of a plantation in a warm soil, till a winter more than ordinarily severe injures or kills it.] It is propagated by laying down the young branches, which will easily take root, and may be afterwards treated like the common Honeysuckles.

[Mr.

[a] Pallas. [b] Dillenius. [c] Hort. kew.
[d] Vahl and Linn. suppl. [e] Mill. fig.
[f] Hort. kew.

[Mr. Miller treats of the above, under the old name Periclymenum: and of the upright Honeysuckles under Lonicera.]

These not being so beautiful, a few only should be admitted in plantations. They are all very hardy, and will thrive in a cold situation better than in a warm one; they love a moist soil, and will produce a greater quantity of fruit in that than in a dry one.

They may be increased either by seeds or cuttings. The seeds commonly lie in the ground a year before they vegetate. If they are sown in autumn, however, many will grow the following spring. The cuttings should be planted in autumn in a shady border, where they will put out roots the following spring, and in the autumn they may be removed into a nursery, to grow two years to get strength, after which transplant them where they are to remain.

18. L. Diervilla, [which Mr. Miller, following Tournefort, separates under the name of Diervilla] multiplies greatly by its spreading roots, sending up abundance of suckers. It loves a moist soil and shady situation, where cold will never injure it.

[Lonicera. See *Chiococca*, *Hallevia*, *Loranthus*, *Mitchella*, *Spigelia*, *Triosteum*.

Luxaree. See *Borassus*.

Looking Glass Plant. See *Heritiera*.

———, Venus's. See *Campanula*.

Loosa. See *Loasa*.

Loose-Strife. See *Anagallis* and *Lysimachia*.

———, Coddled. See *Epilobium*.

———, Spiked. See *Lythrum*.

Lopeanthus. See *Hyssopus*.]

LOPPING. It is very observable, that most old trees are hollow within, which does not proceed from the nature of the trees, but is the fault of those who have the management of them, who suffer the tops to grow large before they lop them, as the Ash, Elm, Hornbeam, &c. and persuade themselves that they may have the more great wood: but, in the mean time, do not consider that the cutting off great tops, or branches, endangers the life of a tree, or, at best, wounds it so, that many trees yearly decay more in their bodies, than the yearly tops come to; and at the same time that they furnish themselves with more great wood, they do it at the loss of the owner. And, indeed, though the Hornbeam and Elm will bear great tops when the body is little more than a shell, yet the Ash, if it comes to take wet at the head, very rarely bears more top after the body of the tree decays; therefore, if once these trees decay much in the middle, they will be worth little but for the fire, so that if you find a timber tree decay, it should be cut down in time, that the timber be not lost.

The Lopping of young trees, that is, at ten or twelve years old at most, will preserve them much longer, and will occasion the shoots to grow more into wood in one year, than they do in old tops at two or three. But when great boughs are ill taken off, it often spoils many a tree, for which reason they should always be spared, unless there is an absolute necessity. When they must be cut off, it should be close and smooth, and not parallel to the horizon, and cover the wound with loam and horse-dung mixed, to prevent the wet from entering the body of the tree.

When trees are at their full growth, there are several signs of their decay, as, the withering or dying of many of their top branches; or if the wet enters at any knot, or they are any-wise hollow, or discoloured, if they make but poor shoots, or if woodpeckers make any holes in them.

This Lopping of trees is only to be understood for pollard trees, because nothing is more injurious to the growth of timber trees, than that of Lopping or cutting off great branches from them; whoever will be at the trouble of trying the experiment upon two trees of equal age and size, growing near each other, to lop or cut off the side branches from one of them, and suffer all the branches to grow upon the other, will, in a few years, find the latter to exceed the other in growth every way, and this will not decay near so soon.

All sorts of resinous trees, or such as abound with a milky juice, should be lopped very sparingly, for they are subject to decay when often cut. The best season for Lopping these trees, is soon after Bartholomew tide, at which time they seldom bleed much, and the wound is commonly healed over before the cold weather comes on.

LORANTHUS. (*From λορος a strap, and ανθος, a flower; the corolla being cut into straps.*)

Lin. gen. n. 443. *Reich. n.* 478. *Siberb. n.* 600. *Vaill. act. par.* 1720. *Jacqu. amer.* 97.

Lonicera. *Plum.* 37. *Gertn. t.* 27.

Class. 6. 1. Hexandria Monogynia.

Nat. order of *Aggregatæ*. *Caprifolia*. Juss.

GENERIC CHARACTER.

Cal. *Perianth of the fruit* inferior: margin entire, concave—*of the flower* superior, or the margin entire, concave.

Cor. *Petals* six, oblong, revolute, equal.

Stam. *Filaments* six, awl-shaped, fattened to the bases of the petals, the length of the corolla. *Anthers* oblong.

Pist. *Germ* oblong, between the two calyxes, or inferior. *Style* simple, the length of the stamens. *Stigma* blunt.

Peric. *Berry* oblong, one-celled.

Seed oblong.

Obs. L. europæus *has dioecous flowers*; *and* L. pentandrus *has half-five-cleft five-stamened flowers*.

ESSENTIAL CHARACTER.

Germ inferior. *Cal.* none. *Cor.* six-cleft, revolute. *Stami.* at the tips of the petals. *Berry* one-seeded.

SPECIES.

[1. Loranthus tetrapetalus.
Lin. fyst. 343. *suppl.* 211. *Forst. flor. austral. n.* 156.
Peduncles one-flowered, subsolitary, leaves ovate, obtuse, subsessile.

2. Loranthus Scurrula.
Lin. spec. 472. *Reich.* 2. 107.
Scurrula. *Lin. spec. ed.* 1. 107.
Viscum vitice innascens. *Cornell. linn.* 3. *n.* 36. *Raii hist.* 3. *app.* 3. *n.* 36. *Pet. gaz. t.* 63. *f.* 8.
Peduncles one-flowered, heaped, leaves obovate.

3. Loranthus uniflorus.
Lin. spec. 1672. *fyst.* 343. *Reich.* 2. 108. *Jacqu. amer.* 98. *t.* 69. *pict.* 51. *t.* 100.
Racemes quite simple.

4. Loranthus glaucus.
Townb. prodr. cap. 58.
Peduncles axillary, one-flowered, leaves ovate, glaucous.

5. Loranthus europæus.
Lin. spec. 1672. *fyst.* 343. *Reich.* 2. 108. *Jacqu. vind.* 230. *austr. t.* 30. *Pleuk. ic.* 1. 248.
Racemes simple, terminating, flowers dioecous.

6. Loranthus americanus.
Lin. spec. 472. *fyst.* 343. *Reich.* 2. 108. *amoen.* 5. 396. *Swartz. obs.* 132. *Jacqu. amer.* 97. *t.* 67. *pict.* 50. *t.* 98. *Vaill. act.* 1722. *p.* 274. *Plum. gen.* 17. *ic.* 166. *f.* 1. (Lonicera).
Racemes somewhat branched, eyned, flowers nodding, leaves ovate, differm.

7. Loranthus emarginatus.
Swartz. prodr. 58.
Racemes axillary, simple, leaves wedge-shaped, ovate, emarginate.

8. Loranthus occidentalis.
Lin. spec. 472. *Reich.* 2. 108. *amoen.* 5. 396. *n.* 38. *Loefl. it.* 187. *Swartz. obs.* 133.
Scurrula 2. *Brown. jam.* 197.
Viscum latioribus & subrotundis foliis, flore purpureo. *Sloan. jam.* 2. 92. *t.* 200. *f.* 2.
Racemes simple, flowers irregular.

9. Loranthus loniceroides.
Lin. spec. 473. *fyst.* 343. *Reich.* 2. 109. *spec. ed.* 1. 175. *fl. zeyl. n.* 83. (Lonicera). *Pluk. phyt. t.* 213. *f.* 5. (Periclymenum). *Rheed. mal.* 1. 55. *t.* 29. (Iru Canni).
Flowers aggregate-capitate.

10. Loranthus Stelis.
Lin. spec. 473. *Reich.* 2. 109. *Loefl. it.* 87. *Forst. flor. austral. n.* 157.
Racemes trichotomous, peduncles three-cornered, flowers equal.

11. Loranthus parvifolius.
Swartz. prodr. 58.
Pedunculis axillaris, trifidis, pedicels one-flowered, leaves ovate, entire.
12. Loranthus pauciflorus.
Swartz. prodr. 58.
Pedunculis trichotomis, shorter than the leaves, leaves obovate.
13. Loranthus pentandrus.
Lin. fyst. 344. *Reich.* 2. 109. *mant.* 63.
Racemes simple, flowers five-cleft, leaves alternate, petioled.
14. Loranthus falcatus.
Lin. fyst. 344. *fuppl.* 211.
Racemes few-flowered, axillary, leaves linear, blunt, laterally fickled, glaucous.
15. Loranthus fpicatus.
Lin. fyst. 344. *Reich.* 2. 109. *mant.* 63. *Jacqu. amer.* 97. *t.* 68. *pict.* 50. *t.* 99.
Spikes quadrangular.
16. Loranthus cochinenfis.
Lour. cochinch. 195.
Peduncles many-flowered heaped, leaves acute.
17. Loranthus pedunculatus.
Jacqu. amer.
Racemes fimple folitary, flowers in threes, peduncled.
18. Loranthus feffilis.
Jacqu. amer.
Racemes fimple folitary, flowers in threes, feffile.

DESCRIPTIONS, *&c.*

Thefe are moftly parafitical fhrubs: the leaves thickifh, often oppofite, but fometimes alternate. Flowers axillary, fometimes but feldom terminating, corymbed or fpiked, or on one-flowered pedicels; fome five-petalled, five-ftamened; fome one-petalled, the petals being united at the bafe: in L. europæa they are dioecious. According to Jacquin, three alternate anthers, in L. unifiorus, are effete; in L. pedunculatus they have two appendicles at the top, and are often barren. Juffieu fuggefts, that the genus might perhaps be divided, by reftoring the name of Lonicera to fuch fpecies as have fix ftamens, and giving that of Loranthus to thofe which have five [a]. Some of thefe plants were named *Scurrula* by Browne, from *Scurra* a Parafite; on account of their drawing nourifhment from other trees.

1. Leaves oppofite, quite entire. There is a fingle flower on each fide by the leaves, making four at each joint, and fo along the whole ftem. Native of New Zealand [b].

2. Leaves oppofite, petioled, quite entire, fmooth, a little broader on one fide than on the other. Flowers axillary, three to fix, each on its proper pedicel. Germs attenuated below. Native of China [c], and the Philippine iflands.

3. Leaves fuboval, blunt, with a fmall point, entire, very fmooth, coriaceous, petioled, oppofite, frequently irregular. Racemes axillary and terminating, folitary; pedicels one-flowered. Flowers fmall, inodorous. Calyx of the fruit trifid; fegments ovate, concave, acute, upright. Petals purple, blunt, fpreading very much, of the fame length with the germ. Filaments half the length of the petals, three of them fomewhat longer, commonly without anthers, but inftead of them a colourlefs body like an anther, but without pollen. Berry cylindrical, flatted on both fides, with a dark rind, and a gluminous milky pulp. Native of St. Domingo, in woods, flowering in november and december [d].

4. Native of the Cape of Good Hope.

5. This has the ftature of Vifcum album. Calyx obfoletely fix-toothed. Petals and ftamens fix. Germ inferior. Flowers male and female on feparate plants. Berry yellow, containing one feed. Native of Auftria, parafitical on oaks [e]: alfo of Siberia [f].

6. Branches fubdivided, leafy, fmooth, pale green, brittle. Leaves petioled, oppofite, entire, fubcoriaceous, nerved, pale. Petioles fhort, compreffed, fmooth. Racemes fubdivided, terminating, with three-cornered branchlets; the laft pedicels trifid, one-flowered. Flowers red. Calyx double: lower undivided, pitcher-fhaped, fmall: upper, margin of the germ, entire. Petals fix, very long, contiguous below, fpreading above, revolute; before they are unfolded forming a ftiglitly incurved corolla. Filaments fattened to the petals above the middle, filiform, purple. Anthers oblong, vertical, yellow. Germ ovate. Style filiform, the length of the corolla. Stigma blunt, pubefcent. Berry ovate, one-feeded [g].

It ramps over the higheft trees in Jamaica, Martinico, &c. efpecially the Coccoloba grandifolia, with the root adhering firmly to the bark like Miffelco. If a large bough, on which it grows, be cut off, the next day it withers and periflhes [h].

7. Native of Hifpaniola.

8. Branches divaricating, fubdivided, looſe, round, rugged, brittle. Leaves large, on fhort petioles, oppofite, ovate-rounded, margined, fpreading, nerved above, fmooth, fucculent, pale green. Racemes axillary, folitary, erect, fhorter than the leaves, roundifh, on very fhort thick peduncles; flowers feffile, minute, dark purple. Calyx fuperior, minute, undivided. Petals almoft connate at the bafe; three a little fhorter, upright, acute. Filaments fhorter than the petals, and placed on the middle of them. Anthers three, ovate, yellow, fertile; three barren, hollowed on the fides for the fertile ones. Germ inferior, roundifh, covered with the calyx, and margined. Style the length of the petals. Stigma fimple, blunt. Berry roundifh, viſcid, one-feeded [i].

Native of South America and the Weſt-Indian iflands. Carthagena, Jamaica, &c. on trees; flowering in april and may.

9. This has long flexuoſe branches. Leaves oppofite, ovate-lanceolate, thick, petioled, quite entire, fmooth, veined, bluntifh. The top of the peduncle bears an involucre with five lanceolate leaves, within which are three, four or five feffile flowers, tubular, with a five-cleft mouth, and lanceolate fegments. Stamens five, with the filaments inferted into the fegments of the petal. Style capitate. Berry under the calyx [k]. Native of the Eaft Indies.

Gertner has a fpecies of this genus, which he names *Lonicera zeylanica*. He fays, that it is not Loranthus loniceroides, which has the flowers feffile in a peduncled umbel; and that it does not agree with Loranthus americanus, which has fpherical berries difpofed in a cyme; whereas in this the berries are oval in a much lengthened raceme. The corolla is fix-cleft, and it has fix ftamens. The embryo is inverted, and has only one cotyledon, which is almoft as long as the albumen, fubfufiform, folid, and without any veftige of a diviſion. In the cavity of the albumen of old berries there is often a white pellucid cryſtallized reſin like Camphor [l].

10. Native of South America, and the Society iſles [m].

11, 12. Natives of Jamaica [n].

13. Branches dilated at the leaves, which are of the ſame form with thoſe of the Bay, with fcarcely any nerves. Racemes axillary, folitary or in pairs, a little longer than the petioles. Corollas half-five-cleft. Stamens five, from the middle of the fegments of the corolla; filaments fhorter than the anthers, which are erect, and the length of the corolla. Native of the Eaft-Indies [o].

14. Leaves fickle-fhaped, with the edge verging downwards, quite entire, veinleſs, hoary. Flowers fickle-fhaped, orange. Found by Koenig, growing on trees about Madras [p].

15. This branching fhrubby plant grows on other fhrubs. The root divides in two, furrounding the branch to which it faftens itſelf, and then uniting again; it there puts out fibres on every ſide, and runs along the branch frequently to a great length. Branches woody, diffuſed, brittle. Leaves quite entire, blunt, ſmooth, coriaceous, fat to the touch, petioled, oppo-

[a] Juſſieu gen. [b] Linn. ſuppl. [c] Linn. ſpec.
[d] Jacquin. [e] Linn. ſpec. [f] Pallas, it. 1. 172.
[g] Swartz. [h] Jacquin. [i] Swartz.
[k] Linn. mſyl. [l] Fruſt. 1. 132.
[m] Linn. and Forſt. [n] Swartz. [o] Linn. mant.
[p] Linn. ſuppl.

fite,

fite, with afcending veins or nerves almoft all fpringing from the bafe; their figure varies, being ovate, oval, obovate or roundifh. Spikes oblong, thick, fquare, four-grooved, axillary, folitary, not exceeding the leaves. Flowers fmall, inodorous, red, very many, deeply feffile in four longitudinal rows. In thefe the calyx of the fruit is only a little fcale, with an irregular mouth. Petals half erect at the bafe, refemble a one-petalled corolla, at top they fpread very much equally, and are double the length of the ftamens. Germ fmall, immerfed in the fpike. Berry ovate-oblong, green with a red tip, and containing a milky glutinous juice. Native of Carthagena in New Spain, in woods; flowering in april and may *.

Swartz doubts whether the L. fpicatus of Jacquin juft defcribed be different from L. occidentalis of Linnæus (n. 8.); the leaves, manner of flowering and flowers being fcarcely different, and Sloane's figure not unlike Jacquin's *.

Juffieu fufpects that the *Glutago* of Commerfon may be the fame with L. fpicatus of Linnæus. He defcribes it as a parafitical fhrub; the calyx fcarcely five-toothed, with two appendicles at the bafe; corolla firft tubular, then cloven at the fide, and expanded into a flat ftrap (thereforе like Scævola) five-cleft at top, five-ftamened, with the antheriferous fegments revolute; berry glutinous, containing one feed *.

16. Stem woody, twifted, three, very much branched. Leaves ovate-lanceolate, quite entire, oppofite, clofe, fmooth, curved inwards, reflex. Flowers herbaceous, axillary. Calyx inferior, three-leaved, very fmall. Corolla fuperior, one-petalled; tube wide, hexagonal; border deeply fix-parted, fegments lanceolate-linear, opening elaftically, revolute. Stamens fix. Style longer than the ftamens; ftigma fpheroidal. Berry between the calyx and corolla, yellowifh red, crowned, containing one, ovate, fix-grooved feed.

Native of Cochinchina, on the branches of trees in gardens *.

17. Root as in fpicatus. Branches fhining, long, reclined. Leaves cordate-ovate, quite entire, with a fhort point, fhining, coriaceous, petioled, oppofite, two inches long, with veins from the midrib. Racemes axillary, fhorter than the leaves, containing about twenty-one flowers; peduncle compreffed, broad; partial peduncles three-flowered; the proper ones one-flowered. Flowers inodorous, fmall; calyx of the fruit ovate, concave, entire; petals white. Filaments half the length of the petals, three of them in alternate order having two roundifh appendicles. It happens frequently that there are no anthers, but cufped upright bodies in their place; and hence the flowers in this fpecies are very frequently abortive.

Native of Carthagena, in woods, efpecially in falt marfhes.

18. This has the habit of the preceding, but the branches as in L. fpicatus. Leaves ovate, an inch and half long. Flowers have no proper peduncles, but are placed on the thickened top of the partial peduncle. All the filaments are always antheriferous. Berries of a dufky greenifh red colour. Native of Carthagena, in woods *.

Lords and Ladies. See *Arum*.

LOTE-TREE. See *Celtis*.

Loti arboris folio. See *Mantingia*.

Loti fimilis. See *Diofpyros*.

Loto affinis. See *Anthyllis*, *Caffia*, *Ebenus*, *Medicago*, *Pforalea*.

Loto fimilis. See *Hedyfarum*.]

LOTUS, (of *Pliny*, *Avene of Theophraftus and Dioſcorides*, *From* λωτὸς, *ſweet*. *Linn*. *Perhaps*, *ſays Veſtus*, *from* λω τὸν, *vehemens vinum*, *melius*, *optatius*. *See Pliny*, *l*. 13. *c*. 17. *and l*. 24. *c*. 2.—Lotos *was a Nymph turned into a tree*, *to avoid the purſuit of Priapus*. Ovid. metam. *l*. 7. &c.)

Lin. gen. n. 897. *Reich. n.* 969. *Schreb. n.* 1212. *Tournef. t.* 227. *Gærtn. t.* 153. *Juſſ.* 356.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

CAL. *Umbel* ſimple.

Perianth one-leafed, tubular, half-five-cleft: *teeth* acute, equal, erect; permanent.

COR. papilionaceous. *Banner* roundifh, bent down; claw oblong, concave. *Wings* roundifh, fhorter than the banner, broad, converging upwards. *Keel* gibbous below, cloſed above, acuminate, afcending, fhort.

STAM. *Filaments* diadelphous (nine and nine-cleft), afcending, with broadifh tips. *Anthers* fmall, fimple.

PIST. *Germ* columnar, oblong. *Style* fimple, afcending. *Stigma* an inflected point.

PER. *Legume* cylindric, ſtiff and ſtraight, ſtuffed; longer than the calyx, many-celled, two-valved.

SEEDS feveral, cylindric.

ESSENTIAL CHARACTER.

Cal. tubular. *Wings* converging longitudinally upwards. *Legume* cylindric, ſtraight.

SPECIES.

* *With few legumes, not forming a bead.*

1. Lotus maritimus. *Sea Bird's-foot Trefoil.*
Lin. ſpec. 1089. *ſyſt.* 690. *Reich.* 3. 564. *Fl. ſuec. n.* 676. *Sowv. monſp.* 188. *Leyſ. bal.* 672. *Krock. ſilef. n.* 1218. *Fl. dan. t.* 800. *Kniph. cent.* 7. *n.* 45. *Barth. ad.* 2. 346. *Ger. prov.* 512. 1. *var.*
L. filiquoſa lutea filiquis pinnatis ſtrictioribus & longioribus. *Raii hiſt.* 967.
L. maritima lutea filiquoſa, folio pingui glabro. *Magn. monſp.* 165. *Tournef. inſt.* 403.
Legumes ſolitary membranaceous, quadrangular, leaves ſmooth, braftes lanceolate.

2. Lotus ſiliquoſus. *Square-podded Bird's-foot Trefoil.*
Lin. ſpec. 1089. *ſyſt.* 691. *Reich.* 3. 564. *Gærtn. fruct.* 2. 336. *Crantz. auſtr.* 399. *Jacqu. auſtr.* 4. 32. *t.* 361. *Pollich pal. n.* 710. *Hall. helv. n.* 386. *Krock. ſilef. n.* 1217. *Ger. prov.* 512. *n.* 1. *Villars dauph.* 3. 413. *D'Aſſe arag. n.* 731.
Tetragonolobus Scandalida. *Scop. carn. n.* 938.
L. tetragonolobus. *Riv. tetr. t.* 79.
L. pratenſis. *Mill. dict. n.* 10.—ſiliquoſus luteus. *Baub. pin.* 332.—major & durior. *Tournef. inſt.* 403. *Segu. ver.* 2. 90.
L. ſiliquoſa lutea monſpelienſis. *Baub. hiſt.* 3. 357. *Raii hiſt.* 967.
L. pratenſis monſpelienſium. *Park. theat.* 1100. 5. *t.* 1102. *f.* 5.—ſiliquoſus. *Cluſ. hiſt.* 1. 244.
L. trifolia corniculata. *Ger.* 1028. 1. *emac.* 1198. 1.
L. trif. prat. ſiliq. monſp. *Lob. ic.* 2. 42.
Trifolium ſiliquoſum. *Tabern. hiſt.* 904.
Legumes ſolitary, membranaceous-quadrangular, ſtems procumbent, leaves pubeſcent underneath.

3. Lotus tetragonolobus. *Winged Bird's-foot Trefoil.*
Lin. ſpec. 1089. *Reich.* 3. 564. *hort. upſ.* 220. *cliff.* 372. *Kniph. cent.* 5. *n.* 53. *Curt. magaz.* 151.
L. ruber. ſiliqua anguloſa. *Baub. pin.* 332.
L. pulcherrima tetragonolobus. *Camer. hort.* 91. *t.* 26.
L. ſiliquoſa flore fuſco tetr. *Baub. hiſt. Raii hiſt.* 966.
L. ſil. quadrata. *Ger. emac.* 1198. *f.* 3.
L. quadripinnatis ſiliquis. *Park. theat.* 1101. *f.* 2.
L. *Roſſ. eſſ. aſt.* 13. *t.* 4. *f.* 3. *Riv. tetr. t.* 80.
L. ſiliquoſus rubro flore. *Cluſ. pann. & hiſt.*
Piſum quadratum. *Park. parad.* 338.
Legumes ſolitary, membranaceous-quadrangular, braftes ovate.

4. Lotus conjugatus. *Twin-podded Bird's-foot Trefoil.*
Lin. ſpec. 1089. *Reich.* 3. 565.
L. luteus ſiliqua anguloſa. *Boerh. lugdb.* 2. 38.
Legumes conjugate membranaceous-quadrangular, braftes oblong-ovate.

[5. Lotus tetraphyllus. *Four-leaved Bird's-foot Trefoil.*
Lin. ſyſt. 691. *Reich.* 3. 565.
Legumes ſolitary, leaves ternate, obcordate-wedge-ſhaped, ſtipule ſolitary ſimilar, bractes one-leafed.]

6. Lotus edulis. *Eſculent Bird's-foot Trefoil.*
Lin. ſpec. 1090. *ſyſt.* 691. *Reich.* 3. 565. *hort. cliff.* 370.
L. pentaphyllos ſiliqua cornuta. *Baub. pin.* 332.

L. edulis

* Jacquin. † Obſ. ‡ Gen. 212.
§ Loureiro. ¶ Jacquin.

L. edulis cretica. *Raii hiſt.* 967. *Park. theat.* 1100. 1.

L. oligoceratos cret. lutea, fil. binis curvis propendentibus. *Mor. hiſt.* 2. 176. *ſ.* 2. *t.* 18. *f.* 5.

Trifolium corniculatum creticum. *Alp. exot. t.* 268.

—*f.* L. hieraz. edulis ſiliquoſa. *Bauh. hiſt.* 2. 365.

Legumes ſubſolitary globous curved in.

7. Lotus peregrinus. *Flat-podded Bird's-foot Trefoil. Lin. ſpec.* 1090. *Reich.* 3. 565. *hort. cliff.* 372. *Sauv. monſp.* 188.

L. villoſa. *Forſk. egypt.* 71. *n.* 386.

L. ſiliquis geminis, peregrina. *Boerh. lugdb.* 2. 38.

Legumes ſubbinate linear compreſſed nodding.

[8. Lotus anguſtiſſimus. *Narrow-podded Bird's-foot Trefoil.*

Lin. ſpec. 1090. *Reich.* 3. 566. *hort. cliff.* 372. *Sauv. monſp.* 188. *Ger. prov.* 513. *n.* 2. *Gaertn. fruct.* 2. 337.

L. pentaphyllos minor hirſutus, ſiliqua anguſtiſſima. *Baub. pin.* 332. *Raii hiſt.* 968. *Garid.* 293.

L. corniculata, ſiliquis ſingularibus ſ. binis, tenuibus. *Baub. hiſt.* 2. 356.

L. cornic. minor piloſus. *Park. theat.* 1103. *n.* 11.

Legumes ſubbinate linear ſtiff upright, ſtem upright, pedunckes alternate.

9. Lotus glaucus. *Glaucous Bird's-foot Trefoil. Ait. hort. kew.* 3. 92.

Legumes ſubbinate cylindrical ſmooth, leaflets ſomewhat wedge-ſhaped ſlightly hoary, ſtipules leaf-form.

10. Lotus arabicus. *Red-flowered Bird's-foot Trefoil. Lin. ſyſt.* 691. *Reich.* 3. 566. *mant.* 104. *Jacqu. hort.* 2. 70. *t.* 155. *Lour. cochinch.* 463. *Kniph. cent.* 8. *n.* 63. *Kniph. cent.* 8. *n.* 63. *Kniph. cent.* 8. *n.* 63

Trifolium album angustifolium, floribus veluti in capitulum congestis. *Bouh. pin.* 329.
Ononis quinata. *Forsk. descr.* 130.
β. Dorycnium herbaceum.
Villars dauph. 3. 417. *t.* 41.
Heads leafleſs, leaves ſeſſile quinate.
[22. Lotus medicaginoides.
Retz. obſ. 2. 23. *n.* 74.
Legumes umbelled beaked, leafleſs obcordate toothleted.
23. Lotus oligoceratos.
Hoſp. inſubr. 14. *t.* 6.
Legumes binate round ſtraight ſtriated villoſe dotted with white.

DESCRIPTIONS, *&c.*

Theſe are moſtly herbaceous plants, more perennial than annual: ſome few woody at bottom, and one arboreous. Leaves ternate, petioled with ſeſſile leaflets, and two large ſtipules, of the ſame form with the leaflets, but diſtinct from the petiole; hence the leaves have been called quinate, though they are properly ſo only in one ſpecies, beſides Dorycnium. Peduncles ſolitary, axillary and terminating; in moſt having one leaf at top, and either few-flowered, or many-flowered in a head or umbel. Corollas moſtly yellow, changing readily to blue. Dorycnium recedes in ſome degree from the other ſpecies: the peduncles are leafleſs and many-flowered, and the leaves digitately five-leaved. Lamark has referred it to Aſpalathus [a].

The name Λωτος or *Lotus* is given by the ancients both to an herb and a tree, each different from the plants contained in this genus. The herb is a ſpecies of Nymphæa [b], and is joined by Homer with Smallage, as forming the green food of Achilles's horſes.

Λωτον τερπομενοι ελεοσελινον τε νεμοντο [c].

The Lotus being ſo abundant in the Nile, and a plant ſo famous in Egypt, may ſuggeſt a preſumption that Homer was an Egyptian, and tranſferred Egyptian ideas into Greece and Aſia Minor. The dewy Lotus joins alſo with the Crocus and the Hyacinth to form a ſoft and thick genial couch for Jupiter and Juno.

Τωτε δ' υπο Χθων ερεπτο νεοθηλεα ποιην,
Λωτον τ' ηδε κροκον, ηδ' ακινακα βαθυν
Πιοσιον θ' υακινθον [d].

It was uſed alſo for making garlands [e].

The tree Lotus was no leſs famous than the herb. It gave name to a people, and is celebrated by Homer for extraordinary qualities [f]. Virgil ſpeaks of it with the Elm, the Willow, and the Cypreſs [g]; and Theophraſtus places it between the Cedar and the Cypreſs [h]. It is commonly ſuppoſed to be the Zizyphus or Jujube-tree (Rhamnus Zizyphus, Linn.), or perhaps more probably the Nabca of the Egyptians, Rhamnus Spina Chriſti of Linnæus [i].

1. Root perennial. Stems ſeveral, decumbent] ſlender, a foot and half long, [round, ſimple or with a few branches at the baſe, having ſtiffiſh hairs ſcattered over them, preſſed cloſe to the ſtem. Leaves ternate: leaflets obovate, fleſhy, ſeſſile, even, the edge towards the top having hairs ſcattered over it. Stipules ovate, acute, even, longer than the petioles, the ſame ſize with the leaves. Peduncles axillary, ſolitary, twice as long as the leaves, round, commonly one-flowered, ſeldom two-flowered. Bractæ three-leaved, a little ſhorter than the calyx, the middle one longer than the others. Calyx oblong, even, hairy at the edge. Corolla large, yellow, with fleſh-coloured veins on the middle of the banner underneath, the wings of a deeper yellow, keel ſhort with a greeniſh tip. The legume has four longitudinal wings.

It differs from the third ſpecies, by its perennial root, by the ſmoothneſs and greater fleſhineſs of the leaves, by the floral leaflets being lanceolate and not like thoſe on the ſtem, and by the calyxes being leſs deeply cut. The ſecond ſort has the ſtems a foot long, whereas in this they are ſcarcely more than a finger's length; the leaves and calyxes in that are a little hairy, in this they are ſmooth and fat as it were; the appearance alſo and place of growth are different [k].

Native of many parts of Europe, on the ſea coaſt, as Sweden, Denmark, Sileſia, the South of France, the County of Nice, &c. Ray found it at the mouth of the Tiber.—Cultivated by Mr. Miller, in 1759. It flowers from may to october [l].

2. This is diſtinguiſhed from the preceding to which it is very nearly allied, by its procumbent ſtems, white pubeſcent, a foot long; its hairy leaves and calyxes. Leaves alternate, petioled: leaflets ſubſeſſile, cordate-obovate, blunt, terminated by a ſpinule, quite entire, bright green and ſmooth above, white and ſilky underneath. Stipules large, cordate. Flower ſolitary, terminating, large, pale yellow, ſubſeſſile, ſurrounded by lanceolate ternate leaflets. Banner roundiſh, blunt, entire, keeled, ſpreading: wings blunt, converging, ſhorter than the banner: keel ſhorter than the wings [m]. Legume coriaceous, round, ſmooth, with a double narrow membranaceous wing not waved to each future, many-celled, two-valved: partitions ſpongy-membranaceous, ſnowy white, permanent. Seeds about twenty-four, ſubglobular, ſlightly compreſſed, ſmooth, with dark ſtreaks and dots in cluſters on a pale yellow ground. Albumen none or very ſmall. Embryo curved, yellow. Cotyledons ovate, thick, flatiſh. Plume none. Radicle inflex, centrifugal [n].

Native of the South of Europe, in moiſt meadows. I gathered it near Lancy, Vevay and Aigle, in may 1779.—Cultivated in 1683, by Mr. James Sutherland [o]. Our Gerarde calls it horned or codded Claver. Parkinſon, ſmooth codded Trefoile of Mompelier.

Monſ. Gerard and Leyſer do not diſtinguiſh this from the preceding. Magnol, who firſt ſeparated the ſea from the meadow Lotus, ſays that the latter has ſmooth fat thick leaves, and narrower pods.]

3. Root annual. Stems ſeveral, decumbent, (upright) about a foot long, having at each joint a ternate leaf. Leaflets ovate. Stipules of the ſame ſhape. Peduncles axillary, alternate, from two to three inches long, each ſuſtaining one (ſometimes two) large red flower at the top, with three leaves juſt under the flower. [The wings are very dark purple appearing to be black at the end. Legume thick, with four broad undulating wings. Seeds ſubglobular, the ſize of a ſmall pea, ſmooth, pale or livid purple, without ſpots [p].]

It flowers in june and july, and the ſeeds ripen in autumn. It was formerly cultivated as an eſculent plant, for the green pods, which are ſaid to be ſtill eaten in ſome of our northern counties, but they are very coarſe. This plant is now chiefly cultivated in flower-gardens for ornament. It is a native of Sicily, [where Ray found it on the hills above Meſſina: and was cultivated in 1596, by Gerarde [q]. Parkinſon calls it Crimſon-bloſſomed or ſquare-codded Peaſe. In Johnſon's edition of Gerarde's Herball it is named Square crimſon-velvet Peaſe. Ray calls it Square Codded Vetch. None of theſe authors ſpeak of the pod's being eſculent. Cluſius ſays the ſeeds were frequently ſent out of Italy under the name of *Sandalida*, which Adanſon has adopted for the generic name of theſe winged Lotuſes, and Scopoli for the trivial of the ſecond ſpecies.

4. This agrees with the preceding in habit, age, leaves, hairineſs and legumes; but differs in the corollas being only half the ſize; the legumes in pairs, with the wings entire and leſs waved or curled; and the leaves not embracing the ſtem at the baſe, but gaping on the oppoſite ſides [r].]

The ſtems are branching and a foot long; the leaflets are acuminate; the corollas are yellow, and the legumes are near two inches in length. It flowers in july, and the ſeeds ripen in the autumn.

[Native of France about Montpelier. Cultivated in 1759, by Mr. Miller [s].

5. Stems filiform. Corolla yellow with the back of the banner dark purple. It is diſtinguiſhed from all the other ſpecies by its ſolitary ſtipules and one-leafed bractes. The former are lanceolate-oblong, and the latter ſometimes, but ſeldom two-leaved [t].

[a] Jaſſieu. [b] Nymphæa Lotus, Linn. [c] Il. l. 3. [d] l. 14. 347. [e] Theocr. idyll. 18. Ovid. metam. l. 4. [f] Odyſſ. l. 9. See Pliny. l. 13. c. 17. [g] Georg. 2. 85. [h] Hiſt. l. 1. [i] Martyn's note on Virg. Georg. 2. 84. p. 124. [k] Linn. ſpec. [l] Hort. kew. [m] Pollich. [n] Gærtner. [o] Hort. kew. [p] Gærtner. [q] Hort. kew. [r] Linn. ſpec. [s] Hort. kew. [t] Linn. ſyſt.

In the Supplement, it is faid to be a native of Majorca, if the plant there deſcribed be the ſame with that in Syſtema Vegetabilium.]

6. This is an annual plant, with ſeveral trailing ſtalks, a foot long. At each joint is a ternate leaf with roundiſh leaflets. The flowers ſtand ſingly on long axillary peduncles: they are yellow and ſmall, and are ſucceeded by thick pods, arched with a deep furrow on the outſide.

[The plant is almoſt that of L. tetragonolobus. Stem ſubvilloſe. Leaves ſmooth. Stipules ovate. Peduncles long, with three ovate bractes, the length of the flower. Legumes like thoſe of Crotalaria, ovate-oblong, gibbous, but with the dorſal ſuture ſtraight.

Native of Italy and Candia. Mr. Ray ſays that he met with this, or one very like it about Naples and in Sicily. Mr. Miller, who cultivated it in 1759[a], had the ſeeds ſent him from Nice. The pods are eaten in Candia, when young, by the poorer inhabitants[b]. It flowers here in July, but the ſeeds do not ripen in cold ſummers.

7. This is an annual plant like the eleventh, but doeſnot branch ſo much; the leaflets are rounder at their ends and ſmoother; the peduncles are ſhorter, and ſeldom ſuſtain more than two flowers; they are ſucceeded by two very narrow pods about two inches long, and hanging downwards.

[Native of the South of Europe.] Mr. Miller ſays Spain and Portugal. [Cultivated here in 1713. It flowers in July[c].

8. Root weak, branched. Stems ſtraight, numerous, a foot high, branched, reddiſh, beſet with long whitiſh hairs; at each joint a ternate leaf; leaflets oblong, acute. Peduncles axillary, ſolitary, an inch or more in length, with a yellow flower or two at top, in hairy calyxes. Legumes generally one, very ſeldom two[d]; ſlender, near two inches in length, obſoletely toruloſe where the ſeeds are: theſe are twenty or even twenty-three in number, ſpherical, pale ſulphur-coloured, very ſmooth, ſhining like pearls, the ſize of a pins head[e].

Native of the South of France. Mr. Ray gathered it near Naples. Mr. Miller has confounded this with one of the varieties of L. Corniculata.

9. Native of Madeira, where it was found by Mr. Francis Maſſon. Introduced in 1777. It is biennial, and flowers from june to auguſt[f].

10. Root perennial. Stems ſeveral, a foot and half high, ſcarcely pubeſcent. Leaves ternate, petioled: leaflets ſubpetioled, obovate, bluntiſh, ſomewhat hoary, almoſt ſmooth. Stipules almoſt of the ſame ſize and form with the leaflets. Petioles very ſhort. Peduncles erect, two, three, or four-flowered, often twice or thrice as long as the leaves. Flowers pedicelled, nodding, pale rufeſcent, with red veins on the banner; wings including the keel. Teeth of the calyx awl-ſhaped, diſtant. Bracte at the baſe of the proper peduncles, one-leafed, upright, like the leaflets. It ſleeps during the night with the flowers cloſe to the common peduncle, the bracte over it, the leaflets and ſtipules converging. Legumes cylindric, ſmooth, awned.

Native of Arabia, where it was found by Forſkahl, and in Suratte by Brad[g]. Introduced in 1773, by Chevalier Murray. It flowers from july to november[h].]

11. This is an annual plant, which ſends up many ſtiff ſtalks from one to two feet high, dividing into many branches. Leaves ternate with two appendages or ſtipules. Peduncles axillary, two or three inches long, terminated by a cluſter of yellow flowers.

[Theſe ſleep during the night with the bractes covering them. Stems even, from upright diffuſed. Leaves ſmooth, obovate or rhomb-ſhaped. Legumes three to five[i]; linear-oblong, ſickle-ſhaped, compreſſed, toruloſe or knobbed at the ſeeds; which are about fifteen, lens-ſhaped, ſhining, yellow or cheſtnut coloured, the ſame ſize with thoſe in L. ſiliquoſus[k].]

Native of Sicily. It flowers in july, and the ſeeds ripen in autumn. [Cultivated in 1683, by Mr. James Sutherland[l]. It was found by Ray on the hills above Meſſina, and at Capo Paſſaro. By Gerard, Sauvages, &c. in Provence, and by Pallas in Siberia.]

12. Stem ſlender, woody, from two to three feet high, ſending out many ſlender herbaceous branches. Leaves ſeſſile, hoary; leaflets narrow, white. Flowers axillary from the upper part of the ſtem, four or five on very ſlender peduncles, of a yelloviſh deep purple colour. Pods taper, ſlender, little more than an inch long, containing five or ſix ſmall roundiſh ſeeds.

[The leaflets are lanceolate-linear. Flowers from three to five together, the ſame colour as in Antirrhinum trifle, or a very rich brown-purple. The petiolets are white[i].

Native of the Cape Verd iſlands. Cultivated in 1714, by the Dutcheſs of Beaufort at Badminton[k].]

It flowers all the ſummer and autumn, and many times great part of the winter. Mr. Miller ſays that he had the ſeeds from the Cape of Good Hope.

13. This riſes with ſlender ſtems which require ſupport, from three to four feet high, ſending out a few ſide branches. At each joint is a neat ſilvery ternate leaf, with two appendages (or ſtipules). Peduncles axillary, from two to three inches long, ſuſtaining heads of yellow flowers, which part in the middle, each head containing four or ſix flowers. Theſe appear in may, june and july, and are ſucceeded by long taper pods filled with roundiſh ſeeds, which ripen in the autumn.

[It is a ſuffruticoſe weak plant, the whole of it ſilky with cloſe-preſſed hairs. Flowers uſually, in threes. Legumes oblong, cylindric, pendulous[l].

Native of Spain and the Levant. Cultivated in 1696[m]. Morilon had ſeeds from Aleppo, which produced plants at Oxford, before 1680.

14. Root annual. Stems a palm and half in height, round. Stipules ovate-lanceolate, awned. Leaflets firm, thick, obovate, emarginate, on a petiole about the length of the leaves. Peduncles axillary, much higher than the leaves, with one leaf on them, commonly one-flowered, ſeldom two-flowered. Flowers yellow, ſmall. Legumes erect, an inch long. Near Villafranca in the County of Nice, on the ſea coaſt[n].

15. Native of New Zealand[o].]

16. This has a perennial ſtalk three feet high. When the roots are large, they frequently ſend up ſeveral of theſe ſtalks, eſpecially if the old ones be cut down; they are hairy, and divide into ſeveral branches. Leaves ternate, hoary, with two ſtipules. Flowers in heads on long axillary peduncles. Calyxes very hairy. Corollas dirty white with a few marks of pale red. Pods ſhort, thick, cheſtnut-coloured, containing ſeveral roundiſh ſeeds.

[Stems a foot high, hard and woody. Leaves covered with long hairs, diſtinct and decumbent. Corolla reddiſh white, in a reddiſh calyx. Legumes ſwollen, blackiſh, ſhort, elliptic[p]. Flowers fewer than ten in a head, larger than the leaflet[q].

John Bauhin ſays it is from half a yard to a yard in height, and Magnol obſerved it in a wood a yard and half high. Several of the ſpecies are very ſhort in open ſituations, but are drawn up very much when they grow among buſhes.

Native of the South of Europe, as the ſouth of France, Italy, Sicily; alſo of the Levant. It was cultivated in 1683, by Mr. James Sutherland, and flowers from june to auguſt[r].

It is called by Gerarde Hoary Claver; and by Parkinſon, Greater Pile Trefoil.

17. This is a middle ſpecies between the preceding and following, inſomuch that it is difficult to ſay which it approaches the neareſt. Stem annual, but more ſpreadingly branched. Flowers white, leſs than in *hirſutus*, larger than in *reflus*. Legumes ovate.

This differs from all the reſt in having quinate (not ternate) leaves; that is, five leaflets, beſides the ſtipules; which are oblong, as in *L. hirſutus*, not cordate, as in *L. reflus*.

[a] Hort. kew. [b] Prom. Belon. [c] Hort. kew.
[d] Bank. hift. [e] Gaertner. [f] Hort. kew.
[g] Linn. mant. [h] Hort. kew. [i] Linn.
[k] Gaertner.

[l] Hort. kew. [m] Linn. [n] Hort. kew.
[o] Linn. ſpec. [p] Host. kew. [q] Allione.
[r] Forſter. [s] Villars. [t] Linn. [u] Hort. kew.
[x] Linn. mant.

Native of the Levant, Greece, Arabia.]

18. This has a ſtrong perennial root, from which ariſe many upright ſtrong ſtalks, from three to four feet high, covered with a purpliſh bark, and towards the top ſending out a few ſide branches. At each joint is a ternate leaf, with wedge-ſhaped leaflets, and at the baſe of the foot-ſtalk two heart-ſhaped ſtipules, ſitting cloſe to the branch. Leaflets hairy on their under ſide. Flowers at the end of the branches in almoſt globular heads, ſitting cloſe to the pedunclc. Corolla pale fleſh-colour, appearing in June. Pods almoſt an inch long, changing to a brown colour when ripe, and containing ſeveral roundiſh ſeeds, which ripen in ſeptember.

[Stem ſuffruticoſe, from two to three feet in height. Flowers whitiſh, numerous, in a horizontal bundle. Legumes more than twenty, whereas in *L. hirſutus* there are fewer than ten[1]; they are cylindrical, obſolctely torulooſe at the ſeeds, black, the length of the human nail, and contain ſix or eight, ſmall, globular, black ſeeds, which are not ſhining[2].

Native of the South of Europe; obſerved in the South of France, Calabria, and Sicily, by Ray; in Aragon, by D'Aſſo; near Lyons, Turin, &c. by Moriſon; in the County of Nice, by Allione. Parkinſon calls it Lesſer Pile Trefoil.—It was cultivated in 1683, by Mr. James Sutherland[3].]

Mr. Miller ſays, this has by ſome been ſuppoſed the Cytiſus of Virgil, but without foundation; that cows and horſes will eat it when green, but that he had not tried if they will feed on it when made into hay.

19. Root perennial, tapering, ſtriking deeply into the earth. Stems ſeveral, ſlender, bluntly four-cornered, procumbent except where ſupported, as in meadows or among buſhes, from ſix or ſeven inches, to a foot and half in length; varying even more in different ſoils and ſituation, and in the ſeveral varieties. I have now before me (Auguſt 17th, 1797) ſpecimens from the ſame ſpot, ſome growing detached perfectly procumbent and only ſix inches long, other three feet and a half high, by having run up among buſhes, which they do without either twiſting or claſping by tendrils. Leaves ternate, petioled, one at each joint, the leaflets differing extremely in form, in the ſeveral varieties, from bluntly ovate to linear-lanceolate; thoſe in the ſpecimens before me are ovate, terminating in a ſhort point, on very ſhort pedicels, the middle one narrowing towards the baſe, ſo as to be almoſt wedge-ſhaped, they are ſmooth, and the common petiole is membranaceous. The ſtipules reſemble the leaves, but they are more pointed, and are rather lanceolate than ovate. The flowers grow in flatted heads reſembling umbels, on pedunclcs from two to three inches and a half in length, but on pedicels hardly a line long. There is a ſingle ſeſſile ternate leaf at the baſe of each head without any ſtipules; and ſometimes there is only one leaflet or two: the number of flowers varies from three or four to twelve or thirteen; none of my ſpecimens have more than ſix, very few more than four, and ſome only one or two. Calyx fringed with long ſoft hairs. Corolla, before it opens, of a bloody red on the outſide, and of a yellowiſh green within; when expanded of a full yellow, all the petals are equal, and ſtand each on narrow ſeparate claws; the banner bent back, and the wings oblong-ovate. Legumes ſmooth, ſpreading like the ſpokes of a wheel, or rather like the fingers, or bird's claws, and ending in a long ſtraight point. Seeds many, ſometimes more than twenty, ſmall, ſomewhat kidney-ſhaped, and ſpotted[4]. I do not find that more than three or four pods in a head come to maturity.

Native of all parts of Europe, and alſo of Japan, in meadows, paſtures, heaths, by road-ſides, in hedges, among buſhes, and in woods; flowering from june to auguſt. The ſimilitude of the ſtipules to leaves occaſioned ſome of the old writers to call it Lotus pentaphyllos; Gerarde however calls it Small Codded Trefoil; and Ray, Bird's-foot Trefoil, which is the name now commonly retained. Withering calls it Bird's-foot Clover. In Yorkſhire it is ſaid to be called Cheeſecake Graſs, and in ſome other counties, Butterjags, and Crow-toes. It has been recommended for cultivation by Ellis under the name of Ladies fingers[5], by which it is confounded with Anthyllis Vulneraria, a much inferior plant in rural economy; and by Dr. Anderſon under the name of Astragalus glycyphyllos, or Milkwort, which is a ſtrong-ſmelling ſticky plant, that does not ſeem to be agreeable to cattle, though Linnæus affirms that herſes, kine, goats and ſheep eat it.

In German it is named *Gehornte Schotenklee, Wilder Steinklee, Gelber fünfblattriger Klee, Gehörnt Klee, Gelbe Vogelwicke, Gelbe Schoten, Kleiner gelber Hauklee, Kleiner Hornklee, Hornwicke, Waldzeekraut, Frauenfingerkraut, Unſerer Lieben Frauen Schuhlein.* In Dutch, *Gehoornde Klaveren, Gekroonde Muiten, Jaffersſchoentjes.* In Danish, *Kiernringstand, Krageklover.* In Swedish, *Karingetander.* In French, *Le Lotier cornicule, ou des prés, Treſle jaune.*

Mr. Miller has made three ſpecies out of this: 1. Lotus corniculatus; the common ſort. 2. L. anguſtiſſimus, which he ſeems to have confounded with our eighth ſpecies. 3. L. glaber, variety γ of this.

The uſual appearance of Common Bird's-foot Trefoil has been deſcribed above.

β. Has the ſtem more upright, a foot high, hardly angular. Leaves and eſpecially the unexpanded heads with a good deal of wooſlineſs. Leaves veined underneath. Stipules bluntly ovate or roundiſh, but terminating in a point[6].

Scopoli diſtinguiſhes this ſpecifically from the common ſort, by the form of the leaves and braſtes (or ſtipules). In that, as he affirms, the leaflets are ovate, and the ſtipules ſemicordate; in this, which he calls Lotus major, both leaves and ſtipules are lanceolate. But the ſtipules are not ſemicordate in our Common Bird's-foot Trefoil.

This greater variety is found in woods, moiſt meadows, hedges, and the ſides of wet ditches.

γ. In this variety the ſtems are twice as long and narrow as in the common ſort. The leaves and ſtipules are alſo very narrow, and almoſt linear. Legume narrower. It is more ſhrubby than the common. Corn fields and moiſt places. Near Worceſter[7].

δ. This reſembles β, but is leſs hairy. The whole plant is downy. Mr. Doody found it in the fields behind Mother-Huſſs.

ε. Leaves hoary underneath. Found in the chalk-pits at Greenhithe by Mr. Doody[8].

ζ. Entirely without hairs. Stipules half-ovate. Filaments club-ſhaped. On the high grounds north of Marlborough in june[9].

But Monſ. Villars juſtly calls this ſpecies a Proteus, and remarks that he has ſeen individuals of the great hairy variety, that approached nearer to Lotus hirſutus, in appearance, than to many individuals of this ſpecies. Where plants are ſo given to change, it is eaſy, but dangerous to multiply ſpecies. I am ſurpriſed that Linnæus, in diſtinguiſhing the firſt and ſecond ſpecies, ſhould mention that the appearance and place of growth are different, when the place of growth may probably occaſion the difference in the appearance.

The flowers of Bird's-foot Trefoil become green when dried, in which reſpect they reſemble thoſe of Indigo[10].]

Mr. Miller ſays, he has always obſerved, that cattle of all ſorts avoid eating this plant, whilſt the graſs all round it has been eaten very bare. [But he ought to have remarked, that it is the deſignation of Providence, that whilſt cattle crop the herbage, they generally leave the flowering ſtems untouched, otherwiſe many plants could not be propagated. When he goes farther indeed, and affirms] that he has cut the plant when young, and given it to various animals, but could never get them to eat it; [we can only ſay that more modern experience contradicts his experience, whatever

[1] Villars. [2] Gaertner. [3] Hort. kew. [4] Curtis, Woodward Mſs. Withering Fl. ruſtica.

[5] Ellis, Chiltern and Vale Farming, 291. [6] Withering. [7] Lion. Wither. Ray. [8] Ray syn. [9] Withering. [10] Jolli.

ever it might be. Linnæus's account is, that kine, goats and horſes eat it, but that ſheep and ſwine are not fond of it. On the contrary we are told that it is cultivated in Hertfordſhire as paſturage for ſheep. It makes extremely good hay; in moiſt meadows grows to a greater height than the Trefoils[1], and ſeems to be of a quality equal, if not ſuperior to moſt of them. In common with ſeveral other leguminous plants, it gives ſubſtance to the hay, and perhaps contributes to render it more palatable and wholeſome for cattle.

Dr. Anderſon affirms, that as every ſpecies of domeſtic animal eats the Bird's-foot Trefoil, (or Milkwort, as he calls it, having miſtaken it for Aſtragalus glycyphyllos, a plant totally different in appearance, character and qualities;) in preference to every other plant, it ſeldom comes to flower in paſture grounds, unleſs where they have been ſaved from cattle for ſome time. What firſt recommended it to his notice, was the having obſerved it to grow and flouriſh in poor ground; as in the midſt of a barren moor, where the ſoil was ſo poor that even heath could hardly grow: upon bare obdurate clays: in dry and barren ſands. It certainly flouriſhes not only in theſe, but alſo in a chalky ſoil: and we may add, that on moors, heaths and downs hard ſtocked with ſheep, we may obſerve the ſurface to be yellow with the flowers of this plant; which contradicts what Dr. Anderſon aſſerts above, that it ſeldom comes to flower in paſtures; without however confirming the aſſertion of Linnæus, that ſheep diſlike it, or of Miller, that no cattle will eat it: for they devour the herbage, though they leave the flowering-ſtalks untouched, as we remarked above. Dr. Anderſon's figure is not exact in the leaves, there being always three leaflets with two ſtipules, whereas he has never more than four, and frequently only two[2].]

20. This is a perennial plant, ſending out from the root many ſtalks, which branch out their whole length. Leaves ternate, with two appendages or ſtipules, both covered with a woolly down. Flowers on ſhort peduncles, four or ſix in a divided head; they are yellow and appear in july. Pods taper, with roundiſh ſeeds, ripening in autumn.

[Native of the South of Europe, on the ſea coaſt. Cultivated in 1752, by Mr. Miller[3].]

21. This riſes with weak ſhrubby ſtalks three or four feet high, ſending out many ſlender branches, thinly ſet with ſmall hoary leaves, having five leaflets, ſpreading like the fingers, and ſeſſile. Flowers at the extremity of the branches in ſmall heads. They are very ſmall and white, appear at the end of june, or in july, continue to ſeptember, and are ſucceeded by ſhort pods, containing two or three ſmall round ſeeds.

[Native of the South of Europe. Cultivated before 1640, by Parkinſon[4].

Vahl remarks, that there are many ſpecimens in the herbariums of ſeveral botaniſts, ſo different, that they are probably diſtinct ſpecies.

Almoſt all the old writers, ſome of the moderns, and Linnæus himſelf in his earlier works, made the Dorycnium a diſtinct genus. Monſ. Villars ſays it forms a genus between Lotus and Trifolium, differing from the former in the ſhortneſs of its legume, its woodineſs, its diſtinct and more regular leaves, its calyx and very ſmall flowers. It would range better with the Trefoils, if it were not an abſurdity to ſpeak of a Trefoil with quinate leaves, and if that genus were not much loaded with ſpecies already. He makes two ſpecies of Dorycnium. 1. D. ſuffruticoſum; with ſuffruticoſe, upright ſtems. 2. D. herbaceum, with a diffuſed, herbaceous ſtem. The firſt has woody ſtems, branched at bottom. Leaves narrow, oblong, whitiſh, as is the whole plant. Corolla white, except the keel, which is violet. Each pedunele has a ſimple leaf, a little below the flowers.—The ſecond has the ſtems ſtraight, round, villoſe, herbaceous, branching at their upper part; the branches very ſtraight, and approximating to the ſtem, which is from two to three feet high. Leaves by fives, without any petiole, oblong, blunt, widening at the upper part, and ending in a rounded point. Flowers white and ſmall as in the firſt, but double the number. Calyx a little more lengthened, ending in five points, that are more regular than in the firſt.

Native of Dauphiné about Grenoble, and of Savoy near Chambery.

This plant is uncommon and perhaps unknown. It has the habit and ſize of *Lotus veſtus*, with the character of *Dorycnium*. Cluſius's figure, copied by Lobel, John Bauhin, Parkinſon, &c. may ſerve to repreſent this as well as the firſt. Dalechampius's alſo repreſents it, but the leaves are much too narrow[5].

22. Root annual. Stem proſtrate, grooved, rough-haired. Leaves ternate, on long petioles, obcordate, toothletted, ſmooth, marked with lines. Stipules ſemiſagittate, entire, with a two-toothed lobe at the baſe. Pedunckes axillary, elongated, five or ſix-flowered, umbelled, with ſmall yellow flowers. Legumes four to ſix, linear, bowed, toruloſe.

Native of Siberia, reſembling Medicago polymorpha when in flower, but ſmaller, with the legumes of Trigonella. Doubtful whether it be of this genus, or a Trigonella[6].

23. Root annual. Stems from aſcending upright, branched, villoſe, half a foot or more in height. Leaves ternate, obconical, the midrib ending in a ſpinule, pubeſcent. Stipules pedicelled, ſubovate, acuminate, villoſe, ſmaller than the leaves. Pedunckes ſolitary from the upper axils, moſt frequently two-flowered, ſupported by a three-leaved bractæ. Calyx villoſe, græniſh yellow ſpotted with red, the middle tooth of the lower lip longer and larger, but the upper ones equal. Corolla yellow, not longer than the calyx: banner erect, ſubovate, marked with five red lines, the ſide ones uſually two-parted and paler: wings longer than the keel, cohering at top, concave, elliptic, with a blunt eardet from one ſide of the baſe: keel ſickle-ſhaped. Legume ſlightly ſickle-ſhaped, an inch and half long. Seeds ſometimes as many as twenty-two, round, yellow, lucid, ſeparated by membranaceous partitions.

It approaches to L. anguſtiſſimus, but the ſtem is upright. It differs from L. Cornuculata in the ſtems, floreſcence, life, &c. The legume alſo is not one-celled; nor are the ſeeds cylindric but ſpherical. The ſeeds were ſent by Allione. It flowers the beginning of july (in Italy) and perfects the ſeeds by the end of that month[7]. This ſpecies ſhould have been placed in the firſt diviſion.

The determination of the foregoing ſpecies may be aſſiſted by the following table, aſſiſted by the ſpecific characters.

- Perennial. 1. 2. 5. 10. 12. 13. 15 to 21.
- Biennial, 9.
- Annual. 3. 4. 6. 7. 11. 14. 22. 23.

Stem
- Arboreous. 15.
- Fruteſcent or Suffruteſcent. 12. 13. 16. 17. 18. 21.
- Herbaceous, *the reſt*.

Leaves
- Quinate. 17. 21.
- Ternate, with two ſtipules; *the reſt*.

Legumes
- Few. 1 to 15.
  - Square, winged. 1. 2. 3. 4.
  - Cylindric. 5 to 23.
    - *One.* 1. 2. 3. 5. 6. 8. 9. 14. Some have ſometimes 2.
    - Two. 4. 7. 23.
    - Three or Four. 10.
    - Three to Five. 11. 12. 13.
    - Five. 15.
- Many in heads. 16 to 22. Some not more than 4 or 5.

Seeds
- Ovate. 1 to 4. 23.
- Cylindric. 5 to 22.

Corolla
- Red. 3.
- Deep purple. 12.
- Reddiſh white. 16.
- Pale ruſeſcent. 10.
- Whitiſh or pale Fleſh-colour. 18.
- White. 17. 21.
- Yellow, in all the reſt.

[1] Wilharing. [2] Eſſays, vol. 2. 278. &c. [3] Hort. kew. [4] Ibid. [5] Villars. [6] Retzius. [7] Scopoli.

PROPAGATION AND CULTURE.

1. 2. 4. 6. 7. 11. 20. These are propagated by seeds, which should be sown early in april upon an open bed or border exposed to the sun, where the plants are to remain: when they come up they must be thinned, leaving them near two feet asunder, and afterwards they must be kept clean from weeds, which is all the culture they require.

3. The Winged Pea is an annual plant commonly cultivated in flower-gardens for ornament. The seeds are sown in patches, five or six together, where they are designed to remain. If the seeds all grow, some of the plants may be pulled up, leaving only two or three in each patch, and afterwards they will require no other care but to keep them clean from weeds.

12. This is too tender to live abroad, the plants therefore are kept in pots, which in winter are placed in a warm airy glass-case or dry stove, but in summer are placed abroad in a sheltered situation. It may be easily propagated by cuttings during the summer season, and also by seeds; but the plants which have been two or three times increased by cuttings, are seldom fruitful. [The plants are subject to go off at once, and therefore new ones should be constantly raised, especially as this is a very beautiful sort, and almost always in flower.]

13. This also is too tender to live in the open air, and therefore must be treated like the preceding. It may be increased by seeds, sown on a bed of light earth in april. The plants will come up in about a month, and in another month will be fit to remove; when each should be put into a separate small pot filled with fresh light earth; placing them in the shade till they have taken new root: then they may be removed to a sheltered situation, where they may remain till autumn.

It may also be propagated by cuttings, planted during any of the summer months, upon a bed of light earth, covering them close with a bell or hand-glass, and screening them from the sun; in five or six weeks they will have taken root, when they must be inured to the open air, and soon after may be planted in pots, and treated in the same way as the seedling plants.

16. This is propagated by seeds in the same manner as the last sort: the plants will live through the winter in the open air in moderate winters, but it will be proper to keep one or two plants in pots to be sheltered in winter, lest those abroad should be destroyed by severe frost.

18. This sort may be cultivated for feeding cattle in the same manner as Lucerne. It rises easily from seeds, is very hardy, and will thrive on any light dry poor ground.

[19. Dr. Anderson sowed the Common Bird's-foot Trefoil with his ordinary hay-seeds. It grew the first season as tall as the great Clover, and was scarcely distinguishable from Lucerne, but by the slenderness of the stalk, and proportional smallness of the leaf. Like Lucerne, it is perennial, sends down a long root to a great depth, at first small, but becoming at length of a considerable size: so that it is several years before it attains its full perfection: but when once established, it remains many years in full vigour, and produces annually a great quantity of fodder. In autumn 1773, he cut the stalks from an old plant in an indifferent soil, and having dried it, found that it weighed fourteen ounces and a half. Like Lucerne it is never affected with the severest drought; but it does not resemble that plant in delicateness of constitution; as it thrives in the stiffest clays, and stands its ground among grass and weeds. The stalks die down entirely in winter, and do not come up in the spring till Clover begins to advance, so that it can never be of use but as a summer pasture. Neither does it advance very fast after it is cut down, or eat over, even in summer.

Dr. Anderson speaks of the larger variety, which he calls another species of Astragalus, with an erect stalk, that naturally grows upon dampish soils. He thinks it more likely to answer well for hay, the stalks being longer; but had no opportunity of making particular observations on it, or of procuring the seeds[a].

Mr. Curtis justly remarks; whether this plant be deserving of the encomiums here bestowed upon it, the practical farmer must determine. There appears no reason, why seed might not be obtained from it; and it should seem that land not strong enough to bear Clover might be improved by the introduction of Bird's-foot Trefoil.

August 18th 1797. I gave a handful of it in full flower and seed to a working horse, who eat it greedily in preference to very good hay on which he was then feeding. A cow also in full pasture received it with seeming avidity.]

21. Dorycnium will live in the open air, if it be planted in a dry soil and warm situation. It is propagated by seeds, which will come up in any common border.

LOTUS. See [*Anthyllis, Aspalathus,*] *Celtis,* [*Coronilla, Cytisus, Diospyros, Ebenus, Indigofera, Liparis, Nymphæa, Ononis, Rhamnus, Trifolium, Trigonella.*

LOVAGE. See *Ligusticum*

———, Bastard. See *Laserpitium Siler.*]

LOVE-APPLE. See *Solanum Lycopersicum.*

[Love-lies-bleeding. See *Amaranthus cordatus.*

LOUICHEA. (*From M. René Louiche Desfontaines.*)

Lin. gen. Schreb. n. 1768. *L'Herit, monogr. & Stirp. nov. 135. t. 65.*

Class. 16. 2. Monadelphia Tetrandria: or, 4. 1. Tetrandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth common* none.

Perianth proper one-leafed, four-parted: *segments* awl-shaped-acuminate, concave, unequal.

COR. none.

STAM. *Filaments* four, awl-shaped, slightly connate. *Anthers roundish.*

PIST. *Germ* superior, turbinate. *Style* filiform, bifid. *Stigmas* simple.

PER. none. Calyx closed, covering the seed.

SEEDS solitary, obovate, covered by a membranaceous aril.

REC. *common* peduncle-shaped, trichotomous, producing the flowers.

ESSENTIAL CHARACTER.

Rec. common peduncle-shaped, trichotomous, producing the flowers. *Per. proper* four-parted; segments concave, subulate-acuminate, irregular, growing together. *Cor.* none. *Filam.* four, connate, inserted into the receptacle. *Germ* superior. *Style* bifid. *Seed* single, arilled, within the calyx.

SPECIES.

1. Louichea cervina.

L'Herit. monogr. & Stirp. nov. 135. t. 65.

Camphorosma Pteranthus. *Lin. syst.* 166. *mant.* 41.

DESCRIPTION, *&c.*

This is an annual, very branching plant, a span high. Stem almost upright, round. Branches in whorls, the upper ones opposite, spreading very much; the lower ones prostrate, jointed, knobbed: branchlets in pairs from each axil. Leaves six, in whorls, the two outer opposite ones larger, the four inner from each side of the axils, the uppermost seldom only opposite, sessile, linear, quite entire, scarcely one-nerved, very smooth, thickish, bright green, the same colour on both sides, from six to eight lines in length, and one or two lines in breadth. Flowers terminating, coming out successively, sessile, close, the middle ones solitary, herbaceous, two or three lines broad.

See Camphorosma, from which it differs in habit, in having a common receptacle, and in the stamens, being monadelphous[b].

LOUSEWORT. See *Delphinium, Staphisagria,* and *Pedicularis.*

LUCERNE. See *Medicago.*

LUCINIUM. See *Amyris.*]

[a] Essays, vol. 2. 242. [b] L'Heritier.

LUDWIGIA. (*So named by Linnæus, in honour of Chriſtian Gottlieb Ludwig, Profeſſor of Medicine at Leipſic.*)
Lin. gen. n. 153. *Reich. n.* 161. *Schreb. n.* 204. & *vol.* 2. *p.* 820. *Gærtn. t.* 31. *Juſſ.* 319.
Claſſ. 4. 1. Tetrandria Monogynia.
Nat. order of *Calycanthemæ.—Onagræ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, four-parted, ſuperior, permanent: *ſegments* lanceolate, ſpreading very much, length of the corolla.
COR. *Petals* four, obcordate, flat, ſpreading very much, equal.
STAM. *Filaments* four, awl-ſhaped, upright, ſhort. *Anthers* ſimple, oblong, upright.
PIST. *Germ* four-cornered, covered with the baſe of the calyx, inferior. *Style* cylindrical, length of the ſtamens. *Stigma* obſoletely four-cornered, capitate.
PER. *Capſule* four-cornered, blunt, covered and crowned by the calyx, four-celled, four-valved: partitions oppoſite to the valves.
SEEDS numerous, ſmall.
REC. columnar, membranaceous, four-winged: wings in the angles of the partitions, ſeed-bearing on each ſide.

ESSENTIAL CHARACTER.

Cal. four-parted, ſuperior. *Cor.* four-petalled. *Capſ.* inferior, four-cornered, four-celled. *Recept.* diſtinct from the axis of the fruit, bearing the ſeeds on each ſide.

SPECIES.

1. Ludwigia alternifolia. *Alternate-leaved Ludwigia.*
Lin. ſpec. 173. *ſyſt.* 161. *Reich.* 1. 336. *hort. upſ.* 30. *cliff.* 491. *Gron. virg.* 17. *Trew. ehret.* 2. *t.* 2. *Gærtn. fruct.* 1. 158. *Pluk. phyt. t.* 412. *f.* 1. & *t.* 203. *f.* 2. (Lyſimachia.)
Leaves alternate lanceolate, ſtem upright.
[2. Ludwigia oppoſitifolia. *Oppoſite-leaved Ludwigia.*
Lin. ſyſt. 161. *Reich.* 1. 336. *ſ. zeyl. n.* 66.
L. perennis. *Lin. ſpec.* 173.
Leaves oppoſite lanceolate, ſtem diffuſed.
3. Ludwigia repens. *Creeping Ludwigia.*
Swartz. prodr. 33.
Leaves oppoſite ovate, peduncles ſolitary axillary, ſtem creeping.
4. Ludwigia erigata. *Upright Ludwigia.*
Lin. ſyſt. 161. *Reich.* 1. 336. *mant.* 40.
Leaves oppoſite lanceolate, ſtem upright.]

DESCRIPTIONS, &c.

1. This is an annual plant, riſing with an upright branching ſtalk a foot high. The flowers come out ſingly at the axils. Flowers ſmall, on ſhort peduncles. Corolla yellow.

[Capſule ſhorter than the permanent calyx, from a rounded baſe cubical, opening at the angles: partitions membranaceous, inſerted on one ſide into the middle of the valves, on the other into the axis, not ſeparating. Receptacle a compreſſed, fungoſe lamina or plate, fixed to the inner angle of each cell, covered on both ſides with the ſeeds; which are ovate, ſmooth, ſomewhat ſhining, pale yellow[1].

Native of Virginia[2]; or according to Mr. Miller, of South Carolina, whence the ſeeds were ſent him by Thomas Dale, M. D. [before 1752. It flowers in June and July[3].

2. Stems procumbent, a ſpan long. Branches at the root, and ſcarcely any others. Leaves ſmooth, quite entire, ſtriated, ending in the petioles. Flowers ſolitary, axillary. Corolla yellow, ſhorter than the calyx. Germ longer than the calyx. Capſule ſhorter by half than the leaves[4].—In Flora zeylanica the leaves are ſaid to be *alternate*; the herb like Lythrum hyſſopifolium, and the flower in the form of Caryophyllus officinarum. Native of the Eaſt-Indies.

3. This is an annual plant, native of Jamaica[5]. See *Iſnardia paluſtris*, which is the ſame.

4. This alſo is annual. Stem herbaceous, a foot high, brachiate, ſmooth. Leaves petioled, quite entire, ſmooth. Peduncles terminating, about three together, one-flowered; ſeldom axillary. Germs four-cornered, winged. Calyxes minute. Corolla ſcarcely viſible. Capſule ſubcubical, with the four angles keeled. Native of the Eaſt-Indies[6].

Juſſieu doubts whether this ſpecies belongs to the genus; the leaves being oppoſite, and the flowers terminating[7].]

PROPAGATION AND CULTURE.

The plants muſt be raiſed from ſeed in a hot-bed, in the ſpring, and treated as directed for Amaranthus. If they be not brought forward in the ſpring, they ſeldom produce good ſeeds in England.

[LUDWIGIA. See *Ammannia, Iſnardia, Juſſieua.*
LUFFA. See *Momordica.*
LUJULA. See *Oxalis.*]

LUNARIA. (*So named from the form of the fruit, like a full moon.*)
Lin. gen. n. 809. *Reich. n.* 873. *Schreb. n.* 1085. *Gærtn. t.* 142. *Tournef. t.* 105. *Juſſ.* 239.
Claſſ. 15. 1. Tetradynamia Siliculoſa.
Nat. order of *Siliquoſæ* or *Cruciferæ.—Cruciferæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved, oblong: *leaflets* ovate-oblong, blunt, converging, deciduous, of which the two alternate ones are gibbous and bagged at the baſe.
COR. four-petalled, cruciform. *Petals* entire, blunt, large, the length of the calyx, ending in claws of the ſame length.
STAM. *Filaments* ſix, awl-ſhaped, four the length of the calyx, two a little ſhorter. *Anthers* from upright ſpreading.
PIST. *Germ* pedicelled, ovate-oblong. *Style* ſhort. *Stigma* blunt, entire.
PER. *Silicle* elliptic, flat, entire, upright, very large, pedicelled, terminated by the ſtyle, two-celled, two-valved: *partition* parallel and equal to the valves, flat.
SEEDS ſome, kidney-ſhaped, compreſſed, marginal, in the middle of the ſilicle. *Receptacles* filiform, long, inſerted into the lateral futures.

ESSENTIAL CHARACTER.

Silicle entire, elliptic, compreſſed-flat, pedicelled: valves equal and parallel to the partition, flat. *Cal.* with bagged leaflets.

SPECIES.

1. Lunaria rediviva. *Perennial Honeſty.*
Lin. ſpec. 911. *ſyſt.* 592. *Reich.* 3. 242. *hort. cliff.* 333. *Gærtn. fruct.* 2. 288. *Mill. illuſtr. Retz. obſ.* 1. 22. *Hall. helv. n.* 500. *Scop. carn. n.* 786. *Crantz. auſtr.* 18. *Krock. ſilef. n.* 1043. *Villars dauph.* 3. 307. *Knipb. cent.* 7. *n.* 46.
L. græca perennis. *Beſl. eyſt. vern.* 1. *t.* 7. *f.* 2.
Viola lunaria major, ſiliqua oblonga. *Bauh. pin.* 207.
Viola lunaris longioribus ſiliquis. *Ger.* 378. 2. *emac.* 464. 2. *Raii hiſt.* 788.—altera ſ. peregrina. *Park. par.* 265. 2.
V. latifolia. Lunaria odorata. *Cluſ. hiſt.* 1. 297.
Leucoium lunatum perenne ſiliqua oblonga. *Mor. hiſt. ſ.* 3. *t.* 9. *f.* 3.
Silicles lanceolate, root perennial.
2. Lunaria annua. *Annual Honeſty.*
Lin. ſpec. 911. *ſyſt.* 592. *Reich.* 3. 242. *Krock. ſilef. n.* 1044. *Retz. obſ.* 1. 22.
L. græca aurea. *Beſl. eyſt. vern.* 7. *f.* 1.
L. major ſiliqua rotundiore. *Bauh. hiſt.* 2. 881.
Viola latifolia. *Dod. pempt.* 161. *Dalech. hiſt.* 805.
V. lunaria major, ſil. rotunda. *Bauh. pin.* 203. *Raii hiſt.* 787.
V. lun. ſ. Bolbonac. *Ger.* 377. *emac.* 464. *Park. theat.* 1366.—vulgaris. *Park. parad.* 265. 1.
Leucoium lunatum annuum, ſil. comprella rotunda. *Mor. hiſt. ſ.* 3. *t.* 9. *f.* 1.
Silicles roundiſh, root biennial.
3. Lunaria ægyptiaca. *Egyptian Honeſty.*
Mill. dict. n. 3. *fig. t.* 169.
L. Ricotia. *Gærtn. fruct.* 2. 289.
Ricotia ægyptiaca. *Lin. ſpec.* 912. *ſyſt.* 593. *Reich.* 3. 243.
Cardamine ægyptiaca. *Lin. ſpec. ed.* 1. 656.
Silicles oblong pendulous, leaves ſuperdecompound, with trifid leaflets.

[1] Gærtner.
[2] Hort. *kew.*
[3] Linn. Gron. Hort. *kew.*
[4] Linn. *zeyl.*
[5] Swartz.
[6] Linn. *mant.*
[7] Gen.

DESCRIP-

DESCRIPTIONS, &c.

1. This is a very large plant. Root perennial, white. Stem from three to four feet high, upright, ſimple, channelled, green tinged with purple, hirſute. Lower leaves oppoſite, upper alternate, on long petioles, ſmooth or rough-haired, cordate, unequally ſerrate, nerved, acuminate, near a ſpan long, and three or four inches wide. Flowers terminating, on long ſlender peduncles, often bifid and trifid. Calyxes of a white purple colour, and ſmooth. Petals purple, odorous. Silicles acuminate, an inch and half wide, three inches long, with the permanent ſtyle half an inch in length. They contain three, four or five roundiſh ſeeds faſtened to the margin of the future by a thread. The flowers have two glands on each ſide between the longer ſtamens and the ſtyle, and one between the ſtyle and each ſhorter ſtamen[1]. This circumſtance accounts for the bagging of the perianth. Native of the South of France, Italy, Switzerland, Silelia, Auſtria, Hungary.—Cultivated by Gerarde in 1597[2].

2. Root biennial, knobbed. Stem ſmaller than the preceding, upright, branched, hirſute, round, half a yard high. Leaves rough-haired, the floral ones almoſt alway; oppoſite, ſeſſile: ſtem-leaves petioled, much ſmaller than thoſe of the preceding, cordate, dull green, ſerrate. Calyx purpliſh aſh-colour, hirſute. Petals violet or blue-purple, inodorous. Style two lines long, permanent. Silicles broader, blunter, ſhorter. Seeds five or ſix[3].

Native of Germany. Cultivated in 1597, by Gerarde. They both flower in may and june[4].]

The ſeed-veſſels, when full ripe, become tranſparent, and of a clear ſhining white like ſattin, whence this plant has acquired the name of *White-Sattin*. The branches uſed to be dried and preſerved to place in chimneys. [Gerarde ſays it is called in Engliſh Pennie-flower or Money-flower, Silver-plate, Prick-ſongwoort, in Norfolk Sattin and White Sattin, and among our women Honeſtie. This laſt name now moſt commonly obtains, and I preſume is derived from the tranſparency of the ſeed-veſſels, in which the whole may be viewed, without deceit.—In German it is named *Mondviole*, *Mondkraut*, *Silberblume*, *Silberblatt*, *Flittern*, *Atlas-blume*, *Waldrioge*l. In Dutch, *Maankruid*, *Penninghruid*, *Zilverbloem*. In Daniſh, *Maanevioel*. In Swediſh, *Manefioler*. In French, *la Lunaire*, *Satinée*, *Satin blanc*, *Paſſe-ſatin*, *Medaille*, *Herbe aux lunettes*, *Bulbonac* (from its ſtrumous or glandular root.) In Italian, &c. *Lunaria*.

Gærtner regards theſe two ſpecies as one, and aſſerts that there is no true diſtinction between them beſides duration; that the colour of the calyx and corolla, or the odour of the flowers is nothing; and that Linnæus's ſpecific difference from the ſituation of the leaves is fictitious.

He deſcribes the Silicle as very large, elliptic, attenuated at top into the ſtyle, at bottom into the pedunclc, compreſſed, flat, two-celled, two-valved: partition like paper, white, parallel to the valves. Receptacle intervalvular, filiform, emitting on both ſides towards the centre umbilical threads, faſtened to the ſeptum. Seeds few, two or three, ſeldom four in each cell, large, ovate-kidney-ſhaped, compreſſed like a lens, with a broad membranaceous rim, at firſt reddith, then brown, with very minute dots on them.

If the ſpecies be diſtinct, they are certainly very nearly allied, and have been confounded. According to Linnæus, the root of the firſt is perennial; the flowers odorous; the leaves alternate except the loweſt, and more rough-haired. In the ſecond, the root is biennial; the flowers inodorous; the ſtem hirſute; the leaves oppoſite, at leaſt in the cultivated plant: but he queſtions whether it be ſo always. He makes the latter a native of Sicania; but it appears that it is the former which was found there. Gerarde, I know not by what miſtake, ſays that they are found wild about Pinner, Harrow, Watford and Hornchurch. Johnſon does not correct him: but Parkinſon ſays, he could never certainly be aſſured of it; and no one, that I have heard, has found them ſince.

Monſ. Villars is of opinion that the lengthened pointed form of the fruit, is ſufficient, independent of the duration, villoſe calyx, &c. to diſtinguiſh the firſt ſpecies from the ſecond, which is that moſt commonly cultivated in old flower-gardens.

I have a ſeedling plant of this now (Aug. 21. 1797) before me, which has ſeven full-grown leaves on it, and two young ones ſpringing from the centre. The former are of an oblong cordate form, from ſix to ſeven inches long, and five inches wide near the baſe, light green, villoſe on the upper ſurface, and rough-haired along the veins of the lower ſurface, which are very prominent; the edge is rather crenate than ſerrate: the petioles are ſeven or eight inches long, very rough-haired, and channelled.

A plant of the ſecond year, now in full ſeed, is five feet high; the ſtem round, ſomewhat flexuoſe, quite ſimple, having no branches but thoſe which produce the flowers: white pellucid hairs are ſcattered over it, and it is ſpotted with browniſh purple towards the bottom. The root-leaves are gone, having left only the withered petioles. The ſtem-leaves are ſolitary, alternate, cordate-oblong, almoſt ſagittate, drawn to a point, pale green, villoſe, the midrib and principal veins rough-haired, the edge unequally ſerrate, with larger and ſmaller ſerratures alternately: the loweſt leaves are nine inches in length, and ſix in breadth where the petiole is inſerted, which is three inches long: but this gradually ſhortens to about the middle of the ſtem, and then the other leaves to the top are ſeſſile: the uppermoſt leaf (or two) is even jagged. From each axil to within a foot of the bottom comes out a ſingle flowering ſtalk; the lower ones near a foot long, with a few leaves on them, like the ſtem-leaves, but ſmaller, ſometimes oppoſite, but more frequently alternate; theſe have but few flowers on them: the upper flowering-ſtalks are ſhorter, have no leaves, but more flowers: and a bunch or ſpike of flowers terminates the whole. Silicles alternate, broad-elliptic, an inch and half long, an inch and quarter broad, on pedicels above an inch and half in length; the permanent ſtyle three eighths of an inch long. The number of ſeeds is uncertain, from two or three to ſix or ſeven, but ſome of theſe are generally abortive. I do not diſcern any traces of that attenuation of the ſilicle which Gærtner ſpeaks of.

Mr. Miller has given the ſpecific differences right, from the ſilicles; but in his deſcriptions he has reverſed them; aſcribing large roundiſh pods to L. rediviva, and longer narrower pods to L. annua, which he ſays alſo has larger flowers, and of a lighter purple colour.

3. This is an annual plant, with a ſmooth branching ſtalk little more than a foot high. Leaves unequally pinnate: leaflets differing in ſize and form; ſome almoſt entire, others cut at their extremities into three parts; they are ſmooth, and of a lucid green. The flowers ſtand each upon pretty long ſlender peduncles, which come out from the ſide, and alſo at the end of the branches, in looſe ſmall cluſters; they are of a purple colour, and are ſucceeded by oblong compreſſed pods, which hang downward, and when ripe are of a *feuille-mort* colour.

[Silicle ovate-oblong or rhomb-elliptic, ſtarred like a leaf, two-celled, two-valved: partition parallel to the valves, thin almoſt as a cobweb, generally glued faſt to the valves when the ſeed-veſſel is ripe, ſo that it eſcaped Linnæus and others, who accordingly ſuppoſed the fruit to be one-celled. Seeds in each cell one or two, ſubcordate, or deeply emarginate at the umbilicus, compreſſed, ſomewhat rugged to the touch, obſoletely margined, brown.

There being certainly a partition in the ſilicle, this ſpecies ought not to be ſeparated from Lunaria, ſince there is ſuch a conformity in the fructification, although the outward habit be peculiar, and very different from the others[5].]

Native of Egypt. It flowers here in june and july;

[1] Krocker. Scop. Villars.
[2] Krocker.
[3] Hort. kew.
[4] Hort. kew.
[5] Gærtner.

the seeds ripen the beginning of September, and the plants decay soon after.

[It was cultivated in 1757, by Mr. Miller[1].]

PROPAGATION AND CULTURE.

1. 2. These are propagated by seeds sown in the autumn. Those sown in the spring often miscarry, or lie a long time in the ground. They will grow in almost any soil, but love a shady situation; and require only to be kept clean from weeds. If the seeds be permitted to scatter, the plants will rise without farther care; and if they be left unremoved, they will grow much larger than those which are transplanted.

3. Sow the seeds in an open border, where they are to remain: if they be sown soon after they are ripe, the plants will come up in the autumn, and live through the winter, in a sheltered situation: these will flower early the following summer, whereby ripe seeds may be obtained: they may also be sown in the spring. Keep them clean, and thin them where they are too close. If the seeds be permitted to scatter, these also will come up without care.

[LUNARIA. See *Alyssum*, *Medicago*, *Marchantia*, *Osmunda*, *Rumex*.

LUNGWORT. See *Pulmonaria*.

———, Cow's or Bullock's. See *Verbascum*.

LUNULARIA. See *Marchantia*.

LUPINASTER. See *Trifolium*.]

LUPINUS (*of Pliny and other Latin writers. From* lupus, quod lupinâ naturâ terram voret; *on account of its exhausting quality. Or rather* ΑΠΟ ΤΗΣ ΛΥΠΗΣ, *whence Virgil calls Lupines* tristes lupini, *the bitterness of this pulse controlling the muscles, and giving a sorrowful appearance to the countenance.* Vossius.)

Lin. gen. n. 865. *Reich. n.* 939. *Schreb. n.* 1176. *Gaertn. t.* 150. *Tournef. t.* 213. *Juss.* 354.

Class. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminosæ*.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bifid.

COR. papilionaceous. *Banner* cordate-roundish, emarginate, bent back at the sides, compressed. *Wings* subovate, almost the length of the banner, not fastened to the keel, converging below. *Keel* two-parted at the base, sickle-shaped upwards, acuminate, entire, the length of the wings, narrower.

STAM. *Filaments* ten, united, somewhat ascending, distinct above. *Anthers* five, roundish, and as many oblong.

PIST. *Germ* awl-shaped, compressed, villose. *Style* awl-shaped, ascending. *Stigma* terminating, blunt.

PER. *Legume* large, oblong, coriaceous, compressed, acuminate, one-celled.

SEEDS several, roundish, compressed.

OBS. *The calyx is different in the several species.*

ESSENTIAL CHARACTER.

Cal. two-lipped. *Anthers* five oblong, five roundish. *Legume* coriaceous.

SPECIES.

1. Lupinus perennis. *Perennial Lupine.*
Lin. spec. 1014. *Jacq.* 655. *Reich.* 3. 439. *Mill. fig. t.* 170. *f.* 1. *Kalm. itin.* 3. 96. *engl. ed.* 2. 155. *Gron. virg.* 172. 104. *Curt. magaz.* 202.
L. cæruleus minor perennis virginianus repens. *Mor. hist.* 2. 87. *f.* 2. *t.* 7. *f.* 6. *Raii hist.* 908.
Calyxes alternate, without appendicles, upper lip emarginate, lower entire.

2. Lupinus albus. *White Lupine.*
Lin. spec. 1015. *Jacq.* 655. *Reich.* 3. 440. *hort. cliff.* 499. *upf.* 209. *mat. med.* 171. *Gaertn. fruct.* 2. 325. *Villars dauph.* 3. 424. *Ludw. ect. t.* 191. *Blackw. t.* 282. *Knoph. cent.* 4. *n.* 43.
L. sativus flore albo. *Bauh. pin.* 347. *Clus. hist.* 2. 218.
L. sativus. *Ger.* 1043. 1. *emac.* 1217. 1. *Raii hist.* 906.—albus. *Park. parad.* 335. 1. *theat.* 1074. 1. *Mor.* 2. 7. 3.
L. flore albo. *Riv. tetr. t.* 25.
Calyxes alternate, without appendicles, upper lip entire, lower three-toothed.

[1] Hort. kew.

3. Lupinus varius. *Small blue Lupine.*
Lin. spec. 1015. *Jacq.* 655. *Reich.* 3. 440. *hort. cliff.* 499. *upf.* 367. *Willich. in nov. act. nat. cur.* 4. 115. *Knoph. cent.* 7. *n.* 47. *Gaertn. fruct.* 2. 324.
L. sylvestris. *Ded. pempt.* 530. *Allion. pedem. n.* 1273.—flore cæruleo. *Bauh. pin.* 348.
L. sylv. flore purpureo, semine rotundo vario. *Bauh. hist.* 2. 291. *Tournef. inst.* 392.
L. flore cæruleo vel rubro. *Riv. tetr. t.* 27.
L. fl. cær. *Ger.* 1043. 3. *emac.* 1217. 3.
L. minimus cærul. *Park. theat.* 1074. 3. *Raii hist.* 907. 4.
L. sativus major. *Besl. eyst. æst.* 13. *t.* 3. *f.* 1.
Calyxes half-whorled, appendicled, upper lip bifid, lower slightly three-toothed.

4. Lupinus hirsutus. *Great blue Lupine.*
Lin. spec. 1015. *Jacq.* 655. *Reich.* 3. 440. *hort. cliff.* 499. *upf.* 209.
L. lanuginosus latifolius humilis, flore cæruleo purpurascente, stoloniferus. *Shaw. afr.* 393.
L. peregrinus major f. villosus cæruleus major. *Bauh. pin.* 348. *prodr.* 148. *Raii hist.* 907. 2. *Mor.* 2. 7. 5.
L. exoticus hirsutissimus. *Bauh. hist.* 2. 289.
L. cæruleus maximus. *Park. parad.* 335. *t.* 337. *f.* 1.
L. major flore cæruleo. *Ger. emac.* 1217. *f.* 4.
Calyxes alternate appendicled, upper lip two-parted, lower three-toothed.

5. Lupinus pilosus. *Rose Lupine.*
Lin. spec. 655. *Reich.* 3. 440.
L. peregrinus major, flore vario. *Herm. hodæt.* 328.
Calyxes in whorls appendicled, upper lip two-parted, lower entire.

6. Lupinus angustifolius. *Narrow-leaved blue Lupine.*
Lin. spec. 1015. *Jacq.* 655. *Reich.* 3. 441. *Gaertn. fruct.* 2. 325. *Knoph. cent.* 4. *n.* 46. *Lamarck. del.* 2. *t.* L. 7.
L. angust. cæruleus elatior. *Raii hist.* 908.
L. flore cær. minore. *Riv. tetr. t.* 28.
Calyxes alternate appendicled, upper lip two-parted, lower entire.

7. Lupinus luteus. *Yellow Lupine.*
Lin. spec. 1015. *Jacq.* 656. *Reich.* 3. 441. *hort. cliff.* 499. *upf.* 209. *Gaertn. fruct.* 2. 325. *Sauvages monsp.* 215. *Krock. silef. n.* 1157. *Knoph. cent.* 4. *n.* 47. *Curt. magaz.* 140.
L. sylvestris, flore luteo. *Bauh. pin.* 348. *Riv. tetr. t.* 26.
L. flore luteo. *Ger.* 1043. 2. *emac.* 1217. 2. *Park. parad.* 336. 4. *theat.* 1074. *Raii hist.* 908.—semine compresso vario. *Bauh. hist.* 2. 291.
L. luteus. *Mor.* 2. 7. 4.
Calyxes in whorls appendicled, upper lip two-parted, lower three-toothed.

———

[8. Lupinus cochinchinensis. *Single-leaved Lupine.*
Lour. cochinch. 429.
Calyxes appendicled in spikes, upper lip bifid, lower three-toothed, leaves simple, ovate.

9. Lupinus africanus.
Lour. cochinch. 429.
Calyxes appendicled five-cleft, peduncles many-flowered terminating, leaves ternate lanceolate, stem shrubby diffused.

10. Lupinus trifoliatus.
Cavan. hisp. 43. *n.* 65. *t.* 59.
Calyxes five-toothed, legumes in spikes upright, leaves ternate ovate, stem herbaceous.

DESCRIPTIONS, &c.

These are mostly herbaceous, annual plants. The leaves digitate, with stipules at the base of the petiole. Flowers in terminating spikes, either placed alternately, or in a sort of whorl; some naked, others bracted[1]. The first species is perennial; the ninth shrubby. The leaves are simple in the eighth, ternate in the ninth and tenth species. The flowers are white in the second sort, flesh-coloured in the fifth, yellow in the seventh, eighth and ninth, in the rest blue.]

[1] Juffieu.

1. This

1. This has a perennial creeping root, from which arife ſeveral erect channelled ſtalks a foot and a half high, ſending out two or three ſmall ſide branches, garniſhed with digitate leaves, compoſed of from five to ten or eleven narrow ſpear-ſhaped leaflets, which join at their baſe, and ſtand upon very long foot-ſtalks, having a few hairs on their edges. The flowers grow in long looſe ſpikes, which terminate the ſtalks, and are placed without order on each ſide; they are of a pale blue colour, and on ſhort peduncles. Theſe appear in june, and the ſeeds ripen in auguſt, which are ſoon ſcattered if they are not gathered when ripe; for after a little moiſture, the ſun cauſes the pods to open with elaſticity, and caſt out the ſeeds to a diſtance all round.

[Linnæus ſays that the leaves conſiſt of eight lanceolate blunt ſmooth leaflets; and that the flowers are placed alternately in very long racemes, commonly two together from one point, each on its proper pedicel. According to Miller, the number of leaflets varies much, and the flowers are either in pairs, or elſe three or four from the ſame joint.

It is a native of Virginia and other parts of North America; and was cultivated in the botanic garden at Oxford in 1658.

Kalm informs us that Perennial Lupine is abundant in the woods in New Jerſey, and that he has often found it thriving on very poor ſandy fields, and on heaths, where no other plants would grow. The flowers, which commonly appear there in the middle of may, make a fine ſhow by their purple hue. He was told that the cattle would eat theſe flowers very greedily, but found that they were not fond of this plant when they had any thing elſe. Horſes, indeed, eat the flowers, but left the ſtalk and leaves; and if cattle eat the plant in the ſpring, it was from neceſſity. However he is of opinion that the Perennial Lupine might be tried on dry ſandy heaths, and that means might be found to make it palatable to cattle.]

2. This has a thick upright ſtalk about two feet high, dividing towards the top into ſeveral ſmaller hairy branches. Leaves digitate, compoſed of ſeven or eight narrow oblong leaflets, joining at the baſe; they are hairy, of a dark grayiſh colour, and have a ſilvery down. The flowers are produced in looſe ſpikes at the end of the branches; they are white and ſeſſile. Legumes ſtraight, hairy, about three inches long, containing five or ſix ſeeds, [which are roundiſh, flatted like a lens, extremely ſmooth and even, perfectly white without any ſpots, ſmaller than moſt of the others. The umbilicus or navel has a prominent ring.] It flowers in july, and the ſeeds ripen in the autumn. It grows naturally in the Levant, and is cultivated in ſome parts of Italy, as other pulſe, for food. [Alſo in the ſouth of France, in poor dry extenſive plains, as a meliorating crop, to be ploughed in, where no manure is to be had, and the ground is too barren for clover or other better plants[a]. With us it is uſed only among other annuals in the flower-garden, and was thus cultivated by Gerarde in 1596. He ſays, it is named in Engliſh, Garden or tame Lupine, and of ſome, after the German name, *Fighoane*.

Ray, who has deſcribed this plant very well, remarks that the leaves, which are not unaptly named *digitate* by Jungius, have the ſides contracted at night, and hang down, being bent back to the petiole[b]. This was a phenomenon before the time of Linnæus very little attended to. He alſo obſerved the cultivation of the Lupine in Tuſcany, not only for food, but for improving the land by ploughing it in; a practice continued from the time of the ancient Romans, as may be ſeen by conſulting Pliny and Columella.]

3. This is an annual plant, with a firm, ſtraight, channelled ſtalk near three feet high, divided towards the top into ſeveral branches. Leaves digitate, compoſed of five, ſix, or ſeven oblong (or linear) leaflets, which join at their baſe, and are hairy. The flowers are produced in ſpikes at the end of the branches, ſtanding round the ſtalk in half whorls; they are of a light blue colour. [Legumes ovate, thick, flatted a little, villoſe, ſwelling where the ſeeds are, in a manner four-celled; partitions cellular-membranaceous, becoming obſolete, or wearing out when ripe. Seeds ſolitary, (two, or ſeldom more in all) large, irregularly round, beaked above the navel by a ſhort knob, flattiſh on both ſides, marked in the middle with a broad ferruginous ſpot[c]. From which circumſtance, I preſume, and not from the corolla, Linnæus derived the trivial name. Linnæus, indeed, ſays the corolla is red, John Bauhin that it is purple, Rivinus that it is blue or red. With us it is blue. Native of the South of France, Spain, Italy and Sicily. It flowers in july, and was cultivated by Gerarde in 1596[d].]

4. This is an annual plant, which riſes with a ſtrong, firm, channelled ſtalk from three to four feet high, covered with a ſoft brownish down, dividing upward into ſeveral ſtrong branches, garniſhed with digitate leaves, compoſed of nine, ten, or eleven wedge-ſhaped hairy leaflets, which are narrow at their baſe where they join the foot-ſtalk, but enlarge upward, and are rounded at the top where they are broadeſt; the foot-ſtalks of the leaves are three or four inches long. The flowers are placed in whorls round the ſtalks above each other, forming a looſe ſpike, which proceeds from the end of the branches. They are large, and of a beautiful blue colour, but have no ſcent. They appear in july, and the ſeeds ripen in autumn. The pods are large, almoſt an inch broad, and three inches long; incloſing three large roundiſh ſeeds, compreſſed on their ſides, very rough, of a purpliſh brown colour.

There is a variety with fleſh-coloured flowers, commonly called Roſe Lupine. It differs only in the colour of the flower, but that difference is permanent. [See the next ſpecies.

In its wild ſtate this plant has quinate leaves, on long petioles; the leaflets are ſpatulate: the flowers blue: the legumes, and the whole plant clothed with long cloſe ferruginous hairs. The flowers are often lateral[e].

The native place of this ſpecies is given very differently; by Linnæus, Arabia, the iſlands of the Archipelago and Spain. Miller ſays it is ſuppoſed to be a native of India. Parkinſon reports, that it is thought to come from beyond Perſia, in Caramania. In the Kew catalogue it is aſſigned to the South of Europe and the Levant. It was cultivated here in 1629[f].

5. This has the ſtature of the preceding. It is a hairy plant. The corollas are pale fleſh-colour, with the middle of the banner red. Leaves lanceolate, bluntiſh[g]. Native of the South of Europe. Cultivated by Mr. Miller in 1731. It flowers in july and auguſt[h].]

6. This has much the appearance of the third ſort, but the ſtalks riſe higher, the leaves have more leaflets, and ſtand upon longer foot-ſtalks; the leaflets are blunt; and the ſeeds are variegated. [According to Linnæus, the leaflets are linear, and the flowers are blue.

Ray deſcribes it as reſembling the third ſort, but more upright, and much taller, being eighteen inches high, and as tall as the white or cultivated Lupine. Leaflets narrow, commonly nine, blunter at the end than in the other ſorts, ſo as to have the appearance of being truncate.—Seeds ovate-globular, equally turgid all round, duſky aſh-coloured variegated with duſky branching ſpots, and whitiſh dots fewer in number; they are ſmooth, and ſmaller than all the reſt. Navel obſolete[i].

Native of Spain and Sicily. Cultivated in 1731, by Mr. Miller[k]. Mr. Ray informs us, that the ſeeds were ſent to him from Cadiz; it is probable, therefore, that he cultivated it before 1686.]

7. Stem a foot high, branching. Leaves digitate, compoſed of ſeven, eight or nine narrow hairy leaflets, near two inches long. Flowers yellow, odorous, in looſe ſpikes at the end of the branches, compoſed of ſeveral (ſix or ſeven) whorls, with ſpaces between them, (and about five flowers in each) terminated by three

[a] Villars. [b] Hort. kew. [c] Hall. 907. [d] Gerarde. [e] Hort. kew. [f] Linn. [g] Hort. kew. from Park. par. [h] Linn. ſyſt. [i] Hort. kew. [k] Gartner. [l] Hort. kew.

or foot flowers, ſitting cloſe at the top; theſe are ſucceeded by ovate ſtatuſh hairy pods, about two inches long, ſtanding erect, and including three, four or five roundiſh ſeeds, a little compreſſed, yellowiſh white, variegated with dark ſpots.

[According to Krocker, the ſtem is upright, from a foot to eighteen inches high. Leaves on very long petioles; (near three inches in length:) leaflets nine, oblanceolate-linear, quite entire, divided by a thick nerve. Lower lip of the calyx trifid, the ſegments linear. Bractes of the whorls ovate, concave, blunt, upright.]

Native of Sicily (and Sileſia) flowering in june and july. [Cultivated by Gerarde in 1596 [1].

8. Stem herbaceous annual roundiſh upright ſtriated two feet high, with aſcending branches. Leaves emarginate ſmooth whitiſh alternate. Flowers yellow, terminating, in ſpikes. Legume oblong turgid bluntly three-cornered tailed ſmooth, containing ſeveral orbicular uncinated ſeeds. Native of Cochinchina and Bengal.

9. Stem ſhrubby, three feet high, with diffuſed branches. Leaves ſmooth, on alternate petioles. Flowers yellow. Native of the eaſtern coaſt of Africa [2].

10. Stem ſimple, a foot high, angular, ſomewhat rugged at the angles. Leaves alternate, crenate-toothed, glaucous beneath, ſomewhat rugged at the nerves, two oppoſite ſubſeſſile, the third petioled; the petiole an inch and half long, blunt beneath, channelled above, running down the ſtem which it marks with grooves. Stipules awl-ſhaped, fixed on each ſide to the baſe of the petiole. Flowers blue, in ſhort axillary ſpikes. Calyx ſhort, ſubvilloſe, hemiſpherical; the upper teeth very ſhort, divaricating, the three lower longer, the middle one more produced. Banner of the corolla ovate plaited: wings ſhorter, concealed within it: keel almoſt equal to it, compreſſed, parted at bottom, with capillary claws. Legume upright, ending in a horned point, one-celled, many-ſeeded, with three grooves at the back. Seeds ſubovate, ſubreniform, a little compreſſed. Native of Mexico. Cultivated in the royal garden at Madrid, before 1791. It flowers there in july [3].]

PROPAGATION AND CULTURE.

Theſe plants are cultivated for ornament in the borders of the flower-garden, where they are ſown in patches with other annuals in the ſpring, where they are to remain; thinning them where they are too cloſe, and keeping them clean from weeds.

To have a ſucceſſion of flowers, the ſeeds may be ſown at different times, viz. in april, may and june, but the ſeeds of thoſe only which are firſt ſown will ripen.

1. The firſt ſort only is perennial. This, however, is propagated by ſeeds as the former, which ſhould be ſown where the plants are to remain; for although the root is perennial, yet it runs ſo deep into the ground that it cannot be taken up entire; and if the root is cut or broken, the plant ſeldom thrives well after. I have traced ſome of the roots of this plant, which have been three feet deep in the ground in one year from ſeed, and ſpread out as far on every ſide, ſo that they muſt have room, therefore the young plants ſhould not be left nearer than three feet aſunder. If this plant is in a light dry ſoil, the roots will continue ſeveral years, and produce many ſpikes of flowers; and although the uſual ſeaſon of flowering is in june and july, yet when rain falls in auguſt, freſh ſtalks ariſe from the roots, which flower at the end of ſeptember, or beginning of october.

2. The ſeeds of the ſecond ſort were formerly uſed in medicine; and are ſometimes eaten in Italy, but they are bitter, and are accounted hard of digeſtion.

This and the ſmall blue Lupine (n. 3.) are frequently ſown in Italy, to manure the ground, eſpecially that which is intended for vineyards. They plough them into the ground as ſoon as they begin to flower.

4. 5. Theſe are generally late in ripening the ſeeds, ſo that unleſs the autumn prove warm and dry, they do not ripen; therefore the beſt way to have good ſeeds, is to ſow them in ſeptember cloſe to a warm wall on dry ground, where they will live through our ordinary winters; and theſe plants will flower early the following ſummer, ſo there will be time for the ſeeds to ripen before the rains fall in the autumn, which frequently cauſes the ſeeds to rot which are not ripe. If a few of the ſeeds of both are ſown in ſmall pots the beginning of ſeptember, and when the froſts begin, the pots are removed into a common hot-bed frame, where they may be protected from hard froſt, but enjoy the free air in mild weather, the plants may be thus ſecured in winter; and in the ſpring they may be ſhaken out of the pots, preſerving the earth to their roots, and planted in a warm border, where they will flower early, and produce very good ſeeds.

All the ſorts of Lupines make a pretty appearance when they are in flower, but the yellow ſort is preferred for its ſweetneſs, though the flowers of this are of ſhort duration, eſpecially in warm weather; therefore the ſeeds ſhould be ſown at ſeveral times, that there may be a ſucceſſion of flowers through the ſeaſon, for they will continue flowering till they are ſtopped by hard froſt; and thoſe which come in the autumn to flower, will continue in beauty a longer time than the early ones. If ſome of the ſeeds are ſown in the autumn on a warm border, the plants will often live through the winter, and flower early in the ſpring.

[Lupulo ſimilis. See *Urtica*.

LUPULUS. See *Dalechampio*, *Gouania*, *Humulus*.]

LUTEOLA. See *Datiſca* and *Reſeda*.

[LUTUM. See *Reſeda*.

LYCHNANTHUS. See *Cucubalus*.]

LYCHNIDEA. See [*Buchnera*, *Erinus*,] *Phlox*, *Silene*.

LYCHNIS (*of Pliny. Λυχνος of Theophraſtus and Dioſcorides. From λυχνος, lucerna, a lamp. The cotton of the leaves having been uſed to make wicks; or the flowers being of a flame-colour; or perhaps becauſe the capſule is ſhaped like a lamp: but all this is conjecture.*)

Lin. gen. n. 584. *Reich. n.* 636. *Schreb. n.* 796. *Gærtn. t.* 130. *Tournef. t.* 175. *Juſſ.* 302.

Claſſ. 10. 4. Decandria Pentagynia.

Nat. order of *Caryophylli*.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, oblong, membranaceous, five-toothed, permanent.

COR. *Petals* five; *claws* the length of the calyx, flat, margined: *border* often cloven, flat.

STAM. *Filaments* ten, longer than the calyx, alternately ſhorter, each of theſe fixed to a claw of each petal. *Anthers* incumbent.

PIST. *Germ* ſubovate. *Styles* five, awl-ſhaped, longer than the ſtamens. *Stigmas* reflex againſt the ſun, pubeſcent.

PER. *Capſule* approaching to an ovate form, covered, one, three or five-celled, five-valved.

SEEDS very many, roundiſh.

OBS. L. dioica *has the ſexes diſtinct, and the capſule one-celled, ten-valved at the tip.*—In L. chalcedonica *it is alſo one-celled, but five-valved at the tip.*

L. Viſcaria *has undivided petals, and a five-celled capſule.*

L. quadridentata *varies with three, four and five ſtyles.*

L. alpina *has four ſtyles.* (*Six and more.* Villars.)

The greater part of the ſpecies (1 *to* 4, 10 *to* 12) *is one-celled.*

ESSENTIAL CHARACTER.

Cal. one-leafed, oblong, even. *Petals* five, with claws, and a ſubbifid border. *Capſ.* five-celled. (in moſt one-celled. *G.*)

SPECIES.

1. Lychnis chalcedonica. *Scarlet Lychnis.*
Lin. ſpec. 625. *ſyſt.* 435. *Reich.* 2. 395. *hort. cliff.* 174. *upſ.* 115. *Gærtn. fruct.* 2. 229. *Gmel. ſib.* 4. 144. *Thunb. jap.* 188. *Mor. hiſt. ſ.* 5. *t.* 21. *f.* 14. *Ger.* 380. *emac.* 466. *Curt. magaz.* 257.

α. L. ſurſuta, flore coccineo, major. *Bauh. pin.* 203. *Raii hiſt.* 992.

L. chalced. flore ſimplici miniato. *Park. parad.* 253. *t.* 255. *f.* 3.

Flos

[1] Hon. kew. [2] Lourreiro. [3] Cavanilles.

Flos conſtantinopolitanus. *Dod. pempt.* 178. *Boſſ. cyſt. addit.* 9. *t.* 5. *f.* 1.
Single-flowered Scarlet Lychnis.
β. L. hirſuta, flore candido, major. *Tournef. inſt.* 334.
Single-flowered Blaſh Lychnis.
γ. L. chalced. flore pleno miniato ſ. aurantiaco. *Boerh. lugdb.* 1. 211.
Double-flowered Scarlet Lychnis.
Flowers faſcicled faſtigiate.

2. Lychnis Flos cuculi. *Red-flowered Meadow Lychnis.*
Lin. ſpec. 625. *ſyſt.* 435. *Reich.* 2. 395. *hort. cliff.* 174. *fl. ſuec. n.* 408. *Hudſ. angl.* 199. *Wither. arr. ed.* 3. 432. *Curt. lond.* 1. 33. *obr. t.* 4. *Lightf. ſcot.* 239. *Relb. cant. n.* 336. *Hall. helv. n.* 921. *Scop. carn. n.* 528. *Pollich. pal. n.* 438. *Leers. herborn. n.* 349. *Neck. gallob.* 202. *Villars dauph.* 3. 638. *Kroch. ſileſ. n.* 698. *Gmel. ſib.* 4. 145. *Fl. dan. t.* 590. *Knipb. cent.* 11. *n.* 65. *Weigel. fl. pomer. n.* 292.
α. Caryophyllus pratenſis. *Tabern.* 291.—flore laciniato ſimplici l. Flos cuculi. *Baub. pin.* 210.
L. prat. flore lacin. ſimpl. *Mor. hiſt.* 2. 537. *ſ.* 5. *t.* 20. *f.* 8.
L. plumaria ſylveſtris ſimplex. *Park. parad.* 253. *Raii hiſt.* 1000. *ſyn.* 338. *Pet. brit. t.* 56. *f.* 6.
Armerius ſylveſtris. *Dod. pempt.* 177.
A. pratenſis. *Ger.* 480. 1. 2. *emac.* 600. 1.
Flos cuculi. *Trag.* 403. *Lonic.* 1. 171. 1.
Cuculi flos, Odontites quibuſdam. *Baub. hiſt.* 3. 347.
Odontites Plinii. *Cluſ. hiſt.* 1. 202. 2.
Single red-flowered Meadow Lychnis.
β. *Single white-flowered Meadow Lychnis.*
Armoraria prat. flore albido elegantiori. *Phyt. brit.* & *Merr. pinn.*
γ. L. caule erecto, calycibus ſtriatis acutis, petalis diſſectis. *Mill. fig.* 114. *t.* 170. *f.* 2.
L. plumaria multiplex. *Park. parad. t.* 255. *f.* 5.
Armoraria pratenſis flore pleno. *Ger. emac.* 600. 3. *Phyt. brit.* & *Merr. pin.*
Odontites flore pleno. *Cluſ. hiſt.* 1. 293. 1.
Double red-flowered Meadow Lychnis.
Petals quadrifid, fruit roundiſh one-celled.

[3. Lychnis alpeſtris.
Lin. ſyſt. 435. *ſuppl.* 244. *Retz. obſ.* 5. 4. *n.* 62.
Alſine alpina glabra, ſol. reflexo. *Pluk. phyt. t.* 75. *f.* 5.
Petals four-cleft crowned, leaves recurved.

4. Lychnis quadridentata.
Lin. ſyſt. 435. *Reich.* 2. 396. *Scop. carn. n.* 519.
Silene quadrifida. *Lin. ſpec.* 602. *Jacqu. auſtr.* 2. *t.* 120.
Cucubalus quadrifidus. *Lin. ſpec. ed.* 1. 414.
L. alpina, &c. *Segu. veron.* 3. 186. *t.* 5. *f.* 1.
L. ſaxatilis, &c. *Till. piſ.* 106.
L. viſcoſa anguſtifolia major. *Baub. pin.* 205.
Petals four-toothed, ſtem dichotomous, leaves ſmooth reverſed.

5. Lychnis coronata. *Chineſe Lychnis.*
Lin. ſyſt. 435. *Thunb. jap.* 187.
L. grandiflora. *Jacqu. ic. cellect.* 1. 149. *L'Herit. ſtirp. nov.* 2. *t.* 18.
Smooth, flowers axillary and terminating ſolitary, petals laciniated.

6. Lychnis Viſcaria. *Viſcous Lychnis* or *Catchfly.*
Lin. ſpec. 625. *ſyſt.* 435. *Reich.* 2. 396. *fl. ſuec. n.* 409. *Hudſ. angl.* 199. *Wither. arr. ed.* 3. 433. *Lightf. ſcot.* 239. *Hall. helv. n.* 927. *Scop. carn. n.* 529. *Pollich. pal. n.* 439. *Gmel. ſib.* 4. *Villars dauph.* 3. 638. *Kroch. ſileſ. n.* 699. *Fl. dan. t.* 1032. *Knipb. cent.* 12. *n.* 69.
L. ſylveſtris viſcoſa rubra anguſtifolia. *Baub. pin.* 205. *Park. theat.* 637. *f.* 6. *Raii hiſt.* 1000. *ſyn.* 340. *Pet. brit. t.* 57. *f.* 3.
L. viſcoſa ſylv. præcox flore incarnato. *Mor. hiſt. ſ.* 5. *t.* 20. *f.* 6.
L. ſylveſtris 4. *Cluſ. hiſt.* 1. 289. 2.
L. ſylv. purpurea. *Tabern.* 294.
Odontidi ſ. Flori cuculi affinis Lychnis ſylveſtris. *Baub. hiſt.* 3. 348. 2.
Muſcipula anguſtifolia. *Ger. emac.* 601. 3.

β. Floribus plenis. *Catchfly with double flowers.*
Petals nearly equal.

7. Lychnis alpina. *Alpine Lychnis.*
Lin. ſpec. 626. *ſyſt.* 435. *Reich.* 2. 397. *fl. ſuec. n.* 410. *Hall. helv. n.* 922. *t.* 17. *Allion. pedem. n.* 1593. *Villars dauph.* 3. 639. *Fl. dan. t.* 65.
Silene lapponica. *Lin. lapp. n.* 185. *Hall. helv. ed.* 1. 376. *t.* 7.
L. pyrenaica umbellifera minima. *Tournef. inſt.* 338.
Petals bifid, flowers four-ſtyled.

[8. Lychnis lœta.
Small Portugal Lychnis or *Campion.*
Ait. hort. kew. 2. 118.
Petals bifid, flowers ſolitary, leaves linear-lanceolate ſmooth, calyxes ten-keeled.)

9. Lychnis ſibirica. *Siberian Lychnis.*
Lin. ſpec. 626. *ſyſt.* 435. *Reich.* 2. 397.
Petals bifid, ſtem dichotomous, leaves ſomewhat rough-haired.

10. Lychnis diurna. *Roſe-flowered Lychnis,* or *Wild Red Campion.*
Silth. oxon. n. 424.
L. dioica. *Lin. ſpec.* 626. *ſyſt.* 436. *Reich.* 2. 397. *hort. cliff.* 171. *fl. ſuec. n.* 411. *Curt. lond.* 2. 32. *Lightf. ſcot.* 240. *Hall. helv. n.* 923. *Gmel. ſib.* 4. 137. *Neck. gallob.* 201. *Scop. carn. n.* 530. 2. *Pollich. pal. n.* 440. β. *Leers. herborn. n.* 350. *Allion. pedem. n.* 1592. *Kroch. ſileſ. n.* 700. *Knipb. cent.* 11. *n.* 64. *Weigel. fl. pomer. n.* 294. A.
L. dioica mas. *Hudſ. angl.* 199.
L. dioica diurna. *Wither. arr. ed.* 3. 431.
L. rubra dioica. *Villars dauph.* 3. 639.
L. ſylveſtris ſ. aquatica purpurea ſimplex. *Baub. pin.* 204. *Tournef. inſt.* 335.
L. ſylv. rubello flore. *Lob. obſ.* 181. 2. *Ger. emac.* 467. 1. *Raii hiſt.* 994. *ſyn.* 339. *Pet. brit. t.* 57. *f.* 6.
L. ſylv. flore rubro. *Park. theat.* 630. 2.
L. ſylv. purp. *Dod. pempt.* 171. 1.—ſimplex. *Mor. hiſt. ſ.* 5. 21. 23.
Cucubalus. *Lin. lapp. n.* 182.
Melandrium Plinii genuinum. *Cluſ. hiſt.* 1. 294. 1.
Ocymaſtrum rubrum. *Tabern.* 299.
Ocymoides purpureum. *Baub. hiſt.* 3. 343. *Camer. epit.* 739.
β. L. purpurea multiplex. *Baub. pin.* 204. *Ger. emac.* 472. 1.
Double Roſe-flowered Lychnis.
Flowers dioecous, capſules one-celled roundiſh.

11. Lychnis veſpertina. *White-flowered Lychnis,* or *Wild White Campion.*
Silth. oxon. n. 425.
L. dioica β. *Lin. ſpec.* 626. *Reich.* 2. 398. β. *Relb. cant. n.* 337. *Hall. helv. n.* 923. γ. *Scop. carn. n.* 530. 1. *Pollich. pal. n.* 440. α. *Allion. pedem. n.* 1592. B. *Kroch. ſileſ. n.* 700. β. *p.* 78. *Fl. dan. t.* 792. *Berg. phyt.* 2. 23. *Plenck. ic.* 355.
L. dioica fœmina. *Hudſ. angl.* 199. β.
L. dioica veſpertina. *Wither. arr. ed.* 3. 431. *var.* 2.
L. alba dioica. *Villars. dauph.* 3. 640. *Weig. fl. pomer.* 294. B.
L. alba. *Mill. dict. n.* 4.
L. ſylveſtris alba ſimplex. *Baub. pin.* 204. *Tournef. inſt.* 335. *Gerid.* 290.
L. ſylv. flore albo. *Ger. emac.* 470. *f.* 8. *Park. theat.* 630. 1. *Raii hiſt.* 994. *ſyn.* 339. *Pet. brit. t.* 57. *f.* 5.
L. ſylv. hirſuta alba ſimplex. *Mor. hiſt.* 5. 21. 21.
Cucubalus. *Lin. hort. cliff.* 170.
Ocymoides album. *Baub. hiſt.* 3. 342.—majus. *Matth.* 997. *Dalech.* 682.
β. L. alba multiplex. *Baub. pin.* 204. *Ger. emac.* 472. 2.
Double White-flowered Lychnis.
Flower dioecous, capſules one-celled conical.

12. Lychnis apetala.
Lin. ſpec. 626. *ſyſt.* 436. *Reich.* 2. 398. *fl. ſuec. n.* 412. *Gmel. ſib.* 4. 137. *Fl. dan. t.* 806.
Cucubalus. *Lin. lapp. n.* 181. *t.* 12. *f.* 1.
Calyx inflated, corolla ſhorter than the calyx, flowers hermaphrodite, one or two on the ſtem.

DESCRIPTIONS, &c.

1. [The ſingle Scarlet Lychnis has a perennial root: ſtems three feet high, upright, ſtiff, round, jointed, hairy: at every joint two large leaves of a browniſh green colour: flowers terminating, in a large flat-topped tuft, conſiſting of ſeveral bundles. Corolla of a ſcarlet or bright red orange colour, varying to white, bluſh, and variable, that is, pale red, growing paler till it becomes almoſt white, (var. β.); petals broad at the end and emarginate.—Capſule clothed with the membranaceous calyx, ſtriated with ten villoſe nerves, ovate, narrowing downwards, ſmooth, one-celled, opening into five parts at the top. Receptacle columnar, cylindrical, free, grooved and excavated, naked. Seeds numerous, angular-kidney-ſhaped, rugged with acuminate tubercles in rows, ferruginous [a].

Native of Ruſſia, and Japan. Cultivated in 1596, by Gerarde [b]. In his time it was common in almoſt every garden; but he does not mention any of the varieties. Parkinſon in 1629, and Johnſon in 1633, have the varieties; but the latter ſays, that "the white "and bluſh ſingle and the double one are not to be "found but in the gardens of our prime Floriſts."

Theſe authors call it Flower of Conſtantinople, Campion of Conſtantinople, Flower of Briſtow, and Noon-ſuch; it ſeems to have loſt theſe names, and to be known generally by the name of Scarlet Lychnis. The French call it *Lychnide de Calcedoine, Croix de Jeruſalem* ou *de Malthe*. The Italians alſo name it *Croce de Cavaliere*; the Spaniards *Cruces de Jeruſalem*; and the Portugueze *Cruz de Malta*.]

7. The variety with double flowers is a valuable plant, the flowers are very double, and of a beautiful ſcarlet colour. This has a perennial root, from which ariſe two, three, or four ſtalks, according to the ſtrength of the roots; theſe in rich moiſt land, grow upwards of four feet high; the ſtalks are ſtrong, erect, and hairy. They are garniſhed the whole length with ſpear-ſhaped leaves ſitting cloſe to the ſtalks, placed oppoſite; and juſt above each pair of leaves, there are four ſmaller leaves ſtanding round the ſtalk. The flowers are produced in cloſe cluſters ſitting upon the top of the ſtalk; when the roots are ſtrong, the cluſters of flowers will be very large, and make a fine appearance. They appear the latter end of june, and in moderate ſeaſons continue near a month in beauty. The ſtalks decay in autumn, and new ones ariſe in the ſpring.

2. [Root perennial, browniſh white, ſubacrid. Stems from one to three feet high, upright, ſomewhat angular and grooved, ſwelled at the joints, purpliſh. Linneus remarks, that they are procumbent, and become upright at the time of flowering. Stem-leaves oppoſite, connate, lanceolate, keeled, upright, ſmooth. Peduncles oppoſite, with one generally between them. Calyx ten-angled, of a deep purple colour. Corolla pink or purpliſh red, varying ſometimes to white; the border of the petals dividing into four ſegments, of which the two outer are ſhorter and narrower; the claws have two ſmall ſpear-ſhaped teeth at the top. Capſule one-celled, the mouth having five teeth which turn back. Seeds flattiſh, rugged, of a brown aſh colour [c].

Native of moſt parts of Europe in moiſt meadows: flowering in may and june.

This plant has a variety of names in Engliſh, as Meadow Pink, Wild Williams, Cuckow Flower, Ragged Robin, Crow-flower. Parkinſon calls it feathered wild Campion; Gerarde, Crowe flowers, wilde Williams, marſh Gilloflowers, and Cockowe Gilloflowers; Ray, Meadow Campion; to Mr. Curtis Meadow Lychnis ſeems moſt eligible. Several plants have the name of Cuckow-flower from their appearing about the ſame time with that bird. Gerarde ſays the true Cuckow-flower is *Cardamine pratenſis*. Shakſpeare's Cuckow-buds are of yellow hue, and probably *Ranunculus* or Crowfoot. Orchis, Arum and Oxalis or Wood-ſorrel are all called by ſome after the Cuckow. Goats, ſheep and horſes are ſaid to eat it; but it ſeems generally agreed that none of our domeſticated quadrupeds are fond of it. The beauty of the flowers entitles it to a place in the gardens of the curious [d].]

7. The variety with double flowers is frequently cultivated in flower-gardens for ornament. It only differs from the ſingle in the multiplicity of the petals, and is commonly known by the title of Double Ragged Robin. [Some call it, ſays Parkinſon, the Fair Maide of France. It is ſometimes found wild in England, as near Bungay in Suffolk by Mr. Woodward.

3. Root perennial. Stems a ſpan high, upright, ſmooth. Leaves linear-lanceolate, ſmooth. Flowers in a dichotomous panicle. Calyx ſmooth, with blunt teeth. Petals white, the length of the calyx. Styles four or five. Capſule longer than the calyx [e]. Native of Switzerland and Auſtria.

4. Stems a ſpan high, with the upper joints viſcid. Leaves lanceolate, an inch long. Calyx viſcid, three lines long, with headed villoſe hairs on it, ten-ſtreaked, bluntly toothed. Petals white, emarginate, with a tooth on each ſide above the middle, border four-lobed, ſpreading, the middle lobes larger and rounded, the lateral ones acute; ſegments of the earlets blunt, ovate. Germ on a columnar receptacle. Capſule one-celled, ſix-valved, with a linear receptacle. Seeds compreſſed, kidney-ſhaped (10 fifty) ruſtous, with the edges lacerate-ciliate. Styles four or five [f], very ſeldom three. Native of Auſtria.

5. The whole plant is ſmooth. Stem ſimple round upright, a foot high. Leaves oppoſite, embracing, oblong-ovate, acute, entire, an inch or a little more in length. Flowers aggregate, about three, ſeſſile. Calyx ten-angled. Petals gaſhed, crenate-multifid. Filaments the length of the tube of the coroila, filiform. Germ ſuperior. Styles five, much ſhorter than the tube of the corolla [g]. Native of China and Japan. Introduced in 1774, by John Fothergill, M.D. It flowers in june and july [h].]

6. This has long, narrow, graſs-like leaves, which come out from the root without order, ſitting cloſe to the ground; between theſe come up ſtraight ſingle ſtalks, which in good ground riſe a foot and half high; at each joint of the ſtalk come out two leaves oppoſite, of the ſame form as the lower, but decreaſing in their ſize upwards; under each pair of leaves, for an inch in length, there ſweats out of the ſtalk a glutinous liquor, which is almoſt as clammy as birdlime, ſo that ants and other inſects which happen to light upon theſe places, or attempt to creep up to the flowers, are faſtened to the ſtalk, whence this plant has the title of Catchfly. The ſtalk is terminated by a cluſter of purple flowers, and from the two upper joints come out on each ſide of the ſtalk a cluſter of the ſame flowers, ſo that the whole forms a ſort of looſe ſpike. Theſe appear in the beginning of may, and the ſingle flowers are ſucceeded by roundiſh ſeed-veſſels, which are full of ſmall angular ſeeds ripening in july.

[Root perennial, yellowiſh on the outſide, white within. Stem round not grooved, ſmooth. Leaves connate, upright, ciliate at the baſe, lanceolate-acuminate, quite entire, with a red tip, three inches long, three lines wide, bright green, ſmooth. Flowers terminating in cloſe whorls all together forming a ſpike; others come out from the axils on long pedincles. Very ſmall lanceolate red bractes ſeparate the flowers; which are ſeven lines or ſomewhat more in diameter. Calyx purple, ſwelling, viſcid, with ten red ſtreaks. Petals entire, ſometimes ſlightly waved about the edge and emarginate at the top, bright red-purple, with white claws, almoſt half an inch long, and three lines wide, having two appendicles at the throat. Capſule conical, five-celled. Seeds kidney-ſhaped, rugged.—It varies with white flowers; and is ſold in foreign countries for Centaurium minus [i].

Native of moſt parts of Europe, in dry and mountainous paſtures, eſpecially among buſhes. In Britain it is rare. Lhwyd and Tancred Robinſon found it in Wales. Thomas Willifell upon the rocks in Edinburg Park. And Mr. Crowe near Croyden, in Surrey. It

[a] Curtis. [b] Lion. ſuppl. [c] Scopoli.
[d] Thunberg. [e] Hort. kew.
[f] Pollich. Krocker. Haller.

flowers in may and june. In Engliſh it is named, narrow-leaved Catchfly or Limewort, Red German Catchfly, Catchfly Cuckow-flower, and Viſcous Lychnis.

7. Root perennial. Root-leaves in a tuft, linear, ſlightly keeled, acute, ſmooth, thickiſh, ſomewhat channelled, ſubciliate at the baſe. Stem a finger, half a foot or a ſpan in height, ſimple, round, upright, having four or five joints flatted a little at top. Stem-leaves narrow, pointed, upright, ſomewhat rugged; the uppermoſt membranaceous. Flowers collected into a thyrſe or corymb, on three-flowered very ſhort peduncles. Bractes between the flowers ſubdiſphanous. Calyx pale, with blunt concave claws. Petals purple, cloven half way, ſharp, without any crown. Anthers red. Germ roundiſh. Styles four or five. It reſembles the preceding ſpecies very much, but is not viſcous[a]. It is only half the ſize; the petals are not entire, but cloven. The piſtils, which are often ſix and even more, are ſhorter than the petals before the flowers open, but during the time of flowering lengthen gradually till they become longer than the petals[b].

Native of the Alps in Europe, and Siberia. Cultivated in 1768 (1759) by Mr. Miller. It flowers in april and may[c].] Mr. Miller ſays the beginning of june, and that the ſeeds ripen in auguſt.

[In the Kew catalogue it is marked as biennial. Allione ſays it is perennial: that the calyx is inflated; petals deeply cut, with the coronal ſcales linear: ſtyles five, longer than the flower.

8. This is an annual plant, native of Portugal. Introduced in 1778, by Edward Gray, M.D. It flowers in july[d].]

9. Root perennial, from which ariſe many narrow leaves ſitting cloſe to the ground. Stalks a foot high, dividing into branches by pairs. Flowers from the diviſion of the branches, and at the top of the ſtalks. Petals white. Capſules roundiſh. Seeds ſmall, angular.

[This has the ſtature of S. rupeſtris, but the root is perennial, the leaves are leſs ſmooth, and the five ſtyles diſtinguiſh the plant. Native of Siberia[e]. Cultivated by Mr. Miller in 1759.

10. Root perennial, the thickneſs of the little finger, white, of a ſlightly acrid and bitter taſte, furniſhed with numerous fibres. Stalks ſeveral, upright, from one to three feet high, round, hirſute, jointed, purple; the joints ſwelled, the uppermoſt branches forked. Leaves oppoſite, connate, ovate-acuminate, hirſute, ſlightly nerved. Calyx hairy, ſtriated, purple, five-toothed; in the female more turgid. Petals purple, obcordate: at the bottom of the lamina or broad ſpreading part are two or four ſmall upright white blunt appendicles. Germ ovate, ſurrounded by a nectary at the baſe. Capſule one-celled, with ten teeth at the mouth. Seeds gray, ſomewhat rugged.

Native of many parts of Europe, in moiſt ſhady ditches, by the ſides of hedges, and ſometimes in woods, flowering in may and june[f].

Johnſon in Gerarde calls this plant Red or Roſe wild Campion; Parkinſon, Red Wild Campion; and Ray, Red-flowered Wild Campion.]

β. A variety of this with double flowers is cultivated in gardens by the name of Red Batchelor's Buttons. It is an ornamental plant, and continues long in flower.

11. The White Wild Campion was regarded as a diſtinct ſpecies from the preceding or Red by all the old Botaniſts. Linnæus ſuppoſed them to be only varieties, and he has been followed by moſt modern botaniſts; by ſeveral however with marks of doubt. I am not for multiplying ſpecies; and the leſs ſo, becauſe this rage which prevailed ſo much at the beginning of this century, ſeems to be recurring at the end of it. In this caſe however I muſt own it was always my opinion that the Red and White Lychnis differed ſpecifically. I had indeed almoſt given up my opinion to Linnæus's ſuperior authority and judgement; but finding on examination that I am ſupported by ſeveral good judges, I have ventured to ſeparate them.

The two plants agree in moſt points of the above deſcription, they certainly correſpond in ſtructure, both have male and female flowers on ſeparate roots, and both are ſometimes found with hermaphrodite flowers[g]. There are many circumſtances however in which they differ, whether ſufficiently or not to conſtitute different ſpecies, let others determine from more accurate examination or from culture.

Mr. Miller, who regards them as diſtinct ſpecies, informs us that the ſtalks of this are branched out much more than in the Red, the leaves are longer and more veined, the flowers ſtand ſingly upon pretty long peduncles, and are not produced in cluſters as in the Red, it is very hairy, the calyx is more ſwollen, and it flowers a month after the Red.

Ray obſerves, that in the Red the ſtems are weaker and more flaccid than in the White.

Dr. Withering remarks, that in the White the petals on the male plant have the lamina divided down to the claws, but in the female they are only cloven half way down. Whether this may be the caſe in the Red, I have not an opportunity of obſerving, that not growing in the country where I now am, and authors not having remarked the circumſtance.

Allione follows Linnæus, Haller, Scopoli, &c. in not ſeparating this from the preceding. He thinks however that they are ſpecifically different, becauſe he obſerves that the Red grows only in mountainous and watery places, and that it is not ſo much branched and ceſpitoſe as the White.

Krocker reports, that in Sileſia the plant with white flowers is entirely different from that which has red: the ſtem being higher, more diffuſed, ſuberect; the leaves longer but narrower, leſs hirſute, with whitiſh veins; the joints of the ſtalk bigger; calyxes in the male cylindrical, in the female ventricoſe, in both longer than in the Red, whitiſh, with ten green veins; the claws of the petals longer, the petals themſelves white, with white appendicles or earlets; anthers aſh-coloured; ſtyles white: this is common in fields &c., that only on mountains.

But the late lamented Dr. John Sibthorp is the firſt among the moderns who has dared to give them as diſtinct ſpecies; having remarked that in the Red Lychnis the capſules are roundiſh, and that its ſcentleſs flowers ſtand open through the day; whereas the White has conical capſules, and its odoriferous flowers open only towards evening. Hence his ſpecific characters, and elegant trivial names: both which I have adopted.

The colour, with other circumſtances relative to the two plants, led Mr. Curtis to ſuſpect that they are not varieties but diſtinct ſpecies, and he remarks that cultivation and farther attention to them will probably enable him to ſpeak of this with more certainty. Mr. Robſon, having cultivated both, he is ſatisfied they are diſtinct ſpecies, though both liable to change the colour of their flowers to fleſh-colour[h].

To all this we may add that the Red and White affect different ſituations, and are never found promiſcuouſly. The White is frequent in fallow fields, ſometimes ſo plentifully as to make them appear at a diſtance quite white; but the Red is never found there. The White ſeems to prefer dry ſoils, and the Red moiſt ones. The former is very common in Sweden, not ſo the latter. No one ever ſaw the Red Campion in the County of Cambridge, though the White is common there, and the Red no leſs common in ſome of the neighbouring counties. Mr. Lightfoot ſays, the rocks in the iſland of Ailſa are covered with the red-flowered only. According to Kroecker, the White is very common in Sileſia on the borders of fields, but the Red is found only in the mountainous parts. So alſo ſays Allione, that the Red occurs in wet ſhady places and ſprings at the foot of the Alps; but that the White is every where common in the plains by hedges, ditches and highways. And Pollich, that the White is every where on banks, among buſhes, by walls

[a] Linn. ſuec. & ſyſt. [b] Villars. [c] Hort. kew.
[d] Ibid. [e] Linn. ſpec. [f] Curtis.
[g] Withering. [h] Ibid.

walls and among rubbiſh; the Red in woods and hedges. And Villars, that the Red occurs on the Alps and mountains by the ſides of ſtreams; differing from the White not only in colour and place, but in having the upper leaves coloured, and the calyx villoſe without any diſtinct veins. The White is found in ſtony places, by way ſides, in low ſituations; its calyx is thicker, harder, almoſt cartilaginous, covered with veins forming a kind of net.

There are ſeveral varieties of the White Campion. 1. With purple or bluiſh-coloured flowers. Mr. John Templeton of Orange Grove near Belfaſt informs me, that a White female Campion brought into his garden, having red males not far diſtant, but no white ones, produced offspring with bluiſh-coloured flowers.—2. With quadrifid petals[1].—3. With hermaphrodite flowers. Both red and white indeed are ſubject ſometimes to this variation. Many authors mention it, but it does not ſeem to occur very frequently. Linnæus ſays, *varias hermaphr. edidit*: I found it only once, namely on the ſixth of June 1765, near Cambridge, among other plants which had male and female flowers diſtinct. The germ was of the uſual ſize, full of ſeeds; the piſtils were very ſhort, the anthers four times as large as in the common male flowers, with the pollen of a duſky purple colour. Though I had not the good fortune to exhibit the monſter, as Linnæus did in the year 1752, to above an hundred pupils, *ne de exiſtentia ejus quis dubitet*, yet I ſhall hope to meet with the credit of the candid, though Leers ſays that he never had the good fortune to ſee it.]—4. With double flowers, cultivated in gardens by the name of Double White Batchelor's Buttons. An ornamental plant in the flower-garden, though it does not make ſo good an appearance as the Double Red.

12. [Root fibrous. Stem ſingle, upright, a ſpan high, entire, having three or four joints, ſcarce apparently rugged. Leaves oppoſite, linear-lanceolate, the upper ones ſhorter and narrower; at the root are four leaves, from two neighbouring joints. A ſingle flower terminates the ſtem, nodding horizontally. Calyx ovate, inflated, with ten brown hiſpid raiſed lines, and a five-toothed blunt mouth, almoſt cloſed. Petals oblong; claws three-cornered flat, upright; border ſcarcely any, emarginate, duſky, ſhorter by half than the calyx. Stamens ſhorter than the calyx, but rather longer than the corolla. Germ oblong. Styles five, a little longer than the ſtamens, but ſhorter than the calyx. Capſule cylindrical, oblong, a little attenuated in the middle, blunt, concealed within the calyx, one-celled[2].

Although it be very diſtinct and conſtant, with hermaphrodite flowers, yet there is no doubt but that it owes its origin to L. dioica[3].

Native of the mountains of Lapland and Siberia. In the latter it occurs with ſeveral flowers on the ſtem[4]. Cultivated by Mr. Miller in 1759.]

Mr. Miller has another ſort, which he calls L. luſitanica, it having been introduced from Portugal by John Browning, Eſq. of Cheſſea, Maſter in Chancery, a great cultivator of exotic plants, before 1759. He thinks it probably a variety of one with ſingle flowers that is wild in that country, and that it approaches neareſt to the Double Ragged Robin. It is perennial, with many oblong narrow leaves ſitting cloſe to the ground. It divides into ſeparate heads, like L. Viſcaria, and from each of theſe comes out an upright ſtalk nine inches high, dividing at top by pairs, and from the middle of each diviſion comes out a ſlender pedunclе two inches long, with one double purple flower at the top, the petals of which are much jagged, and the calyx marked with deep purple ſtripes; there are other pedunclеs from the axils, ſuſtaining one or two flowers.—May not this be a variety of L. Leea, n. 8.

PROPAGATION AND CULTURE.

1. Single Scarlet Lychnis is eaſily propagated by ſeeds, which ſhould be ſown on a border expoſed to the eaſt, in the middle of march. The plants will appear in april, when if the ſeaſon is dry, they ſhould be refreſhed with water two or three times a week. By the beginning of june the plants will be fit to remove, when there ſhould be a bed of common earth prepared to receive them; into which they ſhould be planted at about four inches apart, obſerving to water and ſhade them till they have taken root; after which time they will require no other care but to keep them clean from weeds till the following autumn, when they ſhould be tranſplanted into the borders of the pleaſure-garden, where they are to continue. The ſummer following theſe plants will flower and produce ripe ſeeds, but the roots will abide ſeveral years, and continue to flower. This ſort flowers in june and july, and the ſeeds ripen in autumn. It may alſo be propagated by off-ſets, but as the ſeeds ripen ſo freely, few perſons trouble themſelves to propagate the plants any other way.

2. Double Scarlet Lychnis is propagated by ſlips taken from the roots in autumn; but as this is a ſlow method of increaſing the plants, the beſt way to have them in plenty, is to cut off the flower-ſtalks in june before the flowers appear, which may be cut into ſmall lengths, each of which ſhould have three or four joints, which ſhould be planted on an eaſt border of ſoft loamy earth, putting three of the joints into the ground, leaving one eye juſt level with the ſurface; theſe muſt be watered, and then covered cloſe with bell or hand-glaſſes, ſo as to exclude the outward air, and ſhaded with mats when the ſun ſhines hot upon them. The cuttings ſo managed will put out roots in five or ſix weeks, when they muſt be expoſed to the open air, and in very dry weather they ſhould be now and then refreſhed with water, but it muſt not be repeated too often, nor given in large quantities, for too much moiſture will cauſe them to rot. Theſe will make good plants by the following autumn, when they may be tranſplanted into the borders of the pleaſure-garden, where they will flower the following ſummer.

Some people who are covetous to have their plants flower, ſuffer the ſtalks to remain till the flowers are decayed, and then cut them off to plant; but by that time the ſtalks are grown hard, ſo but few of them ſucceed, and thoſe which do, will not be near ſo good plants as thoſe which are planted earlier; therefore it will be better to ſacrifice the flowers of ſome roots for this purpoſe. Theſe plants delight in a ſoft, rich, loamy ſoil, not too moiſt or ſtiff, in which they will thrive and flower very ſtrong, but they do not care for much dung, which very often cauſes the roots to canker and rot, ſo that in the rich dunged lands about London, they do not thrive well. As theſe plants grow tall, they ſhould be planted in the middle of large borders, and not crowded with other plants, for their roots extend to a large diſtance, ſo if they are incommoded by other roots, it will ſtint their growth.

I have not ſeen any double flowers of the two other varieties, but have been informed that there are of both the white and the fleſh-colour with double flowers in ſome of the French gardens. Theſe make a variety, but are not ſo beautiful as the ſcarlet, ſo are not much eſteemed.

2. The ſingle Meadow Lychnis is not kept in gardens, though by no means deſtitute of beauty; but the variety with very double flowers is propagated for ornament. It is commonly known by the name of Double Ragged Robin, and is increaſed by ſlipping the roots in ſeptember.

6. Viſcous Lychnis or Red German Catchfly was formerly cultivated in flower-gardens, but ſince the variety with double flowers has been produced, the ſingle one has been neglected. It may however be propagated in plenty by parting the roots in autumn, at which time every ſlip will grow; or if the ſeeds are ſown in the ſame manner as is directed for the firſt ſort, the plants with ſingle flowers may be raiſed in plenty. This delights in a light moiſt ſoil and a ſhady ſituation.

β. The double flowering has not been known forty years in the Engliſh gardens, but it is now ſo common as to have excluded that with ſingle flowers; it differs only from that in the doubleneſs of the flowers. As this never produces ſeeds, it can only be propagated by parting and ſlipping the roots; the beſt time for this

[1] Leers. [2] Linn. Supp. [3] Linn. Syſt. [4] Linn. Spec.

this is in autumn, at which time every flip will grow. If this be performed in September, the flips will have taken good root before the froft, and will flower well the following fummer; but if they are expected to flower ſtrong, the roots muſt not be divided into ſmall flips, though for multiplying the plants, it matters not how ſmall the flips are. Theſe ſhould be planted on a border expoſed to the morning ſun, and ſhaded when the ſun is warm till they have taken root. If the flips are planted in the beginning of September, they will be rooted ſtrong enough to plant in the borders of the flower-garden by the middle or latter end of October. The roots of this multiply ſo faſt, as to make it neceſſary to tranſplant and part them every year; for when they are let remain longer, they are very apt to rot. This requires the ſame ſoil and ſituation as the ſingle.

7, 8. Theſe are propagated by ſeeds, and alſo by parting the roots. They muſt have a moiſt ſoil and ſhady ſituation. The roots may be parted, and the plants removed in autumn. The ſeeds may be ſown upon a ſhady border in march, keeping the ground moiſt in dry weather. When the plants are of a ſize to remove, tranſplant them into a ſhady border, where they may remain to flower.

10, 11. The double varieties of Red and White Wild Campions, commonly called Red and White Batchelor's Buttons, are ornamental plants, and conſtitute long in flower. They are propagated by flips, planted the beginning of auguſt in a ſhady border of loamy earth, where they will take root in ſix weeks or two months, and may then be tranſplanted into the borders of the flower-garden. Theſe roots ſhould be annually removed, otherwiſe they frequently rot: and young plants muſt be propagated by flips to ſupply the decay of the old roots, which are not of very long duration. The Red thrives beſt in a ſoft loamy ſoil, and in a ſhady ſituation, where it has only the morning ſun.

The Double White Batchelor's Button does not make ſo good an appearance as the Red. This will thrive in a drier ſoil, and a more open expoſture.

Portugal Lychnis is increaſed by flips, in the ſame manner as theſe, but coming from a warm country, it is impatient of cold, and will not live through the winter in an open border, nor does it thrive well in a pot. It ſucceeds beſt when planted cloſe to a ſouth wall in dry unhunged earth, or brick rubbiſh; for in rich or moiſt ground the roots peciently rot, as they do alſo when they are watered.

LYCHNIS. See *Agrostemma* [*Cynoſſbum*, *Cherleria*, *Cucubalus*, *Frankenia*, *Gypſophila*, *Heliosperma*, *Plumbago*] *Saponaria*, *Silene*, [*Viſcaria*.

LYCHNIS-SCABIOSA. See *Knautia*.

LYCHNITIS. See *Anthyllis* and *Verbaſcum*.

LYCHNOIDES. See *Arenaria*, and *Polion*.

LYCH SIMILIS } See *Siderexylon*.]
LYCIOIDES }

LYCIUM. (*Acacia of Dioſcorides. Suppoſed to be ſo called from its being a native of Lycia.*)

Lin. gen. n. 262. *Reich. n.* 273. *Schreb. n.* 343. *Gaertn. t.* 172. *Juſſ.* 126. Jaſminoides. *Niſſ. in act. gall.* 1711.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Luridæ*.—*Solanæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* ſubquinquefid, obtuſe, erect, very ſmall, permanent.

COR. monopetalous; funnel-form. *Tube* cylindric, ſpreading, incurved. *Border* five-parted, obtuſe, ſpreading, ſmall.

STAM. *Filaments* five, awl-ſhaped, from the middle of the tube, ſhorter than the corolla, cloſing the tube with a beard. *Authers* erect.

PIST. *Germ* roundiſh. *Style* ſimple, longer than the ſtamens. *Stigma* bifid, thickiſh.

PER. *Berry* roundiſh, two-celled.

SEEDS ſeveral, kidney-form. *Receptacles* convex, affixed to the partition.

ESSENTIAL CHARACTER.

Cor. tubular, cloſed at the throat by the beard of the filaments. *Berry* two-celled, many-ſeeded.

SPECIES.

[1. Lycium japonicum. *Japan Box-thorn.*
Lin. ſyſt. 228. *Thunb. jap.* 93. *t.* 17. *Curt. magaz.* 361.
L. fœtidum. *Lin. ſuppl.* 150. *Juſſ.* 128. 5.
L. indicum. *Retz. obſ.* 2. 12. *n.* 21. & 5. 2. *n.* 33.
Unarmed, leaves ovate nerved flat, flowers ſeſſile.

2. Lycium barbarum.
Lin. ſyſt. 228. *Thunb. prodr. cap.* 37.
L. inerme. *Lin. ſuppl.* 150.
Unarmed, leaves ovate ſmooth, branches flexuoſe, flowers panicled.]

3. Lycium afrum. *African Box-thorn.*
Lin. ſpec. 277. *ſyſt.* 228. *Reich.* 1. 525. *hort. cliff.* 57. *upſ.* 47. *Murr. in comm. gott.* 1779. *p.* 12. *Trew. Ehret.* 4. *t.* 24. *Knipb. cent.* 11. *n.* 66. *Mill. fig. t.* 171. *f.* 2. *Plunk. ic.* 127.
Jaſminoides africanum, Jaſmini aculeati foliis & facie. *Niſſ. act.* 1711. 420. *t.* 12. *Dill. gen.* 159. *Mich. gen.* 224. 3.
β. L. faſcifolium. *Mill. dict. n.* 3.
Rhamnus alter, foliis faſcis, flore purpureo. *Bauh. pin.* 477.
R. alter Cluſii *hiſt.* 109. *Lob. ic.* 180.—flore purp. *Ger. emac.* 1334.
R. 1. alter. *Dod. pempt.* 754.
Rhamni primi Cluſii ſpecies altera. *Bauh. hiſt.* 1. 32. *Park. theat.* 1005. *n.* 3. 1006. *f.* 3. *Raii hiſt.* 1592.
Thorny, leaves linear faſcicled, branches ſtiff.

[4. Lycium ruthenicum.
Lin. ſyſt. 228. *Murr. in comm. gott.* 1779. *p.* 2. *t.* 2.
Thorny, leaves linear faſcicled, branches hanging down.

5. Lycium tetrandrum.
Lin. ſyſt. 228. *ſuppl.* 150. *Thunb. prodr. cap.* 37.
Thorny, leaves ovate obtuſe, branches angular, corollas four-cleft.

6. Lycium boerhaaviæfolium. *Glaucous-leaved Box-thorn.*
Lin. ſyſt. 228. *ſuppl.* 150.
L. heterophyllum. *Lin. ſyſt.* 228. *Murr. in comm. gott.* 1783. *p.* 6. *t.* 2.
Ehretia halimifolia. *L'Herit. ſtirp. nov.* 45. *t.* 23.
Jaſminoides ſpinoſum fol. rotund. flor. ſubcæruleis Lilac ſpiranthus. *Dubam. arb. n.* 5.
Thorny, leaves ovate quite entire acute glaucous, flowers panicled.

7. Lycium barbarum. *Willow-leaved Box-thorn.*
Lin. ſpec. 277. *ſyſt.* 228. *Reich.* 1. 525. *mant.* 341. *Murr. in comm. gott.* 1779. *p.* 12. *Knipb. cent.* 9. *n.* 62. *Trew. Ehret.* 33. *t.* 68. *Gærtn. fruct.* 2. 242. *Thunb. prodr. cap.* 37.]
L. halimifolium. *Mill. dict. n.* 6.
Jaſminoides aculeatum humile, halimi minoris folio, fructu per maturitatem flavefcente. *Mich. gen.* 224. *t.* 105. *f.* 1.
Style the length of the ſtamens.
β. L. chineníe. *Mill. dict. n.* 5. *Chineſe Box-thorn.*
L. barbarum. *Lour. cochinch.* 133.
Jaſminoides ſinenſe, halimi folio longiore & anguſtiore. *Dubam. arb.* 1. 306. *t.* 121. *f.* 4. *Burm. ind.* 59.
Style longer than the ſtamens.
Thorny, leaves lanceolate, branches lonſe, calyxes bifid.

[8. Lycium europæum. *European Box-thorn.*
Lin. ſyſt. 228. *Reich.* 1. 526. *mant.* 47. *cir. cliff.* 14.
Jaſminoides aculeatum, ſalicis folio, flore parvo ex albo purpuraſcente. *Mich. gen.* 224. *t.* 105. *f.* 1.
Rhamnus ſpinis oblongis, flore canlicante. *Bauh. pin.* 477. *Raii hiſt.* 1492.
R. 1. Cluſ. *hiſt.* 109. *Dod. pempt.* 754.—flore albo. *Ger. emac.* 1334.
R. 2. Monſp. 1. 1. Clnſ. *Park. theat.* 1005. *n.* 2. 1006. *f.* 2.
Thorny, leaves oblique, branches flexuoſe round.

9. Lycium tataricum. *Tartarian Box-thorn.*
Pall. roſſ. 1. 78. *t.* 49. *Murr. in comm. gott.* 4.
An Rhamnus altera ſpecies. *Cluſ. hiſt.* 109.
Thorny, leaves linear faſcicled, branches ſupine.

10. Lycium

10. Lycium capſulare.
Lin. ſpec. 278. *Jaſſ.* 128. *Reich.* 1. 526. *amoen.* 4. 308.
Thorny, leaves lanceolate thin ſmooth, pedunculs and calyxes pubeſcent, pericarpe capſular.

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11. Lycium cinereum.
Thunb. prodr. cap. 37.
Thorny, leaves lanceolate ſmooth, branches ſpinoſcent, pedunculs very ſhort.
12. Lycium horridum.
Thunb. prodr. cap. 37.
Thorny, leaves obovate fleſhy ſmooth, branches ſpinoſcent, pedunculs very ſhort.
13. Lycium cochinchinenſe.
Lour. cochinch. 134.
Unarmed, leaves oblong blunt, cymes terminating.

DESCRIPTIONS, *&c.*

1. This ſhrub is ſcarcely a fathom in height, very much branched, upright. Branches and branchlets ſcattered, round, ſlender or filiform, aſh-coloured, ſmooth, ſpreading, drooping at top. Leaves oppoſite, ſubſeſſile, attenuated below, blunt with a point, quite entire, ſmooth, ſpreading, dark green above, half an inch long: there are cluſters of many ſmaller leaves in the axils. Flowers on the branchlets from a cluſter of leaves, ſeſſile, upright, ſolitary or aggregate, deciduous. Calyx much ſhorter than the corolla, ſmooth, five-toothed. Tube of the corolla greeniſh-white, a line in length: ſegments of the border ovate, pale fleſh-colour, a little ſhorter than the tube; the opening of which is cloſed with villoſe hairs. Filaments faſtened to the tube longitudinally below the opening. Anthers oblong, ſtanding a little, white. Germ ſuperior. Style capillary, white, the length of the corolla. Stigmas two, ſeldom three, oblong, whitiſh, villoſe. It varies with double flowers [a].

It occurs twice in Syſt. veget. In the Supplement it was named fœtidum. Kæmpfer and Koenig having reported that the bruiſed leaves ſmell like dung; which is not true of this ſhrub, but of a tree called by the Dutch *Struntboat* [b].

It is deſcribed by Retzius from Koenig's ſpecimens. It is made a diſtinct genus under the name of Seriſſa, by L'Heritier called Buchozia, and by Loureiro Dyſoda.

Native of Japan; Thouin found it in China, and Koenig in Madeira [c]. Introduced in 1787, by Monſ. Cels. It flowers here moſt part of the Summer [d]. In Japan, from april to november. This ſmall handſome ſhrub is planted frequently for hedges in Japan [e].

2. Native of the Cape of Good Hope, where it was found by Thunberg. This ſtands in the Supplement under the name of L. inerme. Mr. Miller has one (n. 9.) with the ſame name; but his is a Chineſe plant.

3. This riſes with irregular ſhrubby ſtalks ten or twelve feet high, ſending out ſeveral crooked knotty branches, covered with a whitiſh bark, and armed with long ſharp ſpines, upon which grow many cluſters of narrow leaves; theſe thorns often put out one or two ſmaller on their ſides, which have ſome cluſters of ſmaller leaves upon them; the branches are garniſhed with very narrow leaves an inch and a half long, and at the baſe of theſe come out cluſters of ſhorter and narrower leaves. The flowers come out from the ſide of the branches, ſtanding upon ſhort foot-ſtalks; they are of a dull purple colour. The berry is of a yelloweiſh colour when ripe, incloſing ſeveral hard ſeeds. This uſually flowers in june and july, and the ſeeds ripen in the autumn; but frequently a few flowers come out in all the ſummer months.

[Stem ſtraight, rigid. Flowers very dark purple. Berries globular, very dark red [f].

Native of the Cape of Good Hope, where ſheep feed on it.—Cultivated in 1714, by the Dutcheſs of Beaufort [g].]

[a] Thunberg. [b] Retzius. faſc. 2. [c] Linn. ſuppl. [d] Hort. kew. [e] Thunberg. [f] Linn. [g] Hort. kew.

6. This has many irregular ſhrubby ſtalks, which riſe eight or nine feet high, ſending out ſeveral irregular branches, covered with a white bark, and armed with pretty ſtrong thorns; the leaves are narrow at bottom, growing broader upward, and are of a pale green colour. The flowers come out from the ſide of the branches; they are of a purpliſh white colour and ſmall, and make no great appearance. This ſort flowers in june and july, but rarely produces any ſeeds in this country. The leaves remain till winter, when they fall off.

It is a native of the South of France, Spain and Italy, in hedges.

[4. This is a ſhrub of about ſix feet high, if meaſured to the tips of the pendent branches: the ſtems are many, branching almoſt immediately from the root; branches long, dependent, or procumbent, unleſs ſupported; of the thickneſs of a tobacco-pipe, round, ſpinoſe, leafleſs; decompoſed from about the middle, where they ſhoot into ſmaller branchlets, which are ſpiny, very ſpreading, and leafy towards their tips. Leaves faſciculated, growing by fives and ſometimes by nines, or more, juicy, linear, glauceſcent, obtuſe at margin and tip, attenuated towards the baſe. Flowers two or four together, outwardly pale, and of a greenith-purple; within purple, with a pale throat, marked by fifteen deeper ſtreaks; ſtamens longer than the corolla; anthers ſulphur-colour, oblong, incumbent.

5. This reſembles L. afrum very much, inſomuch that it may be doubted whether its fleſhineſs and the prevalence of the number four in the fructification, make it a diſtinct ſpecies. Found at the Cape of Good Hope by Thunberg [h].

6. Stem upright, round, branched, full of chinks aſh-coloured. Branches alternate, ſpreading, ſmooth. Spines axillary, ſolitary, ſpreading very much, awl-ſhaped, ſhorter than the petiole. Leaves alternate, ſpreading, from twelve to twenty lines long, from eight to fifteen lines wide. Petioles one third of the length of the leaves, ſpreading very much, round, pale purple. Panicle leafy, from the end of the ſhoots, racemed at top. Flowers peduncled, upright, white. Bractæ ſmall, linear, acute, under each pedunele. Corolla blue, ſmelling very ſweet: tube ſtraight, longer than the calyx; ſegments of the border ovate, ſharpiſh, ſpreading or reflex. Filaments upright, longer than the corolla, inſerted at the baſe of the tube, cloſing the tube with a villoſe beard. Anthers roundiſh, acuminate, two-celled, peltate, white. Germ ſuperior, ovate, with a conical tip, and a tubercle on each ſide of the baſe. Style the length of the ſtamens. Stigma varying; headed, or oblong ſubbivalve, or bifid acute ſubreflex, green. Berry placed on the calyx, globular, fleſhy, two-celled, two-ſeeded, yellow. Seeds ſolitary, bony, three-toothed at the baſe, gibbous on one ſide, ſtartiſh on the other, two-celled. It has the flowers of Lycium, with bearded ſtamens; but the fruit of Ehretia, with bony, three-toothed, two-celled ſeeds, but only two in number. It varies with waved leaves.

Native of Peru, where it was found by Dombey, Joſ. Juſſieu introduced it many years ſince into the Paris garden, where it flowers in ſummer and autumn, but ſeldom produces berries [i]. Introduced here in 1780, by Monſ. Thouin [k].

7. This is a weak ſhrub, nodding and decumbent unleſs ſupported. Bark of the branches whitiſh. Flowers from each bud from two to five, each on its proper pedunele. It differs from all the other ſorts, in having the mouth of the calyx two-lobed, or ſometimes three-lobed. Border of the corolla ſpreading, with the throat pale ſtreaked with black, and purple or pale red within. Four ſtamens the length of the whole corolla, the fifth ſhorter. Berries ovate, yellow [l], or vermilion red, fleſhy, with a longitudinal depreſſed ſtreak on each ſide, ſmooth, ſhining, two-celled: partition fleſhy, narrow, correſponding with the outer groove. Receptacle ovate-globular, fleſhy,

[h] Linn. ſuppl. [i] L'Heritier. [k] Hort. kew. [l] Linn. ſpec. and mant.

excavated, red, intimately connate with the partition. Seeds about twelve in each cell, roundish, compressed, with small raised dots on them, whitish [a].

Native of Europe, Asia and the Cape of Good Hope. Cultivated in 1759, by the Dutchess of Beaufort. It flowers from may to october [b].

1. barbarum (n. 4.) of Miller is that which was brought from Africa by Dr. Shaw. It has a shrubby stalk seven or eight feet high, sending out several irregular branches, armed with strong spines, and furnished with short thick leaves. The flowers, which come out from the side of the branches, are small and white. They appear in july and auguſt but do not produce seeds in England.

1. halimifolium (n. 6.) of Miller, to which he attributes the synonym of Duhamel, here given under the Chinese variety, is given by Reichard as a synonym to L. barbarum. Miller says, it is a native of China, whence the seeds were brought to the Paris garden, and thence sent to him by Bernard de Jussieu.—The stalk is four or five feet high, sending out many irregular branches, covered with a very white bark, and armed with a few short spines. Leaves about three inches long, and one inch broad in the middle, alternate, pale green. The flowers appear in june and july, and are succeeded by small round berries that ripen in the autumn, when they are as red as coral.

3. L. chinense (n. 5.) of Miller rises with weak irregular diffused branches to a great height; requiring support: some of these branches have in one year been upwards of twelve feet long. The lower leaves are more than four inches long, and three broad in the middle; they are of a light green and a thin consistence, placed without order on every side the branches. As the shoots advance in length, the leaves diminish in size, and towards the upper part they are not more than an inch long, and a quarter of an inch broad; they sit close to the stalks on every side. The flowers come out singly at every joint towards the upper part of the branches, on short slender peduncles: they are of a pale colour with short tubes; the brims are spread open broader than either of the former sorts, and the style is considerably longer than the tube of the corolla.

It flowers in auguſt, september and october, and retains its leaves till november. It is a native of China, whence the seeds were brought to England a few years before (1759), and being raised in several gardens, by some were thought to be the Thea.

[Loureiro, who observed it about Canton, describes it to be four feet high, cryptotle, upright, with rising branches, and straight solitary scattered prickles. Leaves lanceolate, quite entire, smooth, in clusters or scattered. Flowers purple, solitary, axillary, on a long reflex peduncle. Calyx upright, trifid with one segment two-toothed. Stamens as long as the corolla, closing the throat with a dense beard. Berry small, red, ovate, two-celled, containing many seeds.—The Chinese use a decoction in wine, or an infusion in water, of the berries as a tonic, analeptic and cephalic.]

4. This differs from L. barbarum in being able to stand upright without affiſtance; in having the leaves, though lanceolate as in that, not flat but oblique or flexuose; the branchlets flexuose, not rendered angular by a line running down from the petiole; the surface not smooth but subtomentose; and finally, spines from every bud. It differs from L. afrum in having lanceolate leaves, and round flexuose branchlets.

Native of the South of Europe [c]: as Spain, Portugal and the South of France, observed by Clusius; and by Ray about Montpelier and Florence, flowering both in march and autumn. Clusius says they eat the tender shoots in Spain, with oil and vinegar: and Micheli, that it is used for hedges in Tuscany, where they call it *Spina da serare di crocifiſſi*; supposing it, in common with several other prickly shrubs, to be that which afforded the crown of thorns to our Saviour before his crucifixion.—It was introduced in 1780, by Peter Simon Pallas, M. D.[d]

9. This is an elegant shrub, on account of the whiteneſs of the branches, rods or twigs, which are many, a foot or eighteen inches long or more, branched, ascending. Spines alternate, awl-shaped, rigid, spreading, white or yellowish, surrounded with leaves and flowers at the base. Leaves sessile, fleshy, blunt. Flowers from the upper part of the twigs among the leaves, two or three to each spine, on short peduncles. Calyx bell-shaped, widish, subbilabiate, the upper lip trifid, the lower bifid. Tube of the corolla white, a little crooked at top, spreading out into a purple border with blunt segments: anthers simple, incumbent. Style inflex at top, with a simple stigma. It varies with four and six stamens, and the same number of segments in the corolla. Berries the size of a Currant, black and succulent. Seeds most frequently ten, kidney-form. It differs from L. europæum, to which it bears great affinity, in size, and both the colour and form of the flower.

Native of Tartary about the Volga; in the deſerts of Turcomannia and Hyrcania, especially in sandy soils replete with nitre. When out of flower it bears great resemblance to Nitraria, except that it is more thorny. Gmelin observed a dwarf and very thorny variety in the sands near the Caspian sea [e]. Is not this the species said in the Kew catalogue to have been introduced by Pallas; the learned professor having, as he informs us, taken it originally to be L. europæum?

10. This is said by Linnæus to be a native of Mexico, on the authority of Miller: but we do not find it among his species.

Miller has set down ten species, which we are at a loss to make out satisfactorily. The first, third and eighth seem to be the *afrum*. The fourth, fifth and sixth belong to *barbarum*. The second and seventh are inhabitants of the Cape, and may be the *afrum* or varieties of it: but why the second should have the name of *italicum* I am at a loss to imagine.] L. inerme (n. 9.) was raised by him from Chinese seeds, and was for many years taken for the Tea-tree, till it produced flowers. It rises with a strong woody stalk six or seven feet high, sending out many smooth branches, covered with a brown bark, and having no thorns. Leaves lanceolate, three inches long, and near three quarters of an inch broad, alternate, on short petioles; they are of a deep green, and continue all the year. The flowers are white, and have not been followed by seeds. [May not this be the same with the cochinchinense of Loureiro? L. cordatum (n. 10.) is Arduina bispinosa.

11, 12. Natives of the Cape of Good Hope [f].

13. This shrub is four feet high, almost upright, branched. Flowers white, in pedimcled cymes. Border of the corolla reflex. Stamens nearly equal to the corolla, with many hairs filling up the tube of the corolla. Berry roundish, two-celled.

Native of Cochinchina, in woods [g].]

PROPAGATION AND CULTURE.

1. 2. 3. 5. 6. 11. 12. These plants may be increased by seeds, cuttings or layers. If by seeds, they should be sown in the autumn soon after they are ripe; for if they are kept out of the ground till spring, they seldom come up the first year. If the seeds are sown in pots, the pots should be plunged into some old tan in the winter, and in very severe frost covered with Peas-haulm or straw, but in mild weather should be open to receive the wet; in the spring the pots should be plunged into a moderate hot-bed, which will soon bring up the plants; these must be inured to bear the open air as soon as the danger of frost is over, and when they are three inches high, they may be shaken out of the pots, and each planted in a small separate pot, filled with loamy earth, and placed in the shade till they have taken new root, when they may be removed to a sheltered situation, where they may remain till the autumn; then they should be either removed into the green-house, or placed under a hot-bed frame

[a] Gærtner. [b] Hort. kew. [c] Linn. mant. [d] Hort. kew. [e] Pallas. [f] Thunberg. [g] Loureiro.

to shelter them from hard froft; for thefe plants being too tender to live in the open air in England, they muft be kept in pots and treated in the fame way as Myrtles, and other hardy green-houfe plants; but when the plants are grown ftrong, there may be a few of them planted in the full ground in a warm fituation, where they will live in moderate winters, but in hard frofts they are commonly deftroyed. If the cuttings of thefe plants are planted in a fhady border in July, and duly watered, they will take root, and may then be treated in the fame way as the feedling plants.

This is the common mode of increafing them, for fome never produce feeds in England.

4. 8. 9. Are hardy plants, and may be increafed by cuttings or layers.

7. Is alfo increafed by cuttings, planted in the fpring, before they begin to fhoot, in a border expofed to the morning fun. Thefe fhould not be removed till the autumn, when they may be planted to cover walls, for the branches are too weak to fupport themfelves.

β. Increafes faft by its creeping roots; and the cuttings will take root as freely as Willows.

Several of thefe fhrubs from China and the Cape will bear the open air in a warm fituation and dry foil, when they have once acquired ftrength; except in very fevere winters: efpecially if the roots be covered with litter, and the branches with mats.

[LYCIUM. See *Arduina, Barleria, Berberis, Cariffa, Ceanothus, Celaftrus, Gnidia, Randia, Rhamnus, Sideroxylon.*

LYCOCTONUM. See *Aconitum.*

LYCOCALA. See *Mucor.*

LYCOPERDASTRUM. } See *Lycoperdon.*
LYCOPERDOIDES. }

LYCOPERDON. (*So named by Tournefort, from λυκος, lupus, & περδω, pedo, q. lupi crepitum dicentes.*)

Lin. gen. n. 1217. *Reich. n.* 1333. *Schreb. n.* 1683. *Tournef. t.* 331. *Mich. t.* 97. *Vaill. bot. par.* 16. 4.—10. Boviſta. *Dill.* Lycoperdoides. *Mich. t.* 98. Lycoperdaſtrum. *Mich. t.* 99. Geaſter. *Mich. t.* 100. Carpobolus. *Mich. t.* 101.

Claſſ. 24. 6. Cryptogamia Fungi.
Nat. order of *Fungi* or *Muſhrooms.*

GENERIC CHARACTER.

Fungus roundiſh, fleſhy, firm: becoming powdery and opening at the top. Seeds fixed to filaments connected with the inner coat of the plant.

SPECIES, *&c.*

Only eleven ſpecies are enumerated in Murray's edition of Syſtema Vegetabilium. Dr. Withering has twenty-five Britiſh Species in the third edition of his Arrangement. And ſome of Linnæus's ſpecies are diſpoſed of under other genera. Thus the moſt intereſting of the number, L. Tuber, with the other ſolid Lycoperdons, is ſeparated, and made a diſtinct genus, under its old name of Tuber.

Theſe ſingular Fungi are diſtinguiſhed and deſcribed by Dr. Withering: and are figured by Micheli, Battarra, Batſch, Schæffer, Sterbeck, Schmidel, Bulliard, Bryant, Dickſon, Smith, Sowerby, Bolton, Blackſtone, Dillenius, Vaillant; in the Flora Danica, Ray's Synopſis, Philoſophical Tranſactions, &c. There is alſo an elaborate diſſertation on the Britiſh Stellated Lycoperdons by Mr. Woodward, in the ſecond volume of the Tranſactions of the Linnean Society of London.

LYCOPERSICON. See *Solanum.*

LYCOPODIOIDES. See *Lycopodium.*

LYCOPODIUM. (λυκος ποδιον, *Wolf's-foot, Wolf's-claw Moſs.*)

Lin. gen. n. 1185. *Reich. n.* 1302. *Schreb. n.* 1615. *Dill. muſc.* 441. Selaginoides. *Dill. muſc.* 460. Lycopodioides. *Dill. muſc.* 462. Selago. *Dill. muſc.* 435.

Claſſ. 24. 1. Cryptogamia Miſcellaneæ.
Nat. order of *Muſci* or *Moſſes.*

GENERIC CHARACTER.

Fruſtifications in the axils of the ſcales digeſted into oblong imbricate ſpikes, or of the leaves themſelves, ſeſſile.

Cerf. kidney-ſhaped, two-valved, elaſtic, many-ſeeded. *Veil* none.

SPECIES, *&c.*

Twenty-nine ſpecies are enumerated in Syſt. veget. by Murray. Only ſix of theſe are natives of Britain They are figured by Dillenius and others.

LYCOPSIS (*of Pliny.* Λυκοψις *of Dioſcorides. From* λυκος *a wolf, and* οψις *the face. The corolla being ringent, and having the appearance of a grinning mouth.*)

Lin. gen. n. 190. *Reich. n.* 202. *Schreb. n.* 250. *Gærtn. t.* 67. *Juſſ.* 131. Echioides. *Dill. gen.* 3.

Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Aſperifolia. Borragineæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-parted: *ſegments* oblong, acute, ſpreading, permanent.
COR. one-petalled, funnel-form. *Tube* cylindric, from curved bent. *Border* half-five-cleft, blunt. *Throat* cloſed with five convex prominent converging ſcales.
STAM. *Filaments* five, very ſmall, at the bending of the tube of the corolla. *Anthers* ſmall, covered.
PIST. *Germ* four. *Style* filiform, the length of the ſtamens. *Stigma* blunt, bifid.
PER. none. *Calyx* very large, inflated.
SEEDS four, longiſh.
OBS. *The eſſence of the genus conſiſts in the curvature of the tube of the corolla.*

ESSENTIAL CHARACTER.

Cor. with the tube bent in.

SPECIES.

1. Lycopſis veſicaria. *Bladder-podded wild Bugloſs.*
Lin. ſpec. 198. *ſyſt.* 188. *Reich.* 1. 399. *hort. cliff.* 44. *upſ.* 35. *Knipb. cent.* 1. 55. *Krock. ſileſ. n.* 290.
Echioides flore pullo. *Riv. mon.* 11.
Bugloſſum procumbens annuum, pullo minimo flore. *Mor. hiſt.* 3. 439. *ſ.* 11. *t.* 26. *f.* 11.
B. ann. pullo flore min. veſicarium. *Raii hiſt.* 495. 7.
Leaves quite entire, ſtem proſtrate, fruiting calyxes inflated pendulous.
2. Lycopſis pulla. *Dark-flowered wild Bugloſs.*
Lin. ſpec. 198. *ſyſt.* 188. *Reich.* 1. 400. *Gærtn. fruct.* 1. 327. *Jacq. auſtr.* 2. 53. *t.* 188. *Krock. ſileſ. n.* 289.
Echium ſylveſtre lanuginoſum. *Bauh. pin.* 254.
E. pullo flore. *Cluſ. hiſt.* 2. 164. *Ger. emac.* 802. *f.* 3. *Park. theat.* 415. *f.* 4. *Raii hiſt.* 495.
Bugloſſum ſylveſtre majus nigrum. *Bauh. pin.* 256.
Leaves quite entire, ſtem upright, fruiting calyxes inflated pendulous.
3. Lycopſis ægyptia. *Egyptian Wild Bugloſs.*
Lin. ſyſt. 189.
Leaves quite entire rugged, ſtems aſcending, fruiting calyxes inflated pendulous.
4. Lycopſis variegata. *Variegated Wild Bugloſs.*
Lin. ſpec. 198. *ſyſt.* 189. *Reich.* 1. 400. *hort. upſ.* 34. *cliff.* 44. *Knipb. cent.* 6, *n.* 57. *Zan. hiſt.* 57.
Lycopſis cretica. *Riv. mon.*
Anchuſa cretica. *Mill. dict. n.* 7.
Bugloſſum creticum verrucoſum. *Stiff. hor. t.* 57.
B. annuum humile, bullatis fol. flore cæruleo elegantèr variegato. *Mor. hiſt.* 3. 439. *ſ.* 11. *t.* 26. *f.* 10.
B. luſitanicum bull. foliis. *Mor. prælud. Raii hiſt.* 495. 9.
Leaves repand toothed callous, ſtem decumbent, corollas drooping.
[5. Lycopſis arvenſis. *Small wild Bugloſs.*
Lin. ſpec. 199. *Reich.* 1. 400. *ſ. lapp. n.* 77. *ſuec. n.* 167. *hort. cliff.* 44. *Hudſ. angl.* 82. *Wither. arr. ed.* 3. 231. *Curt. lond.* 5. 49. 336. *Lightf. ſcot.* 135. *Relh. cant. n.* 154. *Gron. virg.* 20. *Fl. dan. t.* 435. *Hall. helv. n.* 605. *Pallich pal. n.* 182. *Gmel. narv. n.* 498. *Neck. gallob.* 102. *Krock. ſileſ. n.* 291. *Villars dauph.* 2. 460. *Knipb. cent.* 3. *n.* 61.
Echioides. *Riv. mon. t.* 7. *f.* 2. *Dill. app.* 100.
Bugloſſum minus ſylveſtre. *Bauh. pin.* 256. *Blackw. t.* 234. *Park. theat.* 765. 3. *Mor. hiſt. ſ.* 11. *t.* 26. *f.* 8.

Buglossa sylv. *Ded. pempt.* 628.—minor. *Ger. emac.* 799. *f.* 3. *Raii hist.* 394. *syn.* 227.

Echium. *Fuchs.* 269.—1. Borago sylvestris. *Bauh. hist.* 3. 481.

Leaves lanceolate hispid, flowering calyxes upright.

6. Lycopsis bullata. *Bladdery-leaved wild Buglosse.* *Curtis. mscp.* 1. 34. *t.* 11. *f.* 3.

Leaves lanceolate-ovate hispid bladdery, stem procumbent.

7. Lycopsis orientalis. *Oriental wild Buglosse.* *Lin. spec.* 199. *Reich.* 1. 401.

Buglossum orientale angustifolium, flore parvo cæruleo. *Tournef. cor.* 6.

Leaves ovate quite entire rugged, calyxes upright.

8. Lycopsis virginica. *Virginian wild Buglosse.* *Lin. spec.* 199. *Reich.* 1. 401. *Gron. virg.* 140.

Leaves linear-lanceolate clustered tomentose soft, stem upright.

DESCRIPTIONS, &c.

1. Root annual. It resembles the next species very much, but the stem is prostrate, the root not creeping or abiding, the habit smaller and less villose, the corollas small and brown[1]. Stem angular, hirsute, solid, weak, a long span or more in length. Leaves an inch and half or two inches long, half an inch wide, sessile, lanceolate, pubescent, with a short soft hoary wool. Flowers axillary, from the top of the stem and branches, in swelling hirsute striated calyxes, on short peduncles: corolla very small, scarcely appearing out of the calyx. As the flower withers, the calyx swells very much into a sort of bladder[2].

Native of the South of Europe, in dry hilly situations. It flowers in june and july. Introduced in 1770, by Monf. Richard[3].

2. Root creeping, perennial (or rather biennial). Stem upright, branched. Leaves rough. Calyxes also rough. Corolla small, dark blackish purple. More villose than the preceding[4].

Gærtner conſiders the ſeeds of this natural order as nuts. They are four in number (except when ſome are abortive) in every calyx. Theſe are middle-ſized, cruſtaceous, ovate-acuminate, oblique incumbent on their umbilicus, obſoletely netted-wrinkled above, grooved on the ſides with parallel ſtreaks, ſtraw-coloured, one-celled, valveleſs: aperture of the umbilicus very wide, above the baſe of the nut, on the inner ſide. Seeds ſolitary, that is one within each cell or cruſt, ovate-acuminate, turgidly lenticular, dark or black-brown.

Native of Germany and Auſtria, in dry paſtures, flowering in may and june: with us in june and july. Introduced in 1785, by William Pitcairn, M. D.[5]

3. This plant in reality appears to be the *Asperugo ægyptiaca* of Linnæus. Spec. Pl. edit. 2.]

4. This is a low trailing annual plant, the branches ſeldom extending more than ſix inches, and thinly ſet with ſmall ſpear-ſhaped warted leaves, half ſurrounding the ſtalk. Flowers ſmall, bright blue, collected into ſmall bunches at the extremity of the branches.

[Native of the county of Nice, and the iſland of Candia, on the walls of the city.

It varies with red flowers, elegantly ſtreaked with white. Sir George Wheeler found a variety of it on mount Hymettus near Athens[6].

5. Root annual, ſimple, fibrous, whitiſh. It is an extremely harſh, rough and briſtly plant. Stems thick, cylindrical or ſlightly angular, upright, hiſpid, a foot or more in height, branched for the moſt part at top only. Leaves ſeſſile, lanceolate (ſometimes almoſt linear and ſometimes almoſt ovate,) blunt iſh, hiſpid with hairs iſſuing from ſmall papillæ, paleſt on the under ſide, veinleſs, waved, ſomewhat toothed and rolled back at the edge. Flowers in ſpikes, all one way, ſeſſile and turned backward. Bractes reſembling the leaves. Calyx hiſpid; ſegments oblong or lanceolate, almoſt the length of the corolla. Corolla ſky-blue, border ſlightly divided; ſcales cloſing the throat ſmall, white and hairy. The fruiting calyx cloſes till the ſeeds grow blackiſh, and then opens. Seeds large, nearly black, with a netted-wrinkled ſurface, and a little pointed. Receptacle marked with four round dots hollowed out[7].

The corolla varies, like many others of this colour, to red and white. When the plants grow on dunghills, the leaves are often an inch and half broad.

Native of moſt parts of Europe, in corn fields, eſpecially where the ſoil is ſandy, and on dry banks. It flowers from may to july, as Mr. Curtis ſays: from june to ſeptember, according to Dr. Withering and Mr. Hudſon.

It has lately been recommended as a remedy againſt the Anthrax or corroſive ulcer commonly called a Carbuncle, by laying the bruiſed plant on the tumour; but I find it difficult to perſuade myſelf that ſuch a plant can have any efficacy in ſuch a diſeaſe.

6. Root annual, ſimple. Stems cluſtered, nine inches or a foot high, round, hiſpid, purple, procumbent. Root-leaves numerous, lanceolate-ovate, hiſpid, dark green with prominent white bladders. Stem-leaves ſeſſile, ſomewhat ſtem-claſping, with a few teeth, acuminate. Flowers ſeveral at the extremity of the ſtem. Calyx erect, hiſpid, ferruginous. Corolla at firſt purple, then blue. It differs from the preceding in having the leaves conſtantly bladdery. Common on waſte grounds about Naples; flowering from february through the whole ſummer[8]. It is probably not ſpecifically different from the preceding.

7. This is an annual plant, a native of the Levant.

8. A perennial plant, native of Virginia, by way ſides[9].

PROPAGATION AND CULTURE.

See ANCHUSA. They are hardy plants, will generally riſe from ſcattered ſeeds, and do not bear tranſplanting well.

LYCOPSIS. See *Asperugo, Echium, Myosotis.*]

LYCOPUS. (*From* λυκος *and* πους, *Wolf's foot.*)

[*Lin. gen. n.* 33. *Reich. n.* 36. *Schreb. n.* 44. *Tourn. t.* 89. *Juſſ.* 111.

Claſſ. 2. 1. Diandria Monogynia.

Nat. order of *Verticillatæ. Labiatæ*, Tourn. Juſſ. *&c.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, half-five-cleft: *ſegments* narrow, acute.

COR. one-petalled, unequal. *Tube* cylindrical, the length of the calyx. *Border* four-cleft, blunt, ſpreading: *ſegments* almoſt equal: *upper* broader, emarginate; *lower* ſmaller.

STAM. *Filaments* two, commonly longer than the corolla, inclining to the upper ſegment. *Anthers* ſmall.

PIST. *Germ* four-cleft. *Style* filiform, ſtraight, the length of the ſtamens. *Stigma* bifid, reflex.

PER. none. *Calyx* containing the ſeeds in its bottom.

SEEDS four, roundiſh, retuſe.

ESSENTIAL CHARACTER.

Cor. four-cleft, with one diviſion emarginate. *Stam.* diſtant. *Seeds* four, retuſe.

SPECIES.

1. Lycopus europæus. *Water Horehound.*

Lin. ſpec. 30. *Juſſ.* 67. *Reich.* 1. 56. *Fl. ſuec. n.* 31. *Hort. cliff.* 11. *Huſſ. angl.* 9. *Wither. arr. ed.* 3. 20. *Curt. lond.* 3. 2. 201. *Lightf. ſcot.* 79. *Relh. cant. n.* 19. *Hall. helv. n.* 220. *Pallith pal. n.* 27. *Gmel. ſib.* 3. 248. *Neck. gallob.* 14. *Step. carn. n.* 29. *Crantz. auſtr.* 327. *Allion. pedem. n.* 63. *Villars dauph.* 2. 390. *Krock. ſilef. n.* 41. *Knipb. cent.* 5. *n.* 54. *Sabb. hort. rom.* 3. *t.* 53. *Berg. phyt.* 2. 153.

L. paluſtris glaber. *Tournef. inſt.* 191. *Raii ſyn.* 236. *Pet. brit. t.* 32. *f.* 5.

Marrubium paluſtre glabrum. *Bauh. pin.* 230.

M. aquaticum. *Bauh. hiſt.* 3. 318. 2. *Ger. emac.* 700. 1. *Raii hiſt.* 535.—paluſtre. *Park. theat.* 1230. 1.

M. aquatile. *Dod. pempt.* 595. 2.

Pſeudo-Marrubium paluſtre. *Riv. mon.* 22.—aquaticum vulgare. *Mor. hiſt. ſ.* 11. *t.* 9. *f.* 20.

Sideritis. *Matth.* 1002. *Dalech. hiſt.* 1117.

Leaves ſinuate-ſerrate.

[1] Krocker. [2] Ray. [3] Hort. kew. [4] Krocker. [5] Hort. kew. [6] Inſ. l. 6. 413. Ray hiſt. [7] Curtis. [8] Cyrillo. [9] Linn. ſpec.

2. Lycopus virginicus. *Virginian Water Horehound.*
Lin. spec. 70. *Reich.* 1. 56. *Gron. virg.* 8.
Leaves equally serrate.

3. Lycopus exaltatus. *Lofty Water Horehound.*
Lin. ſyſt. 67. *ſuppl.* 87.
L. fol. in profundas lacinias inciſis. *Tournef. inſt.* 191.
Leaves pinnatifid-ſerrate at the baſe.

DESCRIPTION, &c.

1. Root perennial, creeping. This plant has the ſquare ſtalks, oppoſite leaves, inflorescence, flowers and ſeeds of the natural order *Verticillatæ*; differing only in having two ſtamens, whence it is ſeparated in the artificial ſyſtem of Linnæus from its congeners, with which this, as well as Verbena, might be united: Dr. Withering having remarked, that it is not uncommon between the two ſtamens to find two ſhorter filaments without anthers; and that he once found them with anthers.

Stems commonly from one to three feet in height (I have now, Sept. 1. 1797, a ſpecimen before me upwards of four feet high,) upright, the ſides deeply channelled, rough-haired at the corners, branched from the bottom. Branches oppoſite, brachiate, axillary, almoſt erect, the lower ones reaching almoſt as high as the main ſtem. Leaves ovate, ovate-oblong, or almoſt lanceolate, pointed, ſeſſile, ſomewhat wrinkled, ſlightly hirſute, dark green above, pale green beneath, the midrib and veins very ſtrong, the edge cut with deep ſerratures; many of the leaves of the main ſtem, eſpecially the lower ones, pinnatifid at the baſe; theſe are five inches long and two broad; the upper ones and thoſe on the branches are from three to four inches in length, and not pinnatifid, but ſimply ſerrate. Flowers ſmall, many together, diſpoſed in denſe whorls, at each joint, from the axils of the leaves, almoſt from top to bottom of the branches, and in the main ſtem great part of the length. Calyx hirſute, divided into five (ſometimes four) unequal awned cleſts. Corolla white with a tinge of purple, ſomewhat hairy or villoſe within; the upper ſegment ſlightly notched, the lower dotted with purple. Filaments firſt bent in, then ſtraight: anthers ſomewhat creſcent-ſhaped and whitiſh. Germ ſet upon a yellow glandular receptacle. Seeds brown, ſhining, ſubtriangular, outwardly flattiſh, impreſſed with a ſubcordate line in the middle; inwardly the middle running out to a point, and the ſides ſomewhat rolled in.

The leaves vary, in being more or leſs hairy, and more or leſs divided. Mor. 11. 9. 21. Barr. 154. and Pluk. 45. 1. repreſent the variety with jagged leaves. Loers (n. 23.) mentions a variety, with all the flowers female, or without ſtamens. It is common in moſt parts of Europe in meadows, and on the banks of ſtreams and ponds: flowering from july to ſeptember. In ſome meadows it abounds ſo much as to be noxious. Cattle appear not to touch it; and its root being of the creeping kind, renders it difficult of extirpation. It dyes black, and gives a permanent colour to linnen, wool and ſilk. Gypſies are ſaid to ſtain their ſkin with it[a].

Adanſon mentions the two barren filaments. Scopoli remarks its evident affinity to Mentha or Mint. Pollich that there are ſometimes eighty-two flowers in a whorl, with lanceolate bractes under them. His deſcription is a very good one: and ſo is Ray's in his hiſtory.

This common plant, which on trial might probably be found uſeful to dyers, is called by all Engliſh writers *Water Horehound*. In German it is *Waſſerfuſs, Waſſerandorn, Sumpfandorn, Bruchandorn, Waſſermandorn, Waldbrandorn, Waſſerhein, Sparrfaden, Zigeunerkraut, Gliedkraut, Chriſtuskance*. In Dutch, *Waſſpoot. Waterandoorn*. In Daniſh, *Vandnaetru*. In Sweduſh, *Vargfot*. In French, *Marrube aquatique, Licope, Patte de Loup*. In Italian, *Licopo*.

2. Native of Virginia. The leaves are lanceolate and very finely ſerrate[b].

3. Stem the height of a man, branched, angular, rugged. Leaves deeply ſerrate, the loweſt ſerratures deeper, ſo as to be almoſt pinnatifid at bottom, with ſubſerrate ſegments. Corollas four-cleft, white, the ſegments dotted with red, the uppermoſt emarginate, the loweſt broader. Stamens two diſtant. Anthers twin, red.

Native of Italy[c].

I have not ſeen it, but by the deſcription I cannot diſcover any eſſential difference between this and the firſt. Size is nothing.

LYGEUM. (*From Λυγος, Vitex, virga, ſlagrum; a pliant plant, rod, or whip.*)
Lin. gen. n. 70. *Reich. n.* 76. *Schreb. n.* 99. *Juſſ.* 53. *Leeſling.*
Claſſ. 3. 1. Triandria Monogynia.
Nat. order of *Gramina, Graminea* or *Graſſes*.

GENERIC CHARACTER.

Cal. *Spatha* one-leaved, convolute, ovate, acuminate, opening downwards, permanent.
Cor. in pairs, placed on the germ, equal all ways. Glume of the corollet two-valved: outer valve convex, oblong, acute, ſmaller; inner linear, narrow, twice as long, bifid, acute.
Stam. (to each) *Filaments* three, very ſlender, flattiſh, long. *Anthers* linear.
Pist. *Germ* common to both, hirſute, inferior to the corollas. *Style* ſimple, flattiſh, long. *Stigma* ſimple.
Per. *Nut* oblong, extremely hirſute, two-celled, not opening.
Seeds ſolitary, linear-oblong, convex on one ſide, flattiſh on the other.

ESSENTIAL CHARACTER.

Spatha one-leafed. *Cor.* two on the ſame germ. *Nut* two-celled.

SPECIES.

1. Lygeum Spartum. *Ruſh-leaved Lygeum*, or *Hooded Matweed*.
Lin. ſpec. 78. *ſyſt.* 103. *Reich.* 1. 143. *Loeſl. it.* 283. *t.* 2. *D'Aſſo aragon. n.* 42.
Spartum herba, alterum. *Cluſ. hiſt.* 2. 220. *f.* 2.—alterum Plinii. *Ger.* 38. 2. *emac.* 48. 2.—Plinii alterum mollius. *Park. theat.* 1198. 2.
Gramen ſparteum ſecundum, panicula brevi folliculo incluſa. *Baub. pin.* 5.
G. ſpart. 2 Cluſio. *Baub. hiſt. Rai inſt.* 1259. 2.
Native of Spain, in chayey fields. It is very uſeful there for making baſkets and ropes, and alſo for filling their paillaſſes or lower matraſſes. They call both this and *Stipa tenaciſſima*, which is uſed for the ſame purpoſes, by the name of *Eſparto*[a]. It flowers there in march; with us, in may and june. It was introduced in 1776, by Meſſrs. Kennedy and Loe[b].

Lycotsvum. See *Petaſa*.

Lyme-Grass. See *Elymus*.

LYSIMACHIA. (*King Lyſimachus, ſays Pliny, found this herb, which has its name from him.*)
Lin. gen. n. 205. *Reich. n.* 219. *Schreb. n.* 289. *Gærtn. t.* 50. *Tournef. t.* 59. *Juſſ.* 95.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Rotaceæ*. *Lyſimachiæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-parted, acute, creſt, permanent.
Cor. one-petalled, wheel-ſhaped. *Tube* none. *Border* five-parted, flat: *diviſions* ovate-oblong.
Stam. *Filaments* five, awl-ſhaped, oppoſite to the diviſions of the corolla. *Anthers* acuminate.
Pist. *Germ* roundiſh. *Style* ſiliform, the length of the ſtamens. *Stigma* obtuſe.
Per. *Capſule* globular, mucronate, one-celled, ten-valved (five-valved, *G.*)
Seeds very many, angular. *Receptacle* globular, very large, dotted (free, *G.*)
Obs. *In ſome ſpecies the ſtamens are united at the baſe.*
L. Linum-ſtellatum *has a five-cleft corolla, and a five-valved fruit.*

ESSENTIAL CHARACTER.

Cor. wheel-ſhaped. *Capſ.* globular, mucronate, ten-valved (five-valved. *Rec.* free. *Seeds* with a ventral navel oppoſite to the embryo, *G.*)

[a] Curtis, Withering, Linn. ſuppl. [b] Gron. [c] Linn. ſuppl. [a] D'Aſſo. [b] Herb. kew.

SPECIES.

* *With many-flowered pedancles.*

1. Lyſimachia vulgaris. *Common Looſe-ſtrife.*
Lin. ſpec. 209. *ſyſt.* 195. *Reich.* 1. 419. *fl. lapp.* n. 81. *fuec. n.* 175. *vir. cliff.* 415. *hort. cliff.* 52. *Huſſ. angl.* 86. *Wither. arr. ed.* 3. 237. *Curt. lond.* 5. 2. 288. *Lightf. ſcot.* 138. *Relh. cant.* n. 162. *Hall. helv. n.* 630. *Scop. carn. n.* 214. *Neck. gallob.* 110. *Pollich pal. n.* 199. *Leers herborn. n.* 140. *Kreck. ſileſ. n.* 301. *Villars dauph.* 2. 463. *Fl. dan. t.* 689. *Knipb. cent.* 7. n. 49. *Sabb. hort.* 2. *t.* 41, 42. *Blackw. t.* 278. *Plenck. ic.* 83.
L. lutea. *Bauh. hiſt.* 2. 901. *Ger.* 386. 1. *emac.* 474. 1. *Fuchſ.* 492. *Trag.* 183. *Beſl. eyſt. eſtiv.* 10. *t.* 6. *f.* 3. *Rai hiſt.* 1021. *ſyn.* 282.—major. *Bauh. pin.* 245. *Tournef. inſt.* 141. *Garid.* 300.—vulgaris. *Park. theat.* 544. 1.—communis. *Cluſ. hiſt.* 2. 50. 2.
Lyſimachia. *Matth.* 949.
Lyſimachium luteum. *Dod. pempt.* 84.
Blattariæ affinis planta major, flore luteo. *Mor. hiſt. ſ.* 5. *t.* 10. *f.* 14.
Panicled, racemes terminating.
2. Lyſimachia Ephemerum. *Willow-leaved Looſe-ſtrife.*
Lin. ſpec. 209. *ſyſt.* 195. *Reich.* 1. 419. *Murr. in comm. gott.* 1782. *p.* 9. *t.* 2.
L. Otani. *D'Alſo arag.* 22. *n.* 168. *t.* 2. *f.* 1.
L. ſalicifolia. *Mill. dict. n.* 6.
Ephemerum ſporium Lobelii. *Obſ.* 191. *Rob. it.*
Racemes terminating, petals obovate ſpreading, leaves linear-lanceolate ſeſſile.
[3. Lyſimachia ſtricta. *Upright Looſeſtrife.*
Ait. hort. kew. 1. 199.
L. bulbifera. *Curt. magaz.* 104.
Racemes terminating, petals lanceolate ſpreading, leaves lanceolate ſeſſile.]
4. Lyſimachia dubia. *Purple-flowered Looſeſtrife.*
Ait. hort. kew. 1. 199.
L. atropurpurea. *Lin. ſyſt.* 195. *Reich.* 1. 420. *Murr. in comm. gott.* 1782. *p.* 6. *t.* 1.
L. Ephemerum. *Mill. dict. n.* 4.
L. ſpicata purpurea minor. *Bauh. cent.* 1. 22. *t.* 33.
Racemes terminating, petals converging, ſtamens ſhorter than the corolla, leaves lanceolate petioled.
5. Lyſimachia thyrſiflora. *Tufted Looſeſtrife.*
Lin. ſpec. 209. *ſyſt.* 195. *Reich.* 1. 420. *fl. lapp. n.* 82. *fuec. n.* 176. *hort. cliff.* 52. *Huſſ. angl.* 86. *Wither. arr. ed.* 3. 237. *Engl. bot.* 176. *Gmel. ſib.* 4. 87. *n.* 36. *Fl. dan.* 517. *Gunn. norv. n.* 82. *Hall. helv. n.* 631. *Pollich pal. n.* 200. *Kreck. ſileſ. n.* 302. *t.* 37. *Weber ſpicil.* 8.
L. lutea altera. *Cluſ. hiſt.* 2. 53. *f.* 1, 2.—flore globoſo. *Ger. emac.* 475. *f.* 3. *Park. theat.* 544. 3. *Rai hiſt.* 1022. *ſyn.* 283.—flore quaſi ſpicato. *Bauh. hiſt.* 3. 904. 2.
L. bifolia, flore globoſo luteo. *Bauh. pin.* 245.
Lyſimachium aquatile. *Dod. pempt.* 607. 1.
Racemes lateral pedunculed.

** *With one-flowered pedancles.*

6. Lyſimachia quadrifolia. *Four-leaved Looſeſtrife.*
Lin. ſpec. 210. *ſyſt.* 196. *Reich.* 1. 420. *Gron. virg.* 20. *Pet. gaz. t.* 2. *f.* 5. *Pluk. mant. t.* 333. *f.* 1. (Anagallis).
Leaves in fours, pedancles in fours one-flowered.
7. Lyſimachia punctata. *Dotted Looſeſtrife.*
Lin. ſpec. 210. *ſyſt.* 196. *Reich.* 1. 421. *hort. cliff.* 52. *Gmel. ſib.* 4. 80. *n.* 35. *Jacqu. auſtr.* 4. *t.* 366. *Scop. carn. n.* 215. *Kreck. ſileſ. n.* 304. *Allion. pedem. n.* 342.
L. quadrifolia. *Mill. dict. n.* 10.
L. lutea 2. *Cluſ. hiſt.* 2. 52. *f.* 2.—minor. *Ger. emac.* 474. *f.* 2. *Park. theat.* 543. *n.* 2.—fol. nigris punctis notatis. *Bauh. pin.* 245. *Rai hiſt.* 1022.
Blattariæ affinis, fol. nigris, &c. *Mor. hiſt.* 5. 10. 15.
Leaves in fours ſubſeſſile, pedancles in whorls one-flowered.
8. Lyſimachia ciliata. *Ciliated Looſeſtrife.*
Lin. ſpec. 210. *ſyſt.* 196. 5. *β. Reich.* 421. 5. *β. Wulf. ultr.* 392. *Wulfen. hort.* 32. *t.* 12.
Petioles ciliated, flowers drooping.

9. Lyſimachia Linum-ſtellarum. *Small Looſeſtrife.*
Lin. ſpec. 211. *ſyſt.* 196. *Reich.* 1. 421. *hort. cliff.* 37. *Saus. monſp.* 130. *Allion. pedem. n.* 343. *Gaertn. fruct.* 1. 229.
L. annua minima polygoni folio. *Tournef. inſt.* 141. *Garid.* 301.
Linum minimum ſtellatum. *Bauh. pin.* 212. *prodr.* 107. *Magn. monſp.* 163. *t.* 162. *Rai hiſt.* 1076.
Centunculus fol. oppoſitis. *Ger. prov.* 306.
Chamæſtratum ſtellatum. *Park. theat.* 1336. *n.* 11.
Calyxes exceeding the corolla, ſtem upright very much branched.
10. Lyſimachia nemorum. *Wood Looſeſtrife,* or *Pimpernel.*
Lin. ſpec. 211. *ſyſt.* 196. *Reich.* 1. 421. *hort. cliff.* 52. *Huſſ. angl.* 86. *Wither. arr. ed.* 3. 237. *Curt. lond.* 5. 18. 328. *Lightf. ſcot.* 138. *Hall. helv. n.* 628. *Fl. dan.* 374. *Neck. gallob.* 108. *Villars dauph.* 463. *Allion. pedem. n.* 344. *Kreck. ſileſ. n.* 303.
Anagallis lutea. *Ger.* 494. *f.* 3. *emac.* 618. *f.* 4. *Rai hiſt.* 1024. *ſyn.* 282.—flore luteo. *Park. theat.* 558. 5.—nemorum. *Bauh. pin.* 252. *Mor. hiſt. ſ.* 5. *t.* 26. *f.* 5.—Nummulariæ ſimilis. *Bauh. hiſt.* 3. 370.—luteo flore. *Cluſ. hiſt.* 2. 182. 2. *Lob. obſ.* 248. 2. *Dalech.* 1237.
Leaves ovate acute, flowers ſolitary, ſtem procumbent.
11. Lyſimachia Nummularia. *Creeping Looſeſtrife,* or *Moneywort.*
Lin. ſpec. 211. *ſyſt.* 196. *Reich.* 1. 422. *vir. cliff.* 52. *hort. cliff.* 52. *fl. ſuec. n.* 177. *mat. med.* 58. *Huſſ. angl.* 87. *Wither. arr. ed.* 3. 238. *Curt. lond.* 3. 14. 149. *Lightf. ſcot.* 138. *Relh. cant. n.* 163. *Hall. helv. n.* 629. *Scop. carn. n.* 216. *Fl. dan. t.* 693. *Neck. gallob.* 109. *Pollich pal. n.* 202. *Allion. pedem. n.* 345. *Villars dauph.* 2. 464. *Kreck. ſileſ. n.* 305. *Blackw. t.* 542. *Knipb. cent.* 8. *n.* 64. *Ludw. ed. t.* 148. *Sabb. hort.* 2. *t.* 44. *Plenck. ic.* 84.
Nummularia. *Ger.* 505. *f.* 1. *emac.* 630. 1. *Trag.* 808. *Fuchſ.* 401. *Matth.* 1013. *Dod. pempt.* 600. 2. *Lob. obſ.* 251. 1. *Rai hiſt.* 1099. *ſyn.* 283.—vulgaris. *Park. theat.* 555. 1.—ſ. Centimorbia. *Bauh. hiſt.* 3. 371. 1.—major lutea. *Bauh. pin.* 309. *Mor. hiſt. ſ.* 5. *t.* 26. *f.* 1.
Hirundinaria ſ. Nummularia major & minor. *Tabern.* 874.
Anagallis mas. *Camer. epit.* 394.
Leaves ſubcordate, flowers ſolitary, ſtem creeping.
[12. Lyſimachia japonica. *Japan Looſeſtrife.*
Lin. ſyſt. 196. *Thunb. jap.* 83.
Leaves ſubcordate, flowers axillary, pedancles ſhorter than the leaf.

DESCRIPTIONS, *&c.*

Root in moſt of the ſpecies perennial. Stem herbaceous. Leaves oppoſite. Flowers axillary or terminating, ſolitary, or elſe in ſpikes or corymbs[a].

1. Root perennial, creeping. Stem three feet or more in height, when the leaves grow in pairs obtuſely four-cornered; when three together grooved or angular, angles obtuſe; the upper part of the ſtalk ſlightly hairy, the lower ſmooth, branched, and a little thickened at the joints. Leaves in pairs, or three together, (ſometimes four or five) ſeſſile, ovate or lanceolate, pointed, entire but not perfectly even (rather waved) on the edges, veiny, ſmooth or ſometimes woolly. Flowers in terminating axillary racemes, all together forming a panicle. Peduncles ſomewhat viſcid, thickened at top. Diviſions of the calyx ſtriated and edged with red, the tips both before and after flowering twiſted. Corolla yellow. Though the natural number of diviſions in this and the calyx be five, yet ſometimes they are ſix. Filaments unequal, ſhorter than the corolla, viſcid, broad, united at the baſe into a cylinder incloſing the germ. Anthers incumbent, ſubſagittate. Style elongated as the flowers go off. Seeds numerous, very minute[b].

Scopoli remarks, that the corolla has glands on very ſhort pedicels ſcattered over it: that the filaments are alſo glandular, except the tips: that one ſtamen is

[a] Juſſieu [b] Curtis

longer than the reſt, and the contrary: that the anthers are blunt, and have a red ſeptum: that the germ is glandular; the ſtyle thinner at the baſe; and the ſtigma not thicker than the ſtyle.

Native of moiſt parts of Europe, on the banks of ſtreams, and in marſhy meadows; flowering from the end of June to ſeptember.

It has the Engliſh name *Looſeſtrife*, from the quality aſcribed to it by the ancients of quieting oxen when put upon their yokes[a]. So Lyſimachia or Lyſimachus is ſo called ἀπὸ τοῦ λύειν τὴν μάχην, from diſſolving ſtrife. It is alſo called *Willow-herb*, from the ſhape of the leaves. In German it is *Gelbe Weiderich, Gelbes Weidenkraut, Gemeine Lyſimachie, Eſſwurzel*. In Dutch, *Geneeuw Weiderick, Groote Geele Weiderick*. In Daniſh, *Fredloe, Baſtart Duerri, Gaul Gaaſe-beel, Gunlarve*. In French, *Lyſimaque vulgaire, Corneille, Chaſſe-boſſe, Perce-boſſe*. In Italian, &c. *Lyſimachia*.]

2. Root perennial. Stems ſeveral upright, more than three feet high. Leaves narrow, ſmooth; and at the baſe of theſe come out ſhort ſide branches, with ſmaller leaves of the ſame ſhape. The flowers are produced in a long cloſe upright ſpike, at the top of the ſtalk. The corolla is white. Stamens longer than the corolla.

[D'Aſſo thus deſcribes it. Plant three cubits high. Root dividing into ſeveral forks, fibrous, ſpreading horizontally. Stem round, fiſtulous, ſmooth. Leaves lanceolate, quite entire, glaucous. Common peduncles angular. Flowers white, each on its proper pedicel with a linear bractle under it, alternate except at the top, where they are uſually oppoſite. Diviſions of the calyx ovate, with membranaceous edges—of the corolla blunt. Anthers incumbent. Capſule five-valved, containing many angular ſeeds fixed to a dotted receptacle.

It is very diſtinct from the fourth ſort by its ſize, five-valved capſules, white flowers, and leaves without dots. D'Aſſo, taking it to be different from L. Ephemerum, named it *L. Otani*, from Franc. Otano, who firſt detected it in Aragon. The leaves however of our plant are dotted.

Native of Spain. Cultivated in 1731, by Mr. Miller. It flowers from july to ſeptember.

3. Stem erect, four-cornered, ſmooth. Leaves quite entire, acute, ſmooth, dotted. Racemes ſimple. Pedicels in a ſort of whorl, filiform, an inch long. Bractles lanceolate, very ſhort. Diviſions of the calyx lanceolate, ſmooth, dotted with red. Petals three times as long as the calyx, yellow with red ſtripes and dots, and two dark-red ſpots. Stamens ſhorter than the corolla.

Native of North America, in ſwampy ground. Introduced in 1781, by Mr. William Curtis, from Mr. Robert Squibb, then at New York. It flowers in july and auguſt. After flowering, it throws out bulbs from the axils, which falling off in october, produce young plants the enſuing ſpring[b].

4. This is an annual (biennial) plant, too tender for the open air of this country. [It agrees with the ſecond in habit, ſtructure and glaucous colour; but the leaves are not dotted, as in that. L. Ephemerum has the petals blunt and ſpreading, the ſtamens ſhorter than the corolla; the flowers on pedicels: whereas in this there are no dots under the leaves; the petals are acuminate, a little longer than the calyx, converging, and deep red; the ſtamens are longer than the corolla, with brown anthers; and the flowers are ſeſſile in a ſpike: they are however very nearly allied[c].

Native of the Levant. Cultivated in 1759, by Mr. Miller. It flowers in july and auguſt[d].

5. Root perennial, creeping and ſpreading in the mud, bearded with long fibres. Stems in tufts, porous, jointed, round, ſucculent, ſmooth, upright, hardly a foot high in general, but ſometimes near a foot and half; not branched, except that the flowers come out on lateral thyrſes from the axils, towards the top; which Linnæus mentions as a ſingular circumſtance in an upright plant. Leaves linear-lanceolate, marked with many black dots, ſeſſile or half embracing the ſtem, ſlightly pubeſcent beneath, acute, quite entire, about three inches long, and more than half an inch broad towards the baſe; many together at the top of the ſtem. Flowers in oppoſite axillary cylindrical thyrſes or racemes, on pedunicles an inch in length; each ſeparated by a lanceolate bractle. Corolla ſmall, yellow, divided almoſt to the baſe, with very ſhort teeth between the diviſions, which are marked, eſpecially towards the tip, with tawny dots. Stamens much longer than the corolla. The number of theſe, and of ſegments both in the calyx and corolla, varies from five to eight[e].

Native of many parts of Europe, in bogs, marſhes, ponds, ditches, and banks of rivers. In England not common. Near King's Langley in Hertfordſhire. In Angleſea. In Ireland, along the banks of the river at Ballynahinch, above the bridge; found by Mr. John Templeton, of Orange Grove near Belfaſt. Mr. Dodſworth and others have found it in Yorkſhire, but it ſeems to be loſt there.

6. Leaves ovate, acute. Flowers yellow.—Native of Virginia[f].

7. Root perennial, tranſverſe, ſomewhat creeping, bearded with pale fibres. Stems from a foot and half to three feet in height, angular, upright, the ſize of a quill, covered with a ſoft hoary down, leafy, ſeldom branched. Leaves ovate-lanceolate, entire, villoſe on both ſides, ſoft, acuminate, frequently ſpotted with black on the lower ſide, in fours (but ſometimes three or only two) at each joint, on ſhort petioles, from two to three inches long. Pedunicles one-flowered, ſhort, villoſe, axillary, ſeven or eight to a whorl, except towards the top of the ſtem, where there are only two, and on the branches there is one only. Flowers ſmall. Calyx pubeſcent. Corolla yellow; ſegments acuminate with tawny dots at the baſe. Filaments connate, awl-ſhaped at the baſe. Anthers acute, erect, ovate. Capſule globular, ſhining[g].

Native of Holland, among reeds, Auſtria, Sileſia, Piedmont, Siberia. — Cultivated in 1759, by Mr. Miller[h].]

8. Root perennial, creeping. Stalks many, erect, about two feet high. Leaves oblong, oblique, ſmooth, veined on their under ſide, and ending in acute points. Flowers axillary, each on a long, ſlender, naked pedunicle; there are three or four of theſe ariſing from the ſhort branches, which come out on each ſide the ſtalk, at all the upper joints. They are like thoſe of the common ſort, but ſmaller, and hang down.

It was firſt brought from Canada [and is alſo a native of Virginia. Mr. Miller cultivated it in 1759[i]. In Syſt. veget. it is ſet down as a variety of L. quadrifolia; and they are probably the ſame plant.

If this be L. quadrifolia of Gærtner, the capſule is ſpherical, with five lines meeting at the top, one-celled, five-valved. Receptacle globular, fungoſe, excavated, free. Seeds many, but only three or four ripening, roundiſh, very ſlightly convex on one ſide, angular on the other, dotted very cloſely with raiſed dots, ferruginous, navel neutral almoſt obſolete.

9. This is a little annual plant, about two inches, or ſeldom three inches high, from a ſlender, whitiſh, hair-like root. Stems one or two, very ſlender. Leaves ſhort, ending in a very fine point. Flowers ſmall, pale green or herbaceous, ſtellate[k]. Corolla of Centunculus, five-cleft, hence Gerard places it in that genus. Bauhin and others took it for a Linum; but Ray, though he had not ſeen the plant, ſuſpected it not to belong to that genus. Willich (obſ. 91.) could not diſcern either petals or ſtamens. The capſule is ſmall and ſpherical, one-celled, five-valved[l], opening in five parts longitudinally, and not horizontally, as in Centunculus[m]. Receptacle globular, ſtarred a little, fungoſe, white. Seeds two or three, ſeldom more, minute, ovate-globular, mamiform; on one ſide convex and ſtriated tranſverſely; on the other hollowed out with a wide umbilical pit, and grooved radiately, of a ſmoaky colour.

[a] Pliny, l. 25. c. 7.
[b] Hort. kew. and Curt. magaz.
[c] Linn.
[d] Hort. kew.
[e] Linn. ſpec.
[f] Krocker. Withes. Pollich. Linn. ſuec.
[g] Krocker.
[h] Hort. kew.
[i] Ibid.
[k] Bauh. prodr.
[l] Gærtner.
[m] Gerard.

Native of France and Italy; flowering in the ſpring. Introduced here in 1776, by Monſ. Thouin. It flowers in June [1].

10. Root perennial, with whitiſh fibres. Stems ſeveral, roundiſh, grooved on each ſide alternately, ſmooth, red, roofing from the lower joints. Leaves gloſſy on each ſide, entire but ſomewhat waved, yelloſwiſh green, dotted with black underneath, the veins a little prominent; eight lines long, ſix or ſeven lines wide; petioles ſhort, broadiſh, grooved above. Peduncles axillary, ſolitary or in pairs, round, one-flowered, ſlender, longer than the leaves. Diviſions of the calyx awl-ſhaped, very ſlender. Corolla yellow, much ſmaller than the leaves (five lines in diameter); at bottom more intenſely yellow and ſhining; in the mouth ſmall yellow glands between the filaments, and little peſticelled glands on the edge of the corolla. Filaments ſmooth, upright, ſomewhat thicker in the middle. Anthers tawny, oblong, bent a little downwards. Germ ſmooth: ſtyle ſomewhat thicker at top. Seeds round and flat.

When the flowers are expanded, they ſomewhat reſemble, in ſhape, thoſe of Anagallis arvenſis or common Pimpernel; hence the older botaniſts conſidered this as an Anagallis. It differs from the next ſpecies, to which it bears no ſmall affinity in its general habit, in having the leaves more pointed, the flowers ſmaller, leſs bell-ſhaped, and on much longer peduncles, and the ſtalks generally redder [2].

Native of many parts of Europe, in moiſt woods, flowering from may to july; or according to Mr. Curtis, from june to ſeptember. Charlton wood. Hanging wood near Woolwich. Shooter's-hill wood. Between Dartford-road and Leeſon-heath. Between Muſwell-hill and Highgate. Cane wood. Scarlet Spring near Hareſield. Stow and Stokenchurch woods in Oxfordſhire. Pychley in Northamptonſhire. Near Nottingham.

11. Root perennial, with ſimple fibres, ſtriking downwards. Stems numerous, ſimple, trailing, putting out roots towards the top and ſometimes a branch; a foot or more in length, ſmooth, jointed, compreſſed, with four membranaceous edges. Leaves ovate-orbicular, upright, ſmooth, ſomewhat veiny, a little waved, on ſhort broad petioles which run down the ſtalk. Peduncles generally two together, oppoſite, upright, the length of the leaves, angular, gradually enlarged towards the end. Calycine leaflets or ſegments cordate-lanceolate, pointed, ſomewhat keeled, reflex at the baſe. Corolla yellow, about the ſame ſize with the leaves; the diviſions ovate, pointed, twice the length of the calyx, ſlightly jagged, and appearing glandular on the edge when viewed with a microſcope. Filaments upright, glandular, ſhorter than the corolla: anthers ſagittate. Style a little longer than the ſtamens [3].

The whole plant is ſmooth. The peduncles are not always equal to the leaves, but ſometimes longer, ſometimes ſhorter [4]. Haller remarks, that the calyx diſtinguiſhes this from all the other ſorts; and that the filaments coaleſce into a hairy circle. Scopoli ſays, the peduncles are five-angled; and that two of the filaments are longer, or one longer than the ſtyle. Polich remarks, that the peduncles have four angles, and are ſhorter than the leaves, but often much longer; that the corolla is half an inch in diameter, and that it frequently has ſmall tawny ſpots on it. Mr. Curtis obſerves, that this plant, like many others that increaſe much by the root or ſtem whilſt they are in flower, ſeldom produces ripe ſeeds. Ray however deſcribes the capſule to be round, very ſmall, and filled with ſeeds ſo minute as to be ſcarcely viſible.

Native of moiſt parts of Europe, in moiſt meadows, on the ſides of ditches, and under hedges in moiſt ſituations; flowering in june and july.

It is called *Nummularia*, ſays Gerarde, of the form of money, wherevnto the leaues are like: in Engliſh *Money-wort*, *Herb Two-pence* and *Twopenny-Graſs*. Other languages have borrowed the ſame circumſtance. In German it is *Pfennighraut*, *Wieſengeld*, *Goldkraut*, *Graſſes gelbes Munzkraut*, *Egelpfenig*, *Egelakraut*, *Kleiner Schlangenkraut*, *Kleines Natterkraut*, *Kleines Mondkraut*, *Waſſerpoley*. In Dutch, *Penningkruid*. In Daniſh, *Pengegraad*, *Pengeblad*, *Kryberde Pengeurt*. In Swediſh, *Penningeört*. In French, *la Lſimaque monnoyere*, *la Nummulaire*, *Herbe aux Ecus*, *Herbe à cent nœux*, *Herbe à cent maladies*. Theſe two laſt names are from *Centumorbia* or *Centummorbia* as it was called by ſome old writers, from its ſuppoſed efficacy in curing various diſeaſes. It was alſo named *Serpentaria*, from a notion that Serpents, when wounded, apply to this herb for cure. In Italian, &c. *Nummularia*.

The leaves are ſubaſtringent and ſlightly acid; hence Boerhaave recommended them in the hot ſcurvy, and hæmorrhages: but modern practice takes no notice of them. According to Linnæus, it is eaten by kine and ſheep, not much relished by goats, and refuſed by horſes. Scopoli recommends an infuſion of the plant in oil for deſtroying Weevils.

12. Root annual, fibrous. Stem filiform, decumbent, from flexuoſe erect at top, villoſe, ſimple, a hand in length. Leaves roundiſh, blunt, entire, very finely villoſe, ſpreading, half an inch in diameter. Petioles double the length of the leaves. Flowers ſeldom ſolitary, generally two together. Peduncles one-flowered, when flowering upright, when fruiting reflex. Native of Japan [5].

PROPAGATION AND CULTURE.

1. 5. 8. Theſe are not often admitted into gardens, becauſe the roots creep ſo much that they become troubleſome; they deſerve a place however for the beauty of their flowers in large gardens, eſpecially in moiſt places, where better things will not thrive. If the roots be taken up in autumn from places where they grow naturally, and planted in a moiſt ſoil, they will thrive without farther care.

2. This is the fineſt ſpecies of this genus, and as the roots of it do not ſpread like thoſe of the other, it deſerves a place in the pleaſure-garden, where it is a very ornamental plant for ſhady borders. It loves a moiſt ſoil and a ſhady ſituation, where it will continue long in beauty. It may be propagated by parting the roots in autumn, but by this method it increaſes ſlowly; ſo that the only way to have it in plenty, is by ſowing the ſeeds: theſe ſhould be ſown upon an eaſt-aſpected border in autumn, ſoon after they are ripe, then the plants will come up the following ſpring; but thoſe which are ſown in the ſpring will not grow the ſame year. When the plants come up they ſhould be kept clean from weeds, and if they are too cloſe, ſome of them may be drawn out and tranſplanted on a ſhady border, which will give the remaining plants room to grow till autumn, when they may be tranſplanted into the borders of the flower-garden where they are deſigned to flower; after which they will require no other culture but to keep them clean from weeds, and dig the ground between them every ſpring.

[3. Increaſes by its bulbs, which it produces inſtead of ſeeds, and requires a very moiſt ſituation [6].]

4. This is propagated by ſeeds, ſown on a moderate hot-bed in the ſpring, often watering the ground to bring up the plants; and if the ſeaſon ſhould prove warm, the glaſſes of the hot-bed ſhould be ſhaded in the heat of the day: when the plants are up, they ſhould have a large ſhare of freſh air admitted to them, to prevent their drawing up weak, and ſhould be frequently refreſhed with water. When they are fit to remove, plant each in a ſeparate pot, plunging them into a moderate hot-bed to forward their taking new root; after which gradually inure them to bear the open air; into which remove them the beginning of june, and let them remain there till october; when they ſhould be removed into a common frame, where they may be ſheltered from froſt in winter, but always enjoy the free air in mild weather. The ſpring following ſome of the plants may be ſhaken out of the pots, and planted in borders: but a few ſhould be put into larger pots, where they may flower and ſeed.

[1] Hort. kew. [2] Curtis. [3] Ibid. [4] Relhan. [5] Thunberg. [6] Curtis.

[LYSIMACHIA. See *Anagallis, Coronia, Dracocephalum,*] *Epilobium,* [*Jaffienea, Ludwigia, Lythrum, Mimulus,*] *Oenothera,* [*Phlox, Rhexia,*] *Scutellaria,* [*Veronica.*

LYSIMACHIÆ AFFINES. See *Caprraria, Craſſa, Oldenlandia.*]

LYTHRUM. (*Λύθρον of Dioſcorides. From λύθρος, crore; gore: from the purple colour of the flower.*)

Lin. gen. n. 604. *Reich. n.* 660. *Schreb. n.* 825. *Gærtn. t.* 62. *Juſſ.* 332. Salicaria. *Tournef. t.* 129. Cuphea. *Brown.* 216. *Gærtn. t.* 44. *Juſſ.* 332. Parſonſia. *Brown. t.* 21. *f.* 2. *Juſſ.* 332.

Claſſ. 11 1. Dodecandria Monogynia.

Nat. order of *Calycanthemæ. Salicariæ,* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, cylindric, ſtriated, with twelve teeth, alternately ſmaller.

COR. *Petals* fix, oblong, bluntiſh, ſpreading, with the claws inſerted into the teeth of the calyx.

STAM. *Filaments* twelve, filiform, the length of the calyx; the upper ones ſhorter than the lower. *Anthers* ſimple, riſing.

PIST. *Germ* oblong. *Style* awl-ſhaped, the length of the ſtamens, declined. *Stigma* orbiculate, riſing.

PER. *Capſule* oblong, acuminate, ſtraight, two-celled or one-celled.

SEEDS numerous, ſmall.

OBS. *In ſome ſpecies one-ſixth part of the number is taken from the flower; others have only ſix ſtamens.*

ESSENTIAL CHARACTER.

Cal. twelve-toothed. *Pet.* fix, inſerted into the calyx. *Capſ.* two-celled, many-ſeeded.

SPECIES.

1. Lythrum Salicaria. *Common or Purple Willow-herb.*
Lin. ſpec. 640. *Juſſ.* 446. *Reich.* 2. 426. *hort. cliff.* 178. *fl. lapp. n.* 197. *fuec. n.* 422. *Hudſ. angl.* 205. *Wither. arr. ed.* 3. 441. *Curt. lond.* 3. 28. 186. *Lightf. ſcot.* 247. *Relh. cant. n.* 345. *Neck. gallob.* 208. *Scop. carn. n.* 565. *Pollich pal. n.* 450. *Fl. dan. t.* 671. *Allion. pedem. n.* 1913. *Villars dauph.* 3. 818. *Krock. ſilef. n.* 714. *Knipb. cent.* 5. *n.* 55. *Blackw. t.* 520. *Plenck, ic.* 362. *Zorn. ic.* 113. *Thunb. jap.* 192.

Salicaria. *Hall. helv. n.* 854. — vulgaris purpurea. *Tournef. inſt.* 253. *Raii ſyn.* 367. *Pet. brit. t.* 62. *f.* 6. *Gerid.* 419.

Yſſimachia ſpicata purpurea. *Bauh. pin.* 246. *Ger.* 386. 2. *emac.* 476. 5. *Park. theat.* 546. 1. *Raii hiſt.* 1036.

L. purp. communis major. *Cluſ. hiſt.* 2. 51. 1.

L. altera. *Matth.* 950. *Camer. epit.* 687.

L. purp. quibuſdam ſpicata. *Bauh. hiſt.* 2. 924.

Pſeudolyſſimachium purpureum alterum. *Dod. pempt.* 86. 1.

Blattaria rubra ſpicata major glabra, folio acuto. *Mor. hiſt. ſ.* 5. *t.* 10. *f.* 10.

β. purpurea ſpic. lanuginoſa, f. fol. ſubrotundo incano. *Mor. ſ.* 11.

L. tomentoſum. *Mill. dict. n.* 2.

γ. L. trifolia ſpic. purp. *Bocc. muſ.* 167.

L. purp. trif. caule hexagono. *Spigel. iſag. Raii ſyn.* 367. *Hudſ. angl.* 206. 1. 8.

δ. L. quadrifolia purp. molliuſcula & longioribus foliis. *Bocc. muſ.* 167.

ε. L. fol. alternis, floribus ſolitariis. *Lin. lapp.* 160.
Leaves oppoſite cordate-lanceolate, flowers in ſpikes, twelve-ſtamened.

[2. Lythrum virgatum. *Fine-branched Willow-herb.*
Lin. ſpec. 642. *Juſſ.* 446. *Reich.* 2. 427. *Gmel. ſib.* 4. 175. *Jacqu. auſtr.* 1. 8. *t.* 7. *Gærtn. fruct.* 1. 296.

L. auſtriacum. *Jacqu. vind.* 243. *Krock. ſilef. n.* 717.

Lyſſimachia rubra non ſiliquoſa. *Bauh. pin.* 246.

L. rubra 2. f. minor. *Cluſ. hiſt.* 2. 51. *Raii hiſt.* 1036.

L. purpurea minor. *Ger. emac.* 478. *f.* 13.
Leaves oppoſite lanceolate, panicle virgate, flowers twelve-ſtamened in threes.

3. Lythrum fruticoſum. *Shrubby Willow-herb.*
Lin. ſpec. 641. *Juſſ.* 446. *Reich.* 2. 427.

Leaves oppoſite ſubtomentoſe underneath, flowers ten-ſtamened, corolla ſhorter than the calyx, calyx ſhorter than the genitals.]

4. Lythrum verticillatum. *Whorled Willow-herb.*
Lin. ſpec. 641. *Juſſ.* 446. *Reich.* 2. 427. *Gron. virg.* 52.
Leaves oppoſite tomentoſe underneath ſubpetioled, flowers in whorls lateral.

5. Lythrum petiolatum. *Foot-ſtalk-leaved Willow-herb.*
Lin. ſpec. 641. *Reich.* 2. 428. *Gron. virg.* 52.
Leaves oppoſite linear petioled, flowers twelve-ſtamened.

6. Lythrum linéare. *Linear-leaved Willow-herb.*
Lin. ſpec. 641. *Reich.* 2. 428. *Gron. virg.* 162.
Leaves oppoſite linear, flowers oppoſite ſix-ſtamened.

[7. Lythrum Parſonſia.
Lin. ſpec. 641. *Juſſ.* 446. *Reich.* 2. 428. *Swartz obſ.* 193.

Parſonſia. *Brown. jam.* 199. *t.* 21. *f.* 2.
Leaves oppoſite oval, flowers alternate ſix-ſtamened ſeſſile, ſtem diffuſed.

8. Lythrum Melaſtium.
Lin. ſpec. 641. *Reich.* 2. 428. *Swartz obſ.* 193.

Melaſtium. *Brown. jam.* 215.
Leaves oppoſite ovate, flowers alternate moſtly ten-ſtamened, ſtem proſtrate.

9. Lythrum cordifolium. *Heart-leaved Willow-herb.*
Swartz prodr. 76.
Leaves oppoſite ſubſeſſile cordate ovate rugged, racemes terminating and axillary, flowers ten-ſtamened.

10. Lythrum ciliatum. *Ciliated Willow-herb.*
Swartz prodr. 76.
Leaves oppoſite petioled ovate ſmooth ciliated, racemes terminating, flowers moſtly pointing one way ten-ſtamened.

11. Lythrum Cuphea. *Clammy Willow-herb.*
Lin. ſyſt. 447. *ſuppl.* 249.

Cuphea. *Brown. jam.* 216. — viſcoſiſſima. *Jacqu. hort.* 2. 83. *t.* 177. *Reich. hegir.* 1. 124. *Ait. hort. kew.* 2. 129. *Gærtn. fruct.* 1. 210.

Balſamona Pinto. *Vandell. faſc.* 1771 15. *t.* 3.
Leaves oppoſite petioled ovate-oblong ſomewhat rugged, flowers twelve-ſtamened.

12. Lythrum triflorum. *Three-flowered Willow-herb.*
Lin. ſyſt. 447. *ſuppl.* 249.
Very ſmooth, leaves oppoſite ſubſeſſile lanceolate entire, pedunckles axillary oppoſite, head three-flowered.

13. Lythrum Pemphis.
Lin. ſyſt. 447. *ſuppl.* 249. *Forſt. flor. auſtral. n.* 205.

Pemphis acidula. *Forſt. gen.* 68. *t.* 34.

Manginm porcellanicum. *Rumph. amb.* 3. 126. *t.* 84.
Shrubby, barſute, leaves oppoſite oblong entire, flowers axillary peduncled ſolitary, capſule cut round horizontally one-celled.

14. Lythrum racemoſum.
Lin. ſyſt. 447. *ſuppl.* 250.
Diffuſed, leaves oppoſite petioled ovate, racemes terminating, flowers oppoſite.

15. Lythrum dipetalum.
Lin. ſyſt. 447. *ſuppl.* 250.
Hiſpid-eſtid, leaves in threes or oppoſite ſeſſile ovate, flowers axillary nodding two-petalled.]

16. Lythrum Hyſſopifolia. *Hyſſop-leaved Willow-herb.*
Lin. ſpec. 642. *Juſſ.* 447. *Reich.* 2. 428. *mant.* 392. *hort. upſ.* 118. *cliff.* 178. *Hudſ. angl.* 208. *Wither. arr. ed.* 3. 441. *Engl. bot.* 292. *Relh. cant. n.* 346. *Sibth. oxon. n.* 434. *Scop. carn. n.* 566. *Jacqu. auſtr.* 2. 20. *t.* 133. *Pollich pal. n.* 451. *Allion. pedem. n.* 1914. *Villars dauph.* 3. 818. *Krock. ſilef. n.* 715.

Salicaria. *Hall. helv. n.* 855. — hyſſopi folio latiore. *Rupp. jen.* 147. *t.* 6. *f.* 3. — hyſſopi folio latiore & anguſtiore. *Tourn. inſt.* 253. *Raii ſyn.* 367.

Hyſſopifolia. *Bauh. pin.* 218. *prodr.* 108. — aquatica. *Bauh. hiſt.* 3. 792. 3.

Gratiola anguſtifolia. *Ger. emac.* 581. 2. *Raii hiſt.* 1055. — f. minor. *Park. theat.* 550. 2.
Leaves alternate linear, flowers ſix-ſtamened.

[17. Lythrum Thymifolia. *Thyme-leaved Willow-herb.*
Lin. ſpec. 642. *Juſſ.* 447. *Reich.* 2. 429. *Lerche in nov. act. nat. cur.* 5. *app.* 186. *Sauv. monſp.* 49. *Villars dauph.* 3. 819. *Allion. pedem. n.* 1915. *Krock. ſilef. n.* 716.

Pentaglossum linifolium. *Forsk. ægypt.* 11.
Salicaria minima tenuifolia. *Tournef. inst.* 254.
S. hyssopi folio angustiore. *Buxb. hal.* 290.
Hyssopifolia minor s. potius thymifolia maritima. *Bauh. pin.* 3. 792. *Raii hist.* 1055.
Polygonum aquaticum minus. *Barr. ic.* 773. *f.* 2.
Leaves alternate linear, flowers four-flamened.]
18. Lythrum americanum. *South-American Willow-herb.*
Mill. dict. n. 9.
Salicaria americana, hyssopi folio latiore, floribus minimis. *Houst. MSS.*
Leaves oblong-ovate, below opposite, above alternate, flowers six-flamened.

DESCRIPTIONS, *&c.*

[These are herbaceous, except N. 3, 10, 11. 13 to 15, which are shrubby; more are perennial than annual. Leaves sometimes alternate, but more frequently opposite, or in a sort of whorl. Flowers mostly in several whorls, all together forming a spike, sometimes axillary, subsolitary [a]. The number of stamens differs in several species, and some of them (7, 8, 11, 12, 13.) are separated from Lythrum, and made distinct genera, by Brown, Jussieu, Gærtner, and others.

1. Root perennial thick branched somewhat woody widely extended. Stem from two or three to four or six feet high, upright, tinged with red, below smooth and four-cornered, above pubescent and five-cornered; corners sharp, membranaceous rugged. Upper branches scattered; lower opposite four-cornered rugged and slightly downy upright shortish numerous. Leaves sessile, embracing, about three inches long, smooth above, underneath slightly downy somewhat rugged veined spreading; all opposite, or all alternate, or the lower opposite and the upper alternate. Flowers in clusters, placed at a little distance from each other, in the axils of the leaves, each consisting of about eight flowers, (six to twelve) together forming a long leafy spike. Bracte of the clusters ovate with a long point, underneath villose, longer than the calyx, purplish. Bracte of each flower small, nearly linear, running out to a point. Calyx hairy, truncate, divided into twelve purplish segments, six awl-shaped upright, and six alternate with the others small ovate bending inwards concave and minutely bearded at top. Corolla red purple. Petals oblong wedge-shaped, upright, longer than the calyx, inserted into the edge of it between the longer segments. Filaments inserted into the inside of the calyx; the six longest somewhat longer than the tube of the calyx, the six shortest hid within the tube. Anthers ovate, incumbent; the lower yellow, the upper purple. Dr. Withering remarks, that sometimes a single anther grows to one of the petals; and in this case, besides the twelve perfect stamens, a single filament is found without an anther. Germ superior ovate pointed grooved on each side smooth greenish; style cylindrical scarcely longer than the corolla: stigma capitate. Capsule covered by the calyx, two-celled [b].

Scopoli remarks that there are eighteen flowers in a whorl, that the calyxes are sessile and ten-cornered, the capsule brown, separable from the calyx, and two-celled or three-celled, the seeds wedge-shaped and rufescent, and that the whole plant becomes red as it advances in age.

Pollich says there are twelve or more flowers in a whorl, but in some fewer, that the calyx is marked with twelve streaks.

Krocker observes, that the calyx is not green but white, with twelve red streaks, that the petals are waved, and that the stamens vary in number from six to twelve.

Native of most parts of Europe, in marshes, and on the banks of rivers, ponds and ditches, which it ornaments with its beautiful spikes of purple flowers. Thunberg also found it in Japan, and remarks that it is entirely smooth there. It flowers late in the summer, Linnæus says with Hypericum perforatum or common St. John's wort. It is now in full flower on the 6th of september.

It is astringent, and is recommended by De Haen and several other foreign physicians in long protracted Diarrhœas and Dysenteries. A decoction or the expressed juice is given from one to three ounces. When dried and powdered it imbibes a great quantity of water before it loses its glutinosity. It has been used with success in tanning leather. It seems generally to remain untouched by cattle; Schreber however affirms that they feed on it.

In English it is named Purple spiked Willow-herb or Loosestrife. In German, *Braune Weiderich, Rother Weiderich, Purpur Weiderich, Weidenkraut, Blutkraut, Blauer Fuchsschwanz.* In Dutch, *Partyke.* In French, *Salicaire, Lisimaque rouge.* In Italian, &c. *Salicaria.* In Russian, *Plakun.*

There are several varieties of this handsome plant.

β. One of these is made a distinct species by Mr. Miller.] The stalks are upright and branching, three feet high. Leaves cordate-ovate, an inch long, and three quarters of an inch broad, downy, and placed by threes. Flowers in long spikes, disposed in thick whorls, with spaces between each; they are of a fine purple colour. It is S. purpurea follis subrotundis, *Tourn. inst.* 253. [It is a smaller plant than the common, much more downy, and the leaves broader. We are not told of what country it is a native.

γ. The common sort often varies with three leaves to a joint, in which case the stem is six-cornered.

δ. It has sometimes even four leaves at a joint. Boccone says, the leaves are softer and longer.

ε. Linnæus, in his Flora lapponica, mentions a singular variety, of which he found only a single plant there. The stem a foot high and simple. Leaves alternate, cordate-lanceolate, sessile. Flowers from each upper axil, solitary, sessile.

Mr. Miller has two other species, that seem to be only varieties of L. Salicaria.] 1. Lythrum lusitanicum, n. 4. Salicaria lusitonica, angustiore folio. *Tournef. inst.* 253. It grows naturally in Spain and Portugal, by the side of waters. It seldom grows more than a foot high. Leaves smooth, growing by threes, narrower and shorter than the common sort. Flowers in terminating spikes, of a light purple colour, appearing in july.—2. L. hispanicum, n. 5. Salicaria hispanica hyssopifolia, flor. oblongis saturate cæruleis. *Tournef. inst.* 253. This is also a native both of Spain and Portugal. The stalks are slender, not more than nine or ten inches long, spreading out on every side: the lower part has oblong-ovate leaves, placed opposite: on the upper part the leaves are narrower and alternate. The flowers come out singly from the side of the stalks at each joint, they are larger than those of the common sort, and of a deeper purple colour; they therefore make a fine appearance in july, when they are in beauty.

[2. Root perennial, thick. Stems upright, panicled, from a foot to two feet in length, at bottom hard and woody, round, pale brown mixed with green, commonly without leaves; towards the top green, four-cornered, leafy, with rod-like, axillary, upright, long, alternate branches. Leaves opposite, quite entire, acuminate, never cordate, sattish, an inch and half long, on very short petioles or sessile. Flowers in spikes, of the same colour and size as in the preceding, peduncled, in whorls, six in a whorl, the lower ones more remote, all axillary [c]. Linnæus says, the flowers are two or three, pedicelled, from each alternate axil of the raceme: and that it varies, though seldom, with alternate leaves.

Capsule smooth, ovate-oblong or almost cylindric, obsoletely two-grooved, two-celled, two-valved; the valves when ripe often bifid: partition contrary to the valves. Receptacle linear-oblong, convex, fungose, closely fastened to the partition on each side. Seeds numerous, small, ovate, very much attenuated towards the navel, convex on one side, flat on the other, smooth, pale yellow [d].

Native of Austria, Silesia, Siberia.—Introduced in 1776, by Jos. Nic. de Jacquin, M.D. It flowers from june to september [e].

3. This is a shrub, with a lacerated bark. Leaves

[a] Jussieu. [b] Curtis. [c] Krocker. [d] Gærtner. [e] Hort. kew.

ſeſſile, lanceolate, quite entire. Flowers ſolitary, pedunculed, ſubterminating. Native of China[1].]

4. This riſes with a ſtiff branching ſtalk a foot and half high. Leaves oblong. Flowers in whorls, pale purple, appearing in july. Capſules two-celled. [Peduncles many-flowered, very ſhort. Native of Virginia[2].]

5. This riſes with an upright woolly ſtalk near two feet high. Leaves on ſhort petioles. Flowers axillary, ſolitary, ſmall and pale purple, appearing in july. Native of Virginia.

[Mr. Miller cultivated both theſe before 1759.

6. Stem filiform erect angular, terminated by a larger ſpike, and two ſide ones, which are ſmaller, compoſed of oppoſite remote flowers, with a leaf under each. It has the appearance of L. Hyſſopifolia[3].]

Stalks ſlender, about a foot high. Leaves entire. Flowers axillary, ſolitary, ſmall, white. Calyx ſtreaked, cut into ſix parts at top. It flowers in june, and is a native of Virginia. [This alſo was cultivated by Mr. Miller, before 1759.

7. Roots filiform. Stem proſtrate or creeping, branched, round, ſlender, ſeldom exceeding ten or fourteen inches in length: branches only towards the top, ſimple, alternate, filiform, ſpreading, ſubflexuoſe, round, pubeſcent. Leaves ſmall, oblong, acute, quite entire, ſmooth on both ſides, nerved, on very ſhort petioles. Stipules none. Flowers axillary, eſpecially at the top of the ſtem, ſolitary, ſmall, pale red. Calyx ſwelling a little at the baſe, oblique, ſmooth, the mouth having from ſix to ten teeth. Petals waved. Stigma ſlightly bifid, pubeſcent, white. Capſule two-celled, opening by the calyx being longitudinally cloven in front. Seeds from four to ſix, faſtened by a pedicel to the middle of the receptacle, roundiſh, brown.

Native of Jamaica and Hiſpaniola; flowering the whole year[4].

Dr. Browne, ſuppoſing it to be a new genus, named it *Parſonſia*, after Dr. Parſons, who publiſhed a treatiſe on the ſeeds of vegetables, and many other curious remarks on different parts of natural hiſtory[5]. Juſſieu keeps it ſeparate from Lythrum, under the name which Browne had given it: the calyx being ventricoſe and only ſix-toothed; ſtamens only ſix, ſhort ſo as not to ſtand out of the corolla; capſule ſmall, membranaceous, covered by the calyx, one-celled (two-celled), containing few ſeeds (two to ſix), faſtened to a central receptacle. The flowers are axillary, alternate and ſolitary.

8. This is a weakly plant, with a ſlender ſtem well ſupplied with branches towards the top; and having a diſagreeable ſharp ſmell, approaching much to that of Guinea Henweed, but more ſubtile, and leſs perceptible when placed cloſe to the noſe. The leaves and flowers are much like thoſe of the preceding, as well as the diſpoſition and make of the capſule; but that plant does not branch ſo much, nor has it any thing of this ſmell[1].

Stem almoſt a foot high, ſubdivided, aſcending, roundiſh, rugged. Leaves petioled, large, acute, quite entire, nerved, ſomewhat rugged. Flowers pedunculed, ſolitary, axillary, larger than thoſe of the preceding ſort, purple. The calyx has from ſix to ten teeth. Petals ovate, deciduous. Filaments eight to ten, unequal, ſhort, inſerted below the middle of the tube: anthers cordate. Stigma acute. Seeds four to ſix, faſtened to a pedicel, emitted by the burſting of the calyx, ovate, compreſſed. Diſtinguiſhed by the alternate ſituation of the flowers[6]. But is not that circumſtance common to this and the preceding ſort? Native of Jamaica, in the cane-pieces. I ſuppoſe Browne's name is given on account of its ſmell. If Parſonſia ſhould be ſeparated from Lythrum, this will accompany it.

9. Native of Hiſpaniola.

10. Native of Jamaica. Theſe are both ſhrubby[7].

11. Root fibrous, annual. It has a deſicate ſlender ſtalk, round, upright, ten inches or a foot in height, pubeſcent, purple: branches few, alternate, ſimple. The whole plant is extremely viſcid all over. Leaves quite entire. Flowers lateral, on very ſhort peduncles, ſolitary, decumbent. Calyx twelve-ſtreaked, ſix-toothed, the upper tooth wider. Petals unequal, the two upper ones larger. Nectary a reflex ſcale, within the prominent part of the calyx. Stamens twelve, unequal by inſertion, eight coordinate and of the ſame ſhape, four ſmaller in two rows, the two upper ones villoſe: anthers roundiſh. Capſule oblong, one-celled, covered by the calyx, cloven along with it, and then boat-ſhaped; the receptacle with the unripe ſeeds coming forth and riſing, in order to ripen the ſeeds in the open air, after the manner of Phryma[8]. The ſeeds are few, from five to ten, ovate-rounded, lens-ſhaped, with a right line on one ſide ending in a very minute caruncle, of a teſtaceous brown colour[9]. It differs from Lythrum in having a ſix-toothed unequal calyx; ſix (or five) unequal petals; and a one-celled capſule without valves, burſting by the enlargement of the receptacle: hence Juſſieu, Gærtner and others, following Browne, have made it a diſtinct genus under the name of *Cuphea*, but Schreber not having taken it up, I have left it here.

Native of America, as Braſil and Jamaica; introduced in 1776, by Joſ. Nich. de Jacquin, M.D. It flowers in july and auguſt[8].

12. Root perennial. Eaſily diſtinguiſhed from the reſt by its filiform peduncles, terminated by two lanceolate channelled ſpreading bractes, longer than the flower, and between theſe three regular flowers, on ſhort pedicels, blue and ſmall[1].

Juſſieu doubts whether this, which is the *Noſea* of Commerſon, really belongs to this genus. According to him the leaves are oppoſite, the peduncles oppoſite axillary three-flowered, the calyx ventricoſe with from eight to ten teeth, the corolla four or five-petalled, with from eight to ten ſtamens, and the fruit two-celled. Native of America.

13. This is a hoary ſhrub. Leaves approximating, at the tops of the branches. The calyx has twelve unequal toothlets. Petals white. Stamens twelve. Capſule turbinate.

It appears to be of a different genus on account of its one-celled circumciſed fruit, but if one difference be deemed ſufficient to conſtitute a ſeparate genus, genera will be multiplied too much; and natural genera ought as much as poſſible to be kept entire[4].

Forſter has given it under the name of *Pemphis*, from *Πεμφις, bulla*, which the globular germ repreſents. According to him, the capſule is one-celled and ſix-valved, the ſeeds angular, compreſſed, faſtened to a ſhort three-toothed receptacle at the bottom of the capſule; in other reſpects the characters agree with thoſe of Lythrum: and in his Florula he has given it under Linnæus's name.

Found by Koenig on the coaſt of Ceylon, and by Forſter in the iſland of Teautea in the South Sea.

14. This is a ſuffruticoſe plant. Leaves quite entire, veined. Racemes long, from the forks, or terminating. Flowers remote, in pairs, pedicelled, erect, with ovate bractes. The ends of the twigs, the calyxes and pedicels have clammy hairs.

15. This is a ſhrub with alternate branches. Leaves quite entire, very rugged with ſhagginеſs on both ſides, ſhining on the upper; the lower in whorls, by fours or threes, on the branchlets oppoſite. Flowers pedicelled. Calyx linear, hiſpid, viſcid. Petals large, inſerted into the upper margin of the calyx, erect, obovate, violet or blue. This ſpecies is very diſtinct on account of its flowers, which are handſome. Both theſe were found in South America by Mutis[1].

16. Root annual. (Mr. Miller ſays perennial.) Stems proſtrate, ſhiffiſh, ſimple or branched only near the root, rod-like. Leaves numerous, ſeſſile, blunt, quite entire. Flowers axillary, ſolitary, ſubſeſſile, ſmall, blue. (Linneus ſays purple, white at the baſe;

[1] Linn. [2] Ibid. [3] Ibid. [4] Swartz. [5] Brown. jam. [6] Browne. [7] Swartz. [8] Ibid.

[1] Lin. ſuppl. & Browne. [2] Gærtner. [3] Hort. kew. [4] Linn. ſuppl. [5] Ibid. [6] Ibid.

Miller. light purple.) Calyx tubular, with five or ſix ſpreading teeth. Stamens ſhorter than the calyx *.

Scopoli ſays, the ſtem is half a foot long; the branches angular; the calyx cylindric, ſtreaked, ſmooth, twelve-toothed; the teeth alternately ſmaller and upright; the capſule four-celled, four-grooved, blunt, incloſed in the calyx, ruſeſcent, cylindric; the ſeeds roundiſh, as many as fifty-ſix in one cell. The fruiting calyxes are preſſed to the ſcape.

Pollich remarks, that though the flowers are ſolitary, yet that ſometimes there are two together ſitting cloſe in the axil of a leaf; that the calyx is ſix-toothed, and that the teeth are ſhort pointed ſpreading, and red at the tip.

Mr. Miller ſays that the ſtems are a foot, and Monſ. Villars that they are two feet long. The latter remarks that the leaves are very bitter.

Krocker affirms, that the ſtems are ſuberect, not properly decumbent, and that they are a foot or more in length, quadrangular, with ſimple ſuberect brachiate branches from the baſe. Leaves glaucous-green, ſmooth, on very ſhort petioles or ſeſſile, an inch long and two lines wide. Flowers one, or two alternate. Calyx ſix or twelve-cleft; diviſions triangular, ſix broader upright, ſix ſmaller reflex. Petals five or ſix, roſe-coloured, ovate-lanceolate, inſerted into the edge of the calyx between the ſegments, fugacious. Stamens ſix or eight. Capſule cylindric, contained within the calyx, two-celled.—Part of this deſcription is from Haller.

Native of many parts of Europe, as Germany, Switzerland, Auſtria, France, Italy, England, in wet meadows, watery places, and eſpecially where water ſtagnates in winter; but it does not ſeem to be very common any where. With us it is found on Hounſlow heath. Between Staines and Laleham. On Hiſton, Hinton and Teevertham moors, and at Oakington in Cambridgeſhire. On the Banbury road from Oxford, near the firſt turnpike gate. Feverſham in Kent, in the ditches near the Abbey pond. Near the Wheatſheaf, five miles beyond Huntingdon on the north road. About Wilford in Northamptonſhire: flowering in july and auguſt. In Engliſh it is called *Graſs-Poly* or *ſmall Hedge-Hyſſop*.

17. Root annual. Very like the preceding, but only half or one third of the ſize. Stems, according to Villars, creeping, five or ſix inches long, with others ſmaller ſpringing from their centre, which have ſeveral alternate branches. Krocker ſays the ſtem is upright, with ſometimes a branch or two, but commonly ſimple. Leaves ſmall, pointed, very dark green, the lower ones oppoſite, the reſt alternate. Flowers ſolitary, axillary, ſeſſile, very ſmall. Calyx ſmall, angular, commonly four-toothed, but ſometimes though rarely five-toothed, ſupported by two lateral ſtipules. Petals commonly four, roſe-coloured. Stamens commonly four, ſometimes two or five. The number of theſe and of the petals correſponding with the diviſions of the calyx. The flowers are much ſmaller than in the preceding ſort *.

Native of the South of France, Italy, Sileſia, &c. in moiſt meadows and ditches; flowering in auguſt. Krocker ſuſpects that it may be a variety of the preceding.]

18. This has a woody root, from which ariſe two or three ſlender ſtalks upwards of two feet high. Leaves ſmooth. Flowers from the upper axils, ſolitary, ſmall, white, ſix-petalled. They do not appear till the ſecond year from ſeed. It was diſcovered by Dr. Houſtoun at La Vera Cruz, in ſwamps: and was cultivated by Mr. Miller before 1733, but has been ſince loſt.

PROPAGATION AND CULTURE.

1. The firſt, with its varieties, may eaſily be cultivated by parting the roots in autumn, but ſhould be planted in a moiſt ſoil. It is a handſome plant, and deſerving of a place in large gardens and plantations.

2. 4. 5. 6. The other hardy foreign ſorts may be increaſed in the ſame manner. When raiſed from ſeed, the ſeeds ſhould be ſown in autumn; otherwiſe they will remain a year in the ground.

3. 7. 8. 9. 10. 11. 12. 13. 14. 15. 18. Theſe are too tender to live in the open air. Sow the ſeeds in pots, and plunge them into an old hot-bed. They will not riſe unleſs they are ſown in autumn. Shelter them through the winter, and in ſpring place them in a freſh hot-bed. Treat them as other tender plants from hot countries.

16. 17. Being annual, muſt be raiſed from ſeeds: but they are bog plants, and ſeldom cultivated in gardens.

* Linn. mant. & Woodv. Mil.
* Linn. Villars, Krocker.

M.

[MABA. (*The vernacular name of the iſlanders in the South Seas.*)

Lin. gen. Schreb. n. 1500. *Suppl.* 65. *Forſt. gen. t.* 61. *Juſſ.* 418.

Claſſ. 22. 3. Dioecia Triandria.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* ſemitrifid: *diviſions* acute, villoſe.

COR. one-petalled, tubular, villoſe on the outſide. *Tube* cylindric, longer than the calyx. *Border* trifid: *diviſions* ovate, thickiſh, upright.

STAM. *Filaments* three, filiform, ſhorter than the calyx. *Authers* erect, ovate.

PIST. *Rudiment* globular ſubſeſſile in the centre of the flower.

* *Female.*

CAL. *Perianth* inferior permanent—as in the Males.

COR.

PIST.

PER. *Drupe* ſuperior, ovate-oblong, two-celled: *cells* two-ſeeded.

SEEDS. *Nuts* two oblong three-ſided, ſomewhat convex at the back, with two plane ſides.

ESSENTIAL CHARACTER.

Cal. trifid. MALE. *Cor.* trifid. FEM. *Drupe* ſuperior, two-celled.

SPECIES.

1. Maba elliptica.

Forſt. gen. 122. *flor. auſtral. n.* 366. *Lin. ſyſt.* 881. *ſuppl.* 426.

DESCRIPTION, *&c.*

This is a very ſmooth tree, with the twigs and young leaves hairy. Leaves alternate, on very ſhort petioles, elliptic, veined, very ſmooth. Pedunckes axillary, ſhort, often three-flowered. Flowers ſmall, and ſingular in having the outſide of the calyx and corolla more villoſe than any of the plant *. Native of the Friendly iſlands.

There is another ſpecies or variety, which Forſter calls *Maba major*, becauſe the drupe or fruit is three times the ſize of the other, having three-ſided kernels in the cells, which are tough and inſipid; they are however eaten by the inhabitants, and were brought for ſale to our people. In all the Friendly iſlands they plant the tree about their houſes *.

MABEA. (The vernacular name amongſt the Caribs is *Piriri Mabé.*)

Lin. gen. Schreb. n. 1438. *Aubl. t.* 334. *Juſſ.* 388.

Claſſ. 21. 7. Monoecia Polyandria.

Nat. order of *Tricocca.—Euphorbiæ*, Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* one-leafed, five-toothed, acute.

COR. none.

STAM. *Filaments* nine to twelve, inſerted into the bottom of the calyx. *Authers* roundiſh.

* Linn. ſuppl. * Forſt. eſcul. 54.

* *Female*

* *Female.*

CAL. *Perianth* one-leafed, upright, five-toothed, acute.

COR. none.

PIST. *Germ* oblong, subtrigonal, longer than the calyx. *Style* long. (Are there not rather three ſtyles glued together? *Juſſ.*) *Stigmas* three, filiform, revolute, or twiſted ſpirally.

PER. *Capſule* covered with a thick bark, roundiſh, tricoccous, three-celled: cells bivalve, burſting elaſtically.

SEEDS ſolitary, roundiſh.

ESSENTIAL CHARACTER.

Cal. one-leafed, five-toothed. *Cor.* none.

MALE. *Filam.* nine to twelve, inſerted into the bottom of the calyx.

FEM. *Germ* and *Style* one. *Stigmas* three, revolute. *Capſule* covered with a thick bark, three-celled, three-ſeeded.

SPECIES.

1. Mabea Piriri. M. with ovate-oblong acuminated leaves. *Aubl. pl. Guian. p.* 867. *t.* 334.
2. Mabea Taquari. M. with ovate obtuſe leaves marked with red veins beneath.

DESCRIPTIONS.

1. This is a ſhrub, of which the trunk is ſix feet high; and about ſix inches in diameter. From the trunk riſe ſeveral twiggy branches to a great height, which ſpread and catch upon the neighbouring trees. The leaves are alternate, ſmooth, green above, white below: the foot-ſtalk ſhort, and furniſhed with two long and ſtraight ſtipules, which are deciduous. The flowers are borne in great numbers on the tops of the branches, ranged in a long panicle: the males are on the upper part of the panicle, the females on the lower, and are about eight or ſix in number. All the parts of this ſhrub yield a milky juice. The Creoles and Negroes uſe the ſmaller branches for pipes; for which reaſon the tree is called Pipe wood (Bois a Calumet.)

2. This differs from the preceding in having a reddiſh bark; and the leaves larger, green above, and veined with red beneath: the largeſt are three inches and a quarter long, and an inch and quarter wide. The fruit is much larger than the former. In other reſpects it is like the former, and the branches are put to the ſame uſe.

MACAW-TREE. See *Cocos*.

MACEDONIAN PARSLEY. See *Bubon*.

MACPALXOCHI. See *Heliſteres*.

MACROCARPON. See *Artocarpus*.

MACROCNEMUM. (Μακρόκνημος, *longas tibias habens.*)

Lin. gen. Reich. n. 241. *Schreb. n.* 297. *Browne* 165. *Juſſ.* 200.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Conortæ.—Rubiaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ſuperior, turbinate, five-toothed, permanent.

COR. one-petalled, ſomewhat bell-ſhaped, five-cleft: *diviſions ovate, upright.*

STAM. *Filaments* five, awl-ſhaped, villoſe, ſhorter than the corolla. *Anthers* ovate, compreſſed, in the jaws of the flower.

PIST. *Germ* inferior, conical. *Style* ſimple, the length of the ſtamens. *Stigma* thickiſh, two-lobed.

PER. *Capſule* oblong, turbinate, two-celled, two-valved.

SEEDS very many, imbricate.

ESSENTIAL CHARACTER.

Cor. bell-ſhaped. *Capſ.* two-celled: two-valved, with the valves gaping outwardly at the ſides. *Seeds* imbricate.

SPECIES.

1. Macrocnemum jamaicenſe.
   Lin. ſpec. 244. *ſyſt.* 212. *Reich.* 1. 474. *amoen.* 5. 413. *Swartz. obſ.* 68. *t.* 3. *f.* 1. *Brown. jam.* 165.
2. Macrocnemum coccineum.
   Vahl. ſymb. 2. 38. *t.* 29.
   Racemes with elliptic coloured leaves, leaves lanceolate-elliptic.
3. Macrocnemum candidiſſimum.
   Vahl. ſymb. 2. 38. *t.* 30.
   Corymbs trichotomous with roundiſh leaves, leaves ovate.

DESCRIPTION, *&c.*

1. This is a ſmall tree, with a branching ſmooth trunk. Branches long, looſe, round, warted. Leaves approximating, towards the upper part of the branchlets petioled, oppoſite, large, oblong, with a ſhort point, entire, nerved, ſmooth on both ſides. Petioles ſhort thickiſh round ſmooth. Flowers in a ſort of panicle. Peduncles axillary oppoſite longer than the leaves round compreſſed ſmooth, three-parted above, with trichotomous branchlets, the laſt one-flowered. Corollas rather large, of a yellowiſh green: tube half an inch long, regular, narrower at the throat, before opening five-cornered, then cylindric: diviſions of the border acute, almoſt upright. Filaments the length of the tube, from the baſe above the middle very hairy, a little inclined. Anthers vertical oblong tawny. Germ obconical ſmooth[a].

Browne obſerves, that this tree riſes generally to the height of twelve or fourteen feet. It is a native of the ſouthern part of the iſland of Jamaica, on the banks of rivulets.

2. This is a tree with hairy branches. Leaves petioled, a foot long and a hand wide, narrowed at the baſe, broader outwards, membranaceous, quite entire, ſmooth above, the midrib hairy underneath. Raceme terminating, a foot long, peduncled, compoſed of ſmall oppoſite peduncled corymbs: partial peduncle hirſute trifid: lateral pedicels five-flowered; middle one trifid. Bracte at the baſe of the partial peduncles ovate, acuminate, concave, ciliated: bracte of the pedicels lanceolate, rough-haired. The five clefts of the calyx are rounded. There is a petioled leaflet, an inch and half long, elliptic purple, netted veined, ſmooth, to each corymb, as in Muſſœnda frondoſa. Corolla funnel-form: diviſions lanceolate, blunt, ſmooth: tube twice as long as the calyx. Filaments in the jaws of the tube, the length of the corolla, hairy within: anthers linear, reaching beyond the corolla. Germ turbinate, angular, hirſute: ſtyle thickened, the length of the corolla: ſtigmas two, blunt, reflex. Seeds membranaceous, awl-ſhaped, faſtened to a linear receptacle. Can this be a Macrocnemum, with the corolla not bell-ſhaped? It certainly agrees with that genus in moſt circumſtances. It differs from Muſſœnda in the fruit. Found in the iſland of Trinidad by von Rohr.

3. This is a tree with round ſmooth oppoſite branches, jointed at top, compreſſed, dilated under the leaves. Leaves petioled, two inches long and more, oppoſite, acuminate, blunt, veined, quite entire, ſmooth above, paler underneath, villoſe along the veins. Peduncles from the tops of the branches in threes, ancipital, dilated at top, twice trifid. Leaflets two, ſmall, under the firſt diviſion of the peduncles. Partial peduncles of the ſame ſtructure with the common peduncle. Pedicels three-flowered: the lateral flowers ſubpedicelled, the middle flower ſeſſile. There is a petioled leaf, obovate or roundiſh, an inch long, membranaceous, netted-veined, very white, from the margin of the lateral calyxes of the corymb, two in each corymb. Capſule oblong, ſomewhat flatted, two-grooved, each valve having a raiſed line along it. Found by von Rohr in the neighbourhood of St. Martha[b].

MACROLOBIUM. (*So named probably from having one of the petals very long in proportion to the others.*)

Lin. gen. Schreb. n. 62. Outea. *Aubl. guian. t.* 9. *Juſſ.* 347. Vouapa. *Aubl. t.* 7. *Juſſ.* 350.

Claſſ. 3. 1. Triandria Monogynia.

Nat. order of *Lomentaceæ.—Leguminoſæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* double. *Outer* two-leaved: *leaflets* oppoſite, ovate-oblong, faſtened to the baſe of the inner. *Inner* one-leafed, turbinate, ſhort: *mouth* oblique, five-toothed.

[a] Swartz. [b] Vahl.

Cor. five-petalled, unequal. *Upper petal* very large, upright, clawed, oblong, blunt, concave, waved, inserted into the inner perianth. *Lower petals* four, small, ovate, spreading, fastened to the inner perianth above.

Stam. *Filaments* four, inserted into the inner perianth, one from barren, under the great petal: three very long, filiform, anther-bearing, fastened below the smaller petals. *Anthers* four-cornered.

Pist. *Germ* pedicelled, ovate. *Style* filiform. *Stigma* blunt.

Per. *Legume* ovate, compressed, coriaceous, one-celled.

Seed single, roundish, compressed.

Obs. Outea and Vouapa *of Aublet, seem to be of the same genus, since in both, the corolla, fertile filaments and pistil, agree in number figure and situation of parts; though in the former Aublet did not find the ripe fruit, and in the latter has not distinguished the smaller petals from the calyx. Jussieu however has kept them separate.*

ESSENTIAL CHARACTER.

Cal. double: outer two-leaved: inner one-leafed. *Pet.* five: upper very large, the four others very small, equal. *Germ* pedicelled. *Legume.*

SPECIES.

1. M. Vouapa. With binate leaves; the legume sharp on one side, and two-winged.
2. M. Simira. With binate leaves; the legume rounded on all sides.
3. M. Outea. With two-paired leaves (foliis bijugis.)

DESCRIPTIONS, *&c.*

1. This is a tree sixty feet high, very much branching at the top, with scattered branches and branchlets: the leaves are alternate, green, strong, and thick; oval, and terminated by a long point: the largest are about five inches long, and two broad. The flowers grow on a little sprig from the bosoms of the leaves at the ends of the branches: they are large, and of a pale violet-colour. It grows in the large forests of Guiana.

2. This is a tree of eighty feet high, with a very thick trunk, much branched at the top: the bark is reddish, thick, and wrinkled. Leaves smooth, entire, green, the flowers were not observed by Aublet.

3. A tall tree, rising to fifty feet, with a smooth, gray bark: very branchy at top: branches some rising, others hanging; leaves alternate: their wings smooth, strong, green, oval, and obtuse: from the bosoms of the leaves spring the spikes of flowers about three inches long: these flowers are alternate, solitary, and borne each on a peduncle of different length in different flowers, and furnished at the base with a small scale. Grows in forests in Guiana.

Maguna. See *Dolichos*.

Magarlota. See *Gerrera*.

Man Apple. See *Solanum*.]

Manner. See *Rubia*.

[Massa. See *Berberys*. Matsa of Forskahl is B. lanceolata of Vahl, *symb.* 1. 19. *t.* 6.

[Mawort. See *Aconum* & *Asperugo*.

Magistrantia. See *Imperatoria*.]

MAGNOLIA. (*So named by Plumier, in honour of Pierre Magnol, Professor of Medicine, and Prefect of the botanic garden at Montpelier. He published* Botanicum Monipelicnse, 1676. Prodromus Hist. Plant. 1689. Hort. Monspel. 1697. Character Plantarum. 1720.)

Linn. gen. n. 690. *Reich. n.* 748. *Schreb. n.* 942. *Plum.* 7. *Juss.* 281. *Dill. elth.* 168. *Gærtn. t.* 70.

Class. 13. 7. Polyandria Polygynia.

Nat. order of *Coadunatæ.—Magnolia*, Juss.

GENERIC CHARACTER.

Cal. *Perianth* three-leaved: *leaflets* ovate, concave, petal-shaped, deciduous.

Cor. *Petals* nine, oblong, concave, blunt, narrower at the base.

Stam. *Filaments* numerous, short, acuminate, compressed, inserted into the common receptacle of the pistils below the germs. *Anthers* linear, fastened on each side to the margin of the filaments.

Pist. *Germs* numerous, ovate-oblong, two-celled, covering a club-shaped receptacle. *Styles* recurved, contorted, very short. *Stigmas* longitudinal on the style, villose.

Per. *Strobile* ovate, covered with *Capsules*, which are compressed, roundish, scarcely imbricate, clustered, acute, one-celled, two-valved, sessile, opening outwards, permanent.

Seeds two or one, roundish, berried, hanging by a thread from the sinus of each scale of the strobile.

Obs. *The Germs are two-celled and two-seeded: the ripe capsules one-celled, two-valved.* Gærtn.

ESSENTIAL CHARACTER.

Cal. three-leaved. *Pet.* nine. *Caps.* one-celled, two-valved. *Seeds* berried, pendulous.

SPECIES.

1. Magnolia grandiflora. *Laurel-leaved Magnolia.*
Lin. spec. 755. *fyst.* 508. *Reich.* 2. 625. *Gærtn. fruct.* 1. 343. *Marsh. arbust.* 84. *Mill. fig.* 1. 172. *Catesb. car.* 1. 61. *Trew ehret. t.* 33. *Hort. angl.* 1. 14.
α. Common Laurel-leaved Magnolia.
Leaves oblong-elliptic coriaceous, flowers somewhat contracted.
β. Broad Laurel-leaved Magnolia.
Leaves obovate-oblong, flowers expanded.
γ. Long Laurel-leaved Magnolia.
Leaves oblong-lanceolate-bent at the tip, flowers somewhat contracted. Ait. hort. kew. 2. 251.
Leaves perennial oblong, tomentose underneath, petals obovate.
[2. Magnolia Plumieri. *Plumier's Magnolia.*
Swartz. prodr. 87.
M. *Plum. gen.* 38. 7. *ic. nat. Barm* 161.
Leaves perennial ovate-roundish smooth on both sides.]
3. Magnolia glauca. *Swamp Magnolia.*
Lin. spec. 755. *fyst.* 508. *Reich.* 2. 626. *hort. cliff.* 222. *Marsh. arbust.* 83. *Du Roi harbk.* 1. 399. *Gron. virg.* 61. *Kalm. itin.* 2. 324. *engl. ed.* 1. 204. *Dill. elth.* 207. *t.* 168. *f.* 205. *Catesb. car.* 1. *t.* 39. *Trew Ehret. t.* 9. *Pluk. phyt. t.* 68. *f.* 4.
Laurus Tulipifera baccis calycularis. *Bauhini. Raii hist.* 1690. *item* 1798. *n.* 4.
α. M. glauca latifolia. *Deciduous Swamp Magnolia.*
β. M. glauca longifolia. *Evergreen Swamp Magnolia. Ait. hort. kew.* 2. 251.
Leaves ovate-oblong glaucous underneath.
[4. Magnolia obovata.
Thunb. in Linn. transf. 2. 336.
M. glauca *β. Thunb. jap.* 236.
Mokkwuren. *Kæmpf. amæn.* 5. 845. *ic. select. t.* 43, 44.
Leaves obovate, parallel-nerved and netted underneath.
5. Magnolia tomentosa.
Thunb. in Linn. transf. 2. 336.
M. glauca *α. Thunb. jap.* 236.
Mitsmata, item Kobus. *Kæmpf. amæn.* 5. 845. *ic. select. t.* 42.
Leaves elliptic tomentose underneath.]
6. Magnolia acuminata. *Blue Magnolia.*
Lin. spec. 756. *fyst.* 508. *Reich.* 2. 626. *Catesb. car.* 2. *t.* 15. *Gron. virg.* 61. *Kalm. itin.* 2. 324. *Marsh. arbust.* 83.
Leaves ovate-oblong acuminate.
7. Magnolia tripetala. *Umbrella Magnolia* or *Umbrella Tree.*
Lin. spec. 756. *fyst.* 508. *Reich.* 2. 626. *Catesb. car.* 2. *t.* 80. *Trew Ehret. t.* 32. *Marsh. arbust.* 84.
Leaves lanceolate, outer petals hanging down.

DESCRIPTIONS, *&c.*

[These are trees, chiefly natives of North America, none of Europe. The leaves are large, and the flowers are axillary, very large, and odorous.]

1. The Great laurel-leaved Magnolia or Tulip-tree, in the Southern Provinces of North America, rises with a straight trunk of two feet or more in diameter to the height of seventy or eighty feet, or more, dividing into many spreading branches, that form a large regular head. The leaves are nine or ten inches long, and three inches broad in the middle, of a thick

conſiſtence, reſembling thoſe of the common Laurel, but much larger, entire but a little waved on their edges, of a lucid green on the upper ſurface, and ſometimes ruſſet-coloured underneath; they are ſeſſile, placed without order on every ſide the branches, and continue green throughout the year, falling off only as the branches extend, and new leaves are produced. The flowers are produced at the ends of the branches: they are very large, and compoſed of eight or ten petals, narrow at their baſe, but broad rounded and a little waved at their extremities; they ſpread open very wide, are of a pure white colour, and have an agreeable ſcent.

[The fruit is compoſed of many capſules diſpoſed in form of a ſtrobile; they are triangular, compreſſed wedge-ſhaped, coriaceous, one-celled, the outer ſide thickened, corky, pubeſcent; they gape open, and each cell is lined with its own papery membrane, and is accompanied at its lower and anterior margin with the ſtyle converted into a woody briſtle. Common receptacle long, roundiſh, covered all over with the capſules placed vertically. Proper receptacle a filiform umbilical chord, becoming finally very long, fringing from the inner angle of the capſule. Seeds regularly two to each capſule, but ſometimes only one, parabolical, plano-convex or obſoletely angular, berried, ſcarlet [a].]

The ſummers in England are not warm enough to bring the fruit to perfection, though ſome old plants often form ſtrobiles. This tree in its native country begins to produce flowers in may, and continues a long time in flower, ſo that the woods are perfumed with their odour the greateſt part of the ſummer: but in England it ſeldom begins to flower till the middle or end of june, and does not continue long in beauty.

This fine tree is a native of Florida and Carolina, and in common with many of the trees and plants of that country, is impatient of cold here, and difficult to keep in perfection, either abroad or houſed. If it can be ſo far naturalized as to endure the cold of our ſevere winters in the open air, it will be one of the greateſt ornaments to our plantations. The time when it ſuffers moſt is by the early froſts in autumn, the extremities of the ſhoots being then tender.

[In the Kew catalogue, it is ſaid, from Cateſby, that the Laurel-leaved Magnolia was cultivated before 1737, by Sir John Colliton.] Mr. Miller relates that there were a great many young plants in England before the year 1739; that a great part of theſe were deſtroyed by that ſevere winter; and that ſince, few good ſeeds have been ſent to England, ſo that for many years after few of the plants were to be ſold in the nurſeries. He had however a pretty large plant, which having been apparently killed by the ſevere winter of 1739-40, he cut down to the ground after midſummer, and the root ſhot up again the year after. He ſays that the largeſt tree of this ſort which he had met with in England was in the garden of Sir John Colliton of Exmouth in Devonſhire; he alſo mentions a very handſome plant in Mr. Chriſtopher Gray's nurſery near Fulham; and many large thriving trees at Goodwood in Suſſex, the ſeat of his Grace the Duke of Richmond.

[2. Native of the iſlands of St. Lucia, Martinico, and Guadaloupe, in the Weſt Indies [b].] Mr. Miller remarks, that if Father Plumier's figure of the ſection of his fruit be exact, his muſt be a different genus from this; the ſeeds being repreſented within the fruit, lying round a column.

3. Swamp Magnolia uſually grows about fifteen or ſixteen feet high, with a ſlender ſtem, covered with a ſmooth whitiſh bark. The wood is white and ſpongy. Leaves thick and ſmooth, reſembling thoſe of the Bay, [entire, dark green on their upper ſurface, but whitiſh or glaucous, and a little hairy underneath.] The flowers are produced in may and june at the extremity of the branches; they are white, and have an agreeable ſweet ſcent; and have only ſix concave petals. After theſe are paſt the fruit increaſes to the ſize of a Walnut with its cover [an inch or more in length, and three fourths of an inch in diameter] of a conical ſhape: the ſeed is about the ſize of a kidney-bean. This fruit is at firſt green, afterwards red, and when ripe, of a brown colour. In North America, where it grows naturally in low moiſt or ſwampy ground, there is a ſucceſſion of flowers on the trees for two months or more: but in England there are ſeldom more than twelve or fourteen flowers on a tree, and thoſe of ſhort duration.

The young plants frequently retain their leaves through the greateſt part of winter, and often do not fall, till the young ſhoots thruſt them off; but when they are three or four years old, they conſtantly caſt their leaves by the beginning of november.

[In the Kew catalogue however the *deciduous* is diſtinguiſhed from the *evergreen* Swamp Magnolia.]

The greateſt number of theſe trees, which are now growing in England, are at his Grace the Duke of Norfolk's, at Worklop Manor, in Nottinghamſhire.

[It was cultivated in 1688, being inſerted by Ray in his catalogue of rare exotic trees and ſhrubs, cultivated in the epiſcopal garden at Fulham, by Biſhop Compton, to whom it was ſent by Baniſter [c].

In America this tree is known by the names of *White Laurel*, *Swamp Saſſafras*, and *Beaver-Tree*. It has the laſt name, becauſe the root is eaten as a great dainty by Beavers, and this animal is caught by means of it. Kalm ſays that this tree drops its leaves early in autumn, though ſome of the young trees keep them all the winter. This correſponds with what Mr. Miller affirms, as ſtated above. Kalm alſo reports, that he has ſeldom found the Beaver tree to the north of Penſylvania, where it begins to flower at the end of may. Theſe trees may then be diſcovered by the ſcent of the bloſſoms at the diſtance of three quarters of a mile, if the wind be favourable. It is beyond deſcription pleaſant to travel in the woods at that ſeaſon, eſpecially in the evening. They retain their flowers for three weeks, and even longer. The berries alſo look very handſome, when they are ripe, being of a rich red colour, and hanging in bunches on ſlender threads. They cure coughs and other pectoral diſeaſes by putting theſe berries into brandy, and giving a draught of the liquor every morning; it is even ſaid to have ſalutary effects in conſumptions. A decoction of the bark alſo, or an infuſion of it in brandy, is ſaid not only to eaſe pectoral diſeaſes, but to be of ſervice againſt internal pains and heat, and it is thought that it will ſtop a dyſentery. For a cold they commonly boil the branches in water.—The wood is made uſe of for joiner's planes [d].—Dillenius uſually obſerved eight petals in the corolla; and remarks that the flowers never open in a morning, that the calyx falls off at the ſecond opening of the flower, but that the petals dry on, and that the ſcent reſembles that of Lily of the Valley, with a mixture of aromatic.

4. The leaves of this are obovate-oblong, entire, ſmooth, from a hand to a foot in length, with the nerves underneath villoſe.

5. The leaves are elliptic-lanceolate, acute, petioled, entire, ſmooth above, ſilky tomentoſe underneath, a hand in length. Peduncles ſhort, reflex, grooved, thick, tomentoſe. Both are natives of Japan, and were originally ſuppoſed by Thunberg to be the ſame with M. glauca of America. They are cultivated by the Japaneſe for the elegance of the flowers [e].

6. This tree grows ſometimes to the height of thirty or forty feet, and the trunk is eighteen inches or more in diameter.] Leaves near eight inches long, and five broad. The flowers come out early in the ſpring, are compoſed of twelve [large whiſh-coloured petals. The fruit is about three inches long, ſomewhat reſembling a ſmall Cucumber, whence the inhabitants of North America call it Cucumber Tree [f].] The wood is of a fine grain, and an orange colour. It is not very common in any of the inhabited parts of America. Some of the trees were diſcovered by Mr. John Bartram, growing on the north branch of Suſquehannah river. [It was introduced in 1736, by Mr. Peter Collinſon [g].]

[a] Gærtner. [b] Swartz. [c] Hiſt. p. 1798. [d] Kalm. [e] Thunb. in Linn. tranſ. & jap. [f] Marſhall. [g] Hort. kew.

7. The Umbrella tree uſually grows from ſixteen to twenty feet high, with a ſlender trunk, [covered with a ſmooth bark, and dividing into ſeveral branches.] The leaves are remarkably large, [often from twelve to fifteen inches or more in length, and five or ſix in width, narrowing to a point at each extremity, placed at the ends of the branches in a circular manner, ſomewhat like an Umbrella, whence its name. The flowers are compoſed of ten, eleven or twelve large, oblong, white petals, the outer ones hanging down. Seed-veſſels oblong, conical, between three and four inches in length, and about an inch and half in diameter[1].]

The wood is ſoft and ſpongy; and the leaves drop off at the beginning of winter.

This is pretty frequent in Carolina. It is alſo found in Virginia, [and ſome parts of Penſylvania. It was cultivated here in 1752, according to Miller[2].]

PROPAGATION AND CULTURE.

The Magnolias are propagated by ſeeds, procured from the places of their natural growth: theſe ſhould be put up in ſand, and ſent over as ſoon as poſſible; for if they are kept long out of the ground, they rarely grow, and therefore ſhould be ſown ſoon after they arrive. It is a good way to ſow them in pots, and plunge them into an old hot-bed of tanner's bark.

They may alſo be raiſed from layers and cuttings, but theſe do not thrive ſo well as thoſe which come from ſeeds, nor will they grow to near their ſize.

1. The firſt ſort is not ſo difficult to train up as the third, but in order to get the plants forward, it will be proper when they are removed out of the ſeed-pots, to plant them each into a ſeparate ſmall pot, filled with ſoft loamy earth, and plunge them into a gentle hot-bed of tanner's bark, obſerving to ſhade them from the ſun, and admit proper air to them; but in midſummer, if they are well rooted, inure them to the open air gradually, and place them in a ſheltered ſituation, where they may remain till autumn; but on the firſt approach of froſt remove them under ſhelter. When the plants have got ſtrength, ſome of them may be turned out of the pots, and planted in the full ground in a warm ſheltered ſituation; but part ſhould be kept in pots, and ſheltered in the winter, leſt thoſe in the open air ſhould be killed.

If the plants make good progreſs, they will be ſtrong enough to plant in the full ground in about ſix or ſeven years from ſeeds. Remove or ſhift them in march, before they begin to ſhoot; which may ſometimes happen to be too ſoon to turn them out of the pots into the full ground; but as there will be no danger in removing them out of the pots, the ball of earth being preſerved to their roots, it is beſt to defer this till the month of april: but it will be neceſſary to harden thoſe plants which are intended to be planted out, by expoſing them to the air as much as poſſible before, which will keep the plants back, and prevent their ſhooting: for if they make ſhoots in the green-houſe, they will be too tender to bear the ſun, until they are by degrees hardened to it, and the froſts which frequently happen very late in the ſpring will greatly pinch them.

Two or three winters after they are planted out, it will be neceſſary to lay ſome mulch on the ſurface of the ground about their roots, as alſo to throw ſome mats over their heads, eſpecially at the beginning of the morning froſts in autumn: but in doing this, the heads of the plant ſhould never be too cloſely covered up, leſt the ſhoots ſhould grow mouldy, which will be as injurious to them as the froſt. As the plants get ſtrength, they will be better able to endure the cold of our climate; though it will be proper to lay ſome mulch about their roots every winter, and in very ſevere froſt to cover their heads and ſtems. [This is beſt done by erecting an occaſional frame of poles, whereon the mats may be thrown, which by being at a diſtance from the plant, will not confine it, or bruiſe the tender ſhoots; and they may be put aſide in the day time towards the ſun, or from the wind.]

3. When the Swamp Magnolias are tranſplanted from the place of growth into dry ground, they make handſomer trees, and produce a greater number of flowers: this however is to be underſtood of America, for in Europe they do not thrive ſo well in a dry ſoil as in a moiſt loam.

This and the other deciduous ſorts are not ſo tender as the firſt, but will endure the cold very well, after they have once acquired ſtrength: for as they loſe their leaves in the winter, the froſt has not ſo much power over them as over the firſt, whoſe leaves are frequently tender towards the ends of the ſhoots, eſpecially when it grows freely, or ſhoots late in the autumn.

[In increaſing theſe trees by Layers, chooſe the young pliable ſhoots, giving them a gentle twiſt or a ſlit. It may be done either in ſpring or autumn. Some may root in one year, but more probably not till the ſecond. Take them off in march, plant them in pots, and plunge them in a moderate hot-bed for a month or two, and thus they will make good plants by autumn. Shelter them during winter for a year or two, and then plant them in the full ground.

For Cuttings, take ſhort young ſhoots of the preceding year; in march or april plant them in pots; plunge the pots up to the brims in a hot-bed; water and ſhade them occaſionally; and when they are rooted inure them by degrees to the open air.

MANAGOKI. See *Swietenia*.

MAHALEB. See *Prunus*.

MAHERNIA.

Lin. gen. Reich. n. 424. Schreb. n. 534. Juſſ. 290. Cavan. diſſ.

Claſſ. 5. 5. Pentandria Pentagynia.

Nat. order of *Columniferæ. Tiliaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-cleft, bell-ſhaped; with awl-ſhaped longer teeth: permanent.

COR. *Petals* five, heart-ſhaped, oblong, ſpreading, twice as long as the calyx.

Nectaries five, obcordate, pedicelled, ſurrounding the germ, ſhorter than the calyx.

STAM. *Filaments* five, capillary, placed on the nectary, united at the baſe, ſhorter than the calyx. *Anthers* oblong, acuminate, erect.

PIST. *Germ* ſubpedicelled, obovate, five-angled. *Styles* five, briſtle-ſhaped, erect, the length of the petals. *Stigmas* ſimple.

PER. *Capſule* ovate, five-celled, five-valved.

SEEDS few, kidney-form.

OBS. *It has a very great affinity to* Hermannia, *but their nectaries cannot be combined in the ſame character.*

ESSENTIAL CHARACTER.

Cal. five-toothed. *Pet.* five. *Nect.* five, obcordate, placed under the filaments. *Capſ.* five-celled.

SPECIES.

1. Mahernia verticillata. *Whorl-leaved Mahernia.*
Lin. ſyſt. 308. *Reich.* 1. 776. *mant.* 59.
Leaves in whorls linear.

2. Mahernia pinnata. *Wing-leaved Mahernia.*
Lin. ſyſt. 308. *Reich.* 1. 776. *Curt. magaz.* 277. *Comm. rar.* t. 7. (Ketmia) *Pluk. mant.* t. 244. f. 3. (Ciſtoides)[1]
Hermannia pinnata. *Lin. ſpec.* 943. *hort. cliff.* 342. *Mill. dict. n.* 6.
[H. verticillata. *Berg. cap.* 169.
Leaves three-parted pinnatifid.

3. Mahernia inciſa. *Cut-leaved Mahernia.*
Curt. magaz. 353.
Leaves lanceolate goſhed.

DESCRIPTIONS, *&c.*

1. Stem ſhrubby, diffuſed; with filiform branches. Leaves frequently from eight to ten in a whorl, ſcarcely divided or pinnatifid. Manner of fructification the ſame as in Hermannia, terminating, with the pedunculs commonly two-flowered. Corolla yellow. Take away the nectarics from the petals, and add them to the ſtamens, and you will have a Hermannia, though a ſtrange one, with the leaves in whorls[2].

Juſſieu remarks, that the claws of the petals are not

[1] Marſhall [2] Hort. kew.

[1] Linn. mant.

con-

convoluted; the filaments flat and narrow below, dilated and obconiate above, with the tip contracted: one ſtyle and ſtigma, or perhaps rather five very cloſely cohering. The reſt as in Hermannia.

Native of the Cape of Good Hope.]

2. This riſes with a ſhrubby ſtem near three feet high, ſending out many ſlender delicate branches, covered with a reddiſh bark. The flowers come out from the ſide of the branches in ſmall cluſters, [they are of a lively red, when they firſt open, and hang down like little bells, commonly two together; appearing from june to auguſt and ſeptember.—Native of the Cape of Good Hope. Introduced in 1774, by Mr. Francis Maſſon. Linnæus regarded it at firſt as a ſpecies of Hermannia, to which genus it is very nearly allied.

3. In point of fize and mode of growth this beautiful ſpecies comes near to the preceding, but differs eſſentially in the ſingular liſtipidity of its ſtalks, the form of its leaves, and the colour of its flowers.

The ſtalks to the naked eye diſcover a manifeſt roughneſs; within a magnifying glaſs it appears that they are beſet on every ſide with little protuberances, whence iſſue tufts of pellucid hairs, and here and there a ſingle hair is diſcoverable with a ſmall red viſcid globule at its extremity: a portion of the ſtalk, when highly magnified, ſomewhat reſembles that of the creeping Cereus. The leaves, which are not ſo manifeſtly hairy as the ſtalk and calyxes, are deeply jagged on the edges, and ſomewhat reſemble thoſe of Pelargonium tricolor. The flowers when in bud are of the richeſt crimſon: as they open they incline to a deep orange, and finally become yellowiſh.

Native of the Cape of Good Hope. It flowered in Mr. Colvill's nurſery in 1796.

The name Mahernia, by which this genus is diſtinguiſhed, is ſaid to be an anagrammatic inverſion of Hermannia; the two genera being very nearly allied, or rather in reality ſcarce to be ſeparated.

PROPAGATION AND CULTURE.

They may be increaſed by cuttings.

MAHOE. See *Hibiſcus.*
MAHOGANY TREE. See *Swietenia.*
MAHURIA. See *Bonnetia.*
MAIANTHEMUM. See *Convallaria.*
MAIDENHAIR. See *Adiantum, Aſplenium.*
MAIDENHAIR TREE. See *Ginkgo* and *Salisburia.*
MAIDEN PLUM. See *Comocladia.*
MAIL-ANSCHI. See *Lavatera.*]
MAJORANA. See [*Mentha, Origanum,*] *Origanum.*
[MAITHES. See *Anthemis.*
——— Red. See *Adonis.*
MALA. See *Pyrus.*
——— Armeniaca. See *Prunus.*
——— Goeſia. See *Averrhoa Carambola.*
——— inſana. See *Solanum.*
MALABAR NIGHTSHADE. See *Baſella.*
——— Nut. See *Juſticia.*
MALACCA-PEA. See *Piſidium.*
MALACCA-SCHAMBU. See *Eugenia.*
MALACHODENDRUM. (*From* μαλακος *a Mallow; which is from* μαλασσω *ſoft; and that from* μαλαττω *to ſoften: and* δενδρον, *a tree.*)

Lin. gen. Schreb. n. 1143. *Mitch.* 16. *op. Cateſb. 3.* 13. *Cavan. diſſ.* 5. 361.

Claſs 16. 6. Monadelphia Polyandria.
Nat. order of *Columniferæ. Malvaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, deeply five-cleft; *diviſions* lanceolate, acute, permanent.
COR. *Petals* five, roundiſh, ereſt, ſpreading, equal, large.
STAM. *Filaments* numerous, capillary, uniting at bottom into a ſhort cylinder, ſhorter than the corolla. *Anthers* kidney-form.
PIST. *Germ* pear-ſhaped, pentagonal, villoſe. *Styles* five, ereſt, the length of the ſtamens. *Stigmas* globular.
PER. *Capſules* five, ovate-acuminate, coadunate, two-valved.
SEEDS ſolitary, ovate-three-ſided.

ESSENTIAL CHARACTER.

Cal. ſimple. *Germ* pear-ſhaped, pentagonal. *Styles* five. *Capſ.* five, one-ſeeded.

SPECIES.

1. Malachrodendrum ovatum.
Cavanill. diſſ. p. 362. *n.* 437. *t.* 158. *f.* 2.
Leaves ovate ſmooth.
2. Malachrodendrum corchoroides.
Stewartia corchoroides. *Forſt. ſpec. aſp. urab. p.* 126. *n.* 98.
Sida ſpinoſa. *Vahl. ſymb.* 2. *p.* 78.
Leaves villoſe.

DESCRIPTION, &c.

1. Stem arboreſcent, branchy, a fathom or more in height. Leaves alternate, ovate-acuminate, with diſtant ſerratures, and a ſingle branching nerve: they are pubeſcent while young, and afterwards ſmooth: the foot-ſtalks are ſcarce an inch long, and are cylindrical beneath, and afterwards channelled with ſmall membranes, and ſomewhat villoſe: there are no ſtipules: the flowers are large, axillary, and ſubſeſſile: the calyx villoſe externally, and ſmooth internally: the corolla is two inches long, yellow or whitiſh, villoſe externally: the claws of the petals ſomewhat feathery.

2. The ſtem is ſhrubby, and a foot and half in height: the leaves ovate, ſerrate, and villoſe underneath: the flowers ſmall and yellow: the capſules five, ſeparate, and two-horned.

MALACOIDES. See *Malope.*
MALACHRA. (*From* μαλακος, *ſoft.*)

Lin. gen. Reich. n. 903. *Schreb.* 1131. *Cavan. diſſ.* 2. 97. *Juſſ.* 272.

Claſſ 16. 6. Monadelphia Polyandria.
Nat. order of *Columniferæ.—Malvaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth common* moſtly five-flowered, three or five-leaved, large: *leaflets* cordate, acute, permanent. *Chaffs* briſtle-ſhaped, ſet round the proper perianths.
Perianth proper one-leafed, bell-ſhaped, ſmall, five-cleft, permanent.
COR. proper. *Petals* five, obovate, entire, faſtened at bottom to the tube of ſtamens.
STAM. *Filaments* many, conjoined below into a tube, above looſe gaping along the whole ſurface of the cylinder. *Anthers* kidney-form.
PIST. *Germ* orbicular. *Style* cylindric, ten-cleft. *Stigmas* globular.
PER. *Capſule* roundiſh, diviſible into five cells, compreſſed on one ſide, gibbous on the other.
SEEDS ſolitary, roundiſh, angular.
OBS. *The diviſions of the ſtyle and the ſtigmas are twice as many as the capſules.* Cavan.

ESSENTIAL CHARACTER.

Cal. common three-leaved, many-flowered, larger. *Arils* five, one-ſeeded.

SPECIES.

1. Malachra capitata. *Heart-leaved Malachra.*
Lin. ſyſt. 624. *Reich.* 3. 340.]
Sida capitata. *Lin. ſpec.* 965. *Mill. muſ.* 1743. 137. *t.* 2. *Mill. dict. n.* 10. *Brown. jam.* 281.
Malva fruteſcens hirſuta, flor. luteis in capitulum congeſtis. *Plum. ſpec.* 2. *ic.* 169. *f.* 1.
M. aſpera major aquatica. *Sloan. jam.* 1. 217. *t.* 137. *f.* 1. *Raii ſuppl.* 320.
Heads pedunculed three-leaved ſeven-flowered.
[2. Malachra radiata.
Lin. ſyſt. 624. *Reich.* 3. 340.
Sida radiata. *Lin. ſpec.* 965.
Alcea hirſutiſſima fruteſcens. *Plum. ſpec.* 2. *t.* 19.
Heads pedunculed five-leaved many-flowered, leaves palmate.
3. Malachra bracteata.
Cavanill. diſſ. p. 98. *n.* 168.
Leaves palmate, heads many-flowered, flowers very ſmall and bracteated.
4. Malachra faſciata.
Jacqu. ic. rar. 548.
With ſerrate three-lobed leaves, the loweſt five-lobed, the common involucres three-leaved and about five-flowered.

5. Malachra

[*] Hort. Kew. [†] Curtis.

5. Malachra alcæifolia.
Jacqu. ic. rar. 549.
With five-lobed leaves cordate at the base; the common involucre five-leaved, and about ten-flowered.

DESCRIPTIONS, &c.

1. Stem thick, erect, two feet high, rough, as is the whole plant; leaves foot-ſtalked, heart-ſhaped; ſtipules four or ſix, ſubulate. Flowers aggregate, pedunculed; peduncles common, two, axillary, placed here and there; each flower ſeſſile. Calyx common, of three ſubtriangular-auriculated leaflets, which are ſtiff and ſharp. Calyx proper ſingle, one-leaved, half-five-cleft, with the diviſions fanced, briſtly at tip, with white briſtles. Corolla yellow, ſpreading, petals roundiſh.

Native of marſhy places in the Caribbee iſlands.

2. Stem tender, round, whitiſh-green, coated with rufous pungent hairs; as is likewiſe the whole plant, which is branchy and taller than a man. Leaves commonly divided into five lobes, which are crenated, hirſute, and bright green. Calyx triple: the common one of five or ſix unequal, oblong, acuminated leaflets, which are toothed, and enlarged below, and very ſhortly foot-ſtalked: the partial exterior one of eight linear leaflets: the interior one-leaved, half-five-cleft. Corolla purpliſh; ſcarce an inch in diameter: tube ſcarlet. Native of marſhy places in Domingo.

3. Stem as well as the whole plant very hairy, the hairs pungent and numerous. Leaves with long foot-ſtalks, heart-ſhaped, roundiſh-palmated, crenated, with ſeven deep acuminated lobes. Stipules capillary, villoſe. Flowers about fourteen on the tip of the peduncle, which is ſolitary and axillary. Each flower is ſhortly pedicelled, and almoſt always ornamented with a leafy bractæ, which is roundiſh, but acuminated. Calyx triple. Corolla ſcarce larger than the calyx, whitiſh, marked in the bottom with red ſtreaks.

Native of America. Cavanilles ſaw only one ſpecimen in the collection of Juſſieu.

4. This has a ſingle upright ſtem of ſix feet in height, and twice the thickneſs of the thumb: it emits branches from the bottoms of almoſt all the leaves, and is thickly beſet with pungent villi. From the right ſide of the boſom of all the branches which proceed from the ſtem a green ſmooth upright ſaſcia aſcends towards the next branch, and is commonly about two lines broad. The leaves are on long foot-ſtalks, and are ſerrated and veiny, roughiſh at the edges; the lower ones roundiſh, and five-lobed at the margin: the upper ones three-lobed, and longer and ſharper. The heads of flowers are axillary: the flowers ſmall, roſe-coloured outward, within whitiſh, with purple ſtreaks. Native of America.

5. Stem ſingle, ſix feet high, upright, an inch thick, green, branching from the axils of the leaves, and covered with glittering pungent hairs: leaves alternate, cordated at the baſe, roundiſh, veiny, very ſpreading, obtuſely ſerrate-crenated. Flowers headed, two or three together, axillary, rather ſmall in proportion to the plant, and of a deep yellow: the flower is ſeated, as in Turnera ulmifolia, at the baſe of each leaflet of the common calyx. Native of Martinico.

MALAMIRI. See *Piper*.
MALANTA. See *Cunninghamia*.
MALAN-KUA. See *Kæmpferia*.
MALAXIS. (*From μαλασσω or μαλαττω, to ſoften.*)
Soland. *Linnæa. prodr.* 119. *Schreb. gen. n.* 1370.
Claſſ. and Ord. 20. 1. Gynandria Diandria.
Nat. order of *Orchideæ*.

GENERIC CHARACTER.

CAL. *Spathes* none. *Perianth* none.
COR. *Petals* five: *three outer*, of which two upper, one lower, lanceolate, blunt, ſpreading: *two inner* linear, acute, reflex about the germ.
Nectary in the middle of the corolla, leſs than the petals, concave, with convex margins, cordate, acuminate behind, bifid in front.
STAM. *Anthers* two ovate, ſcarcely pedicelled, inſerted into the pitcher of the piſtil at the edge, ſitting on two little excavations at the bottom.
PIST. *Germ* pedicelled, ſomewhat cylindric, inferior. *Style*, a pitcher in the middle of the nectary, halved, very ſhort, ſpreading, bearing the ſtamens on its hinder margin. *Stigma* bifoce the little excavations, near the anthers.
PER. *Capſule* pedicelled, oblong, three-keeled, one-celled, opening under the keels, cohering at top and bottom.
SEEDS extremely minute.

ESSENTIAL CHARACTER.

Nectary one-leafed, concave, cordate, acuminate backwards, bifid in front, cheriſhing the genitals in the middle.

SPECIES.

1. Malaxis ſpicata.
Stoarta. prodr. 119.
Scape quadrangular, flowers in ſpikes.
2. Malaxis umbelliflora.
Stoarta. prodr. 119.
Scape quinquangular, flowers umbelled.
Both theſe are natives of Jamaica. Several ſpecies of Ophrys, in Linnæus's ſecond diviſion, with round bulbs, belong properly to this genus.
MALE BALSAM APPLE. See *Momordica*.
MALETTA-MALA-MARAVARA. See *Acrioſtichum*.
MALI FOLIO. See *Croton* and *Mauruea*.
MALLA HOLLA. See *Olax*.
MALLAM TODDALI. See *Celtis* and *Mantingia*.
MALLOCOCCA. See *Grewia*.]
MALLOW. See *Malva*.
[——— JEWS. See *Corchorus*.
——— MARSH. See *Althæa*.
——— INDIAN. See *Sida*.
——— TREE. See *Lacuttera*.
——— VENICE. See *Hibiſcus*.
MALO APEINIS. See *Pſidium*.
MALOCOCCA. See *Grewia*.]
MALOPE. (*Seems to be a corruption of* MALACHE.)
Lin. gen. n. 843. *Reich. n.* 908. *Schreb. n.* 1136.
Cavan. diſſ. 2. 84. *Juſſ.* 272. Malacoides.
Tournef. t. 25.
Claſſ. 16. 6. Monadelphia Polyandria.
Nat. order of *Columniferæ*. *Malvaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* double. *Outer* three-leaved, broader: *leaflets* cordate, acute, permanent. *Inner* one-leafed, half-five-cleft, more erect, permanent.
COR. *Petals* five, obcordate, præmorſe, ſpreading, faſtened to the tube of the ſtamens at the baſe.
STAM. *Filaments* numerous, at bottom united into a tube, above at and below the apex of the tube ſeparate and looſe. *Anthers* almoſt kidney-form.
PIST. *Germs* roundiſh. *Style* ſimple, the length of the ſtamens. *Stigmas* many, ſimple, briſtle-ſhaped.
PER. *Capſule* roundiſh, many-celled: cells as many as there are ſtigmas, conglomerated into a head.
SEEDS ſolitary, kidney-form.

ESSENTIAL CHARACTER.

Cal. double; outer three-leaved. *Arills* glomerate one-ſeeded.

SPECIES.

1. Malope Malacoides.
Lin. ſpec. 974. *Juſſ.* 627. *Reich.* 3. 553. *hort. cliff.* 347. *upſ.* 209. *Sabb. hort. t.* 1. 50.
Malva betonicæ folio. *Mor. hiſt.* 2. 522. *ſ.* 5. *t.* 17. *f.* 11. *Boce. ſic.* 15. *t.* 8. *f.* 2.
Alcea beton. folio, flore purpureo violaceo. *Barr. ic.* 1189.
Leaves ovate crenate ſmooth above.
[2. Malope parviflora.
L'Herit. ſtirp. nov. 5. 105. *t.* 50.
Calyxes ſimple, leaves ſubcordate ovate, peduncles ſcarcely longer than the petiole.]

DESCRIPTIONS, &c.

1. The whole plant has greatly the appearance of Mallow, but differs from it in having the cells collected into a button, ſomewhat like a Blackberry. The branches ſpread, and lie almoſt flat upon the ground, extending a foot or more each way. The flowers are produced ſingly upon long axillary peduncles; they are in ſhape and colour like thoſe of Mallow.

[Native of the meadows of Tuſcany and of Barbary. Cultivated by Mr. Miller in 1759.

2. Plant a ſpan high. Root annual. Stem very much branched, ſpreading, red, ſubvilloſe, a foot high. Branchlets alternate, round, green, ſubflexuoſe. Leaves alternate, petioled, ſubcordate or ovate, the lower ones ſubtrilobate, toothed, blunniſh, moſtly five-nerved, nerves prominent underneath, ſcored above, almoſt naked, bright green, ſcarcely paler underneath, ſpreading, one inch long, ten lines wide. Petioles round, ſubvilloſe, a little ſhorter than the leaves. Stipules awl-ſhaped, erect, minute. Flowers axillary, pedunculed, ſolitary, ſeldom two together, a few terminating, purple, three lines wide. Peduncles upright, round, jointed at top, ſubvilloſe. Calyx one-leafed, bell-ſhaped, cloven beyond the middle, ſubvilloſe; diviſions lanceolate, acute. Corolla hemiſpherical: petals cuneate-roundiſh, clawed, oblique at the tip, emarginate, concave, contorted, imbricate on one ſide, the length of the calyx. Filaments capillary, reflex, ſcarcely ſhorter than the corolla. Anthers one-celled, peltate, red. Germ ſuperior, orbicular, depreſſed, pentagonal, covered with the ſheath of the ſtamens. Styles ten to twelve, filiform, reflex, united at the baſe, red, ſcarcely longer than the ſtamens. Stigmas headed-truncate, ſmall, red. Arils ſeveral, kidney-form, collected into a hemiſpherical head, without order, about a receptacle terminated by a filiform axis, covered by the converging calyx, valveleſs, brown. One ſeed to each aril, kidney-form, brown, ſmall.

Native of Peru, where it was found by Joſ. Dombey.

There are other Peruvian ſpecies with ſimple calyxes, which might therefore conſtitute a diſtinct genus.]

PROPAGATION AND CULTURE.

1. This is propagated by ſeeds, ſown in the place where they are deſigned to remain, for it does not bear tranſplanting well. If theſe ſeeds be ſown upon a warm border in auguſt, the plants will frequently ſtand through the winter, and flower early the following ſeaſon, ſo that good ſeeds may be obtained; but thoſe which are ſown in the ſpring rarely ripen the ſame year in England: and theſe plants being large, are often deſtroyed in winter, unleſs they are ſheltered under a frame. It ſeldom continues longer than two or three years.

[2. Ripens its ſeed if ſown in the ſame manner, in favourable ſeaſons.]

MALPIGHIA. (*So named by Plumier in honour of Marcello Malpighi, Profeſſor of Medicine at Bologna, the famous author of* Anatome Plantarum, 1675 and 1679.)

Lin. gen. n. 572. *Reich. n.* 621. *Schreb. n.* 779. *Plum.* 36. *Juſſ.* 253.

Claſſ 10. 3. Decandria Trigynia.

Nat. order of *Tribillatæ — Malpighiæ*. Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, erect, very ſmall, permanent, converging. There are two melliferous glands, oval and gibbous faſtened to the calycine leaflets on the outſide and at bottom.

COR. *Petals* five, kidney-form, large, plaited, ciliate, ſpreading, concave; with long linear claws.

STAM. *Filaments* ten broadiſh, awl-ſhaped, erect, placed in a cylinder, united below, ſmall. *Anthers* cordate.

PIST. *Germ* roundiſh, very ſmall. *Styles* three, filiform. *Stigmas* blunt.

PER. *Berry* globular, toruloſe, large, one-celled.

SEEDS three, bony, oblong, blunt, angular; with an oblong blunt kernel.

OBS. M. nitida *has only a ſingle ſtyle.*

ESSENTIAL CHARACTER.

Cal. five-leaved, with melliferous pores on the outſide at the baſe. *Pet.* five roundiſh, with claws. *Berry* one-celled, three-ſeeded.

SPECIES.

1. Malpighia glabra. *Smooth-leaved Barbadoes Cherry.*
Lin. ſpec. 609. *ſyſt.* 426. *Reich.* 2. 368. *mant.* 387. *hort. cliff.* 169. *upſ.* 108. *Mill. fig. t.* 181. *f.* 2. *Brown. jam.* 230. 2. *Comm. hort.* 1. 145. *t.* 75. (Ceraſus) *Sloan. jam.* 2. 106. *t.* 207. *f.* 2. *Raii dendr.* 74. (Arbor baccifera, &c.)
Leaves ovate quite entire ſmooth, peduncles umbelled.

2. Malpighia puniciifolia. *Pomegranate-leaved Barbadoes Cherry.*
Lin. ſpec. 609. *ſyſt.* 426. *Reich.* 2. 369. *hort. upſ.* 108. *Browne. jam.* 230. 3. *Plum. gen.* 46. *t.* 166. *f.* 2. *Pluk. phyt. t.* 57. *f.* 7.
Leaves ovate quite entire ſmooth, peduncles one-flowered.

3. Malpighia nitida. *Shining-leaved Barbadoes Cherry.*
Lin. ſpec. 609. *ſyſt.* 426. *Reich.* 2. 369. *Swartz obſ.* 180. *Jacqu. amer.* 136. *pict.* 68. *Brown. jam.* 230. 4.
Leaves lanceolate quite entire ſmooth, ſpikes lateral.

[4. Malpighia ſagina.
Swartz prodr. 74.
Leaves oblong-ovate entire ſilky-ſhining underneath, peduncles three-parted-umbelled.

5. Malpighia lucida.
Swartz prodr. 74.
Leaves obovate wedge-form quite entire verveleſs ſhining, peduncles terminating many-flowered.]

6. Malpighia urens. *Stinging Barbadoes Cherry.*
Lin. ſpec. 609. *ſyſt.* 426. *Reich.* 2. 369. *Brown. jam.* 229. 1. *Mill. fig. t.* 181. *f.* 1. *Plum. gen.* 46. *t.* 167. *f.* 1.
Melpilus americana, folio lato ſubtus ſpinoſo, fructu rubro. *Tournef. inſt.* 642.
Arbor baccifera, &c. *Sloan. jam.* 2. 106. *t.* 207. *f.* 3. *Raii dendr.* 74.
Leaves oblong-ovate, with rigid decumbent briſtles underneath, peduncles one-flowered aggregate.

7. Malpighia angulifolia. *Narrow-leaved Barbadoes Cherry.*
Lin. ſpec. 610. *ſyſt.* 426. *Reich.* 2. 370. *Jacqu. amer. pict.* 67. *Plum. gen.* 46.
M. linearis. *Jacqu. amer.* 135.
Leaves linear-lanceolate with rigid decumbent briſtles on both ſides, peduncles umbelled.

[8. Malpighia craſſifolia. *Thick-leaved Barbadoes Cherry.*
Lin. ſpec. 610. *ſyſt.* 426. *Reich.* 2. 370. *Brown. jam.* 231. 7. *Aubl. guian.* 457. *t.* 182.
Leaves ovate quite entire tomentoſe underneath, racemes terminating.

9. Malpighia coriacea.
Swartz. prodr. 74. *Brown. jam.* 230. 6.
Tiliæ affinis laurifolia, &c. *Sloan. jam.* 2. 20. *t.* 163. *f.* 1.
Leaves ovate acute entire ſmooth on both ſides, racemes terminating ſpiked.

10. Malpighia canefcens. *Downy-leaved Barbadoes Cherry.*
Act. hort. brew. 2. 105.
Leaves oblong blunt pubeſcent, racemes axillary compound.

11. Malpighia verbaſcifolia. *Mullein-leaved Barbadoes Cherry.*
Lin. ſpec. 610. *ſyſt.* 426. *Reich.* 2. 371. *Aubl. guian.* 460. *t.* 184.
Leaves lanceolate-ovate tomentoſe quite entire, racemes terminating.]

12. Malpighia aquifolia. *Holly-leaved Barbadoes Cherry.*
Lin. ſpec. 611. *ſyſt.* 426. *Reich.* 2. 371. *Plum. gen.* 46. *ic.* 168. *f.* 1.
M. ilicifolia. *Mill. dict. n.* 8. *defer. lucida. n.* 9. R.
Leaves lanceolate tooth-ſpiny biſpid underneath.

13. Malpighia coccigera.
Lin. ſpec. 611. *ſyſt.* 426. *Reich.* 2. 371. *Plum. gen.* 46. *ic.* 168. *f.* 2.
Leaves ſubcoate tooth-ſpiny.

[14. Malpighia marmincenſis.
Jacqu. amer. pict. n. 2.
Leaves ovate with decumbent rigid briſtles underneath.

15. Malpighia diphylla.
Jacqu. amer. pict. n. 4.
Leaves oval ſmooth, racemes terminating.

16. Malpighia odorata.
Jacqu. amer. pict. n. 5. *t.* 260. *f.* 36.
Leaves ovate emarginate tomentoſe on both ſides, racemes axillary.

17. Malpighia grandifolia.
Jacqu. amer. pict. n. 6.
Leaves lanceolate-oblong racemes corymbed axillary.

18. Mal-

18. Malpighia altiſſima.

Jacq. amer. pict. n. 7. obſ. 1. 40. Aubl. guian. 455. t. 181?

Leaves lanceolate ſerruginous underneath ſmooth above quite entire, racemes terminating upright.

DESCRIPTIONS, &c.

This genus conſiſts of trees and ſhrubs, ſome of them climbing, natives of the Weſt Indies. Leaves ſimple, oppoſite (except in n. 8.) ſome briſtly, the briſtles ſtinging and free at both ends; the petiole in many appeariclced or dilated within at the baſe. Peduncles axillary or terminating, one or many-flowered. Does Caucanthus of Surſinam belong to this genus? It is a ſhrub with oppoſite leaves, reſembling theſe plants in the ſtructure and diſpoſition of the flowers, with an unknown fruit! In M. glabra, two diviſions of the calyx are biglandular, two uniglandular, and one naked. M. nitida has only one ſtyle; and it may be doubted whether it is properly placed here.*]

1. This tree uſually grows to the height of ſixteen or eighteen feet, and we have ſeveral trees in England upwards of ten feet high. [Browne ſays, it is a ſmall ſhrub, which ſeldom riſes above ſix or ſeven feet in height, that it is erect in its growth, and divided into very delicate ſlender branches. According to Sloane however it riſes to about fifteen feet, with ſeveral trunks, covered with a clay-coloured ſmooth bark, and dividing into many ſpreading branches, making a pleaſant round head.] Leaves oppoſite, ſubſeſſile, acute, continuing all the year. Flowers in axillary and terminating bunches for umbels, on pedunckles half an inch long, and about four flowers on each. The pedicels have a ſingle joint. Calyx incurved, with glands as deſcribed above. Petals ſubcordate. Stigmas ſimple, with a little drop[a]. Petals roſe-colour or bright purple. Fruit red, round, the ſize of a Cherry, ſmooth-ſkinned, having one or more furrows on the outſide, and containing within a reddiſh, ſweetiſh, not unpleaſant, copious, juicy pulp; and ſeveral triangular fulcated ſtones, ſo fitted together as to ſeem one round one, with ſeveral furrows on the outſide.

This tree is planted in moſt gardens in the Weſt-Indies, where in a little time after rain they ſeldom miſs having ripe fruit, which is eſteemed pleaſant there[b].]

It grows plentifully in moſt of the iſlands in the Weſt-Indies, but whether it be natural there, or introduced only, is not eaſy to determine; for birds, being fond of the fruit, diſperſe the trees every where in great abundance. It uſually flowers here in march and april, but theſe flowers are ſeldom ſucceeded by fruit: it flowers again in july, and when the ſeaſon is warm, fruit is often produced from theſe flowers; the plants being then removed into the open air. [In the Kew catalogue it is ſaid to flower from december to march; and to have been cultivated by Mr. Miller in 1757[c].]

2. This riſes with a ſhrubby ſtalk ten or twelve feet high, dividing into ſeveral ſlender ſpreading branches, covered with a light brown bark. The flowers are produced in ſmall umbels at the end of the branches, upon ſhort pedunckles. Corolla pale roſe-colour. Berry roundiſh, pulpy, with ſeveral furrows, red when ripe, including three or four hard angular ſeeds. [It is of the ſame ſize and make with our common Engliſh Cherries, very ſucculent, and of a pleaſant ſubacid taſte. This ſhrub has much the appearance of the Pomegranate, is full of ſlender flexile branches, and ſeldom riſes above ſeven or eight feet[d].

Native of the Weſt Indies. Browne ſays it had been but lately introduced into Jamaica.—It was introduced here in 1690, by Mr. Bentinck[e].

3. This is a ſhrub, a fathom in height. Stem upright round even; branches deciuſſated upright round, covered with a ſtriated bark. Leaves deciuſſated-oppoſite, oblong, blunt, with a convex margin, nerved, veined, ſtriat, pale green, ſhining; on ſhort petioles. Racemes axillary, ſhorter than the leaves, many-flowered; flowers pedunckled, the ſame ſize as in M. glabra, yellow. Berry three-lobed, three-ſeeded, blood-red[f].

Browne ſays, it ſeldom riſes above three feet in height, but ſurrows out many ſlender upright branches, and bears large hard berries, which are much eaten by turkeys and other large fowls.

According to Jacquin, the leaves are four inches long, ending in a blunt point; there is only a ſingle ſtyle, (perhaps the three were glued together ſo as to appear one) and the ſeeds are ſmooth, commonly two in a berry.]

Mr. Miller ſays, his *nitida* is ten feet high, the ſtem covered with a light brown ſpotted bark; the flowers come out from the ſide of the ſtalks in ſmall umbels, ſtanding erect, on pedunckles ſcarcely an inch long; the corolla is of a pale bluſh colour; the berries are roundiſh and ſurrowed, covered with a red ſkin, and contain three hard angular ſeeds.

[Native of the Weſt-Indies. Common in Jamaica; about Carthagena in New Spain, where it was found by Houſtoun, and ſent to Miller; who therefore cultivated it before 1733[g].

4, 5. Natives of the Weſt-Indies[h].

6. This ſhrub riſes with a ſtrong upright ſtem about three feet high, covered with a brown bark, ſending out ſeveral ſide branches which grow erect. Leaves ending in acute points, ſeſſile, covered with fine briſtles, which do not appear unleſs cloſely viewed[i]; theſe briſtles are double pointed, and ſuſtained by pedicels of the ſame fragile tranſparent ſubſtance with themſelves, deſcending from the middle of them; theſe are eaſily broken, but the briſtles enter pretty deep in, and ſtick cloſe to whatever has forced them on[k]. The flowers come out upon long ſlender peduncles from the axils at each joint, four, five or ſix together, in a ſort of whorl. The three ſtyles ſtand apart. It flowers in july and auguſt (to october), but has not perfected ſeeds in England.

It is very different from Plumier's M. latifolia, folio ſubtus ſpinoſo (which Linneus gives as a ſynonym of his urens); the leaves of this being more than twice as big, and armed on both ſides with ſtinging briſtles; whereas that has them only on the under ſide. Plumier's plant alſo riſes with a much taller ſtem, and ſeldom flowers here.

The ſeeds of this plant were ſent to Mr. Miller (about 1753) by Monſ. Richard, gardener to the King of France at Trianon, by the name of *Bois de Capitain*[l]. It is called in the Engliſh Weſt-India iſlands *Cowhage Cherry*.

Linneus deſcribes the urens thus in his Species Plantarum. Leaves ovate-oblong, quite entire, ſubpetioled, the ſurface, eſpecially underneath, having ſtiff ſtinging double briſtles ſcattered over it. Stipules on each ſide two. Flowers axillary, on each ſide four, on one-flowered peduncles, which have a joint.]

Mr. Miller deſcribes his urens as having a ſtem from fifteen to eighteen feet high, dividing into many pretty ſtrong branches, which are furrowed, and covered with a brown bark: the leaves are from three to four inches long, and one inch broad at the baſe, where they are rounded in form of a heart, leſſening gradually to a point; covered on the under ſide with ſtinging briſtles, which when faſtened into the fleſh are difficult to get out again. The flowers are produced in umbels from the ſide of the branches; they are of a light purple colour. He had the ſeeds from Jamaica, by Houſtoun, [and therefore muſt have cultivated it before 1733.]

7. This riſes with a ſhrubby ſtalk ſeven or eight feet high, covered with a bright purpliſh bark which is ſpotted and furrowed, dividing towards the top into ſeveral ſmaller branches. Leaves numerous, about two inches long, and a quarter of an inch broad, acuminate, of a lucid green on their upper ſide, but of a ruſſet brown on their under, where they are cloſely armed with ſtinging briſtles. Flowers from the ſide and at the end of the branches in ſmall umbels, ſmall,

[a] Jacq. [b] Linn. mant. [c] Sloane.
[d] Mill. fig. [e] Browne. [f] Hort. kew.
[g] Swartz. [h] Hort. kew. [i] Swartz.
[k] Mill. fig. [l] Browne [m] Mill. fig.

and of a pale purple colour. Fruit ſmall, oval, furrowed, dark purple when ripe.

[Native of the Weſt Indies; Jacquin ſaw it flowering in june in the iſland of St. Martin.] Mr. Miller had it from the iſland of Barbuda. [He cultivated it in 1752[a].

8. This is a tree, with the leaves a hand in length, thick, ſubpetioled, quite entire, pubeſcent above, tomentoſe underneath, commonly alternate. Racemes long, tomentoſe[b].

Browne calls it the larger Locus-berry tree, and ſays that the upper branches terminate in looſe bunches of flowers, each of the diviſions being ſimple, as well as the top of the main ſupporter, which terminates alſo in a ſingle ſpike. The glands of the calyx are remarkably diſtinct in this ſpecies, which ſeems to have all the habit and appearance of Cominia.

Native of the Weſt India iſlands and Guiana.

9. This tree riſes frequently to the height of thirty or forty feet or more. The leaves while young, are covered on both ſides with down, but this falls off gradually, and they appear pretty ſmooth and ſhining after a ſhort time. There is a remarkable ſtipula at the axil of every leaf, which, with its oppoſite, ſeems to embrace the ſtalk. Two of the ſeeds are generally abortive in the berry.

Native of Jamaica, where it is common in the lower hills of Liguanea[b]. Browne calls it the Locus-berry Tree.

10. Native of the Weſt Indies. Cultivated before 1742, by Robert James Lord Petre[a].

Is this the *incana* of Miller, n. 7? He deſcribes it as ariſing with a ſtrong woody ſtalk eighteen or twenty feet high, dividing into many branches, covered with a brown ſpotted bark. Leaves lanceolate, hoary on their under ſide. Flowers in axillary umbels, of a roſe-colour. Fruit oval, channelled. He had it from Mr. Robert Millar, who found it at Campeachy.

[11. Leaves ending in the petioles, a foot long, villoſe, clothed underneath with a very cloſe nap. Racemes long, villoſe.—Native of South America[c].

Sloane's figure, referred to here by Linneus, is Clethra tinifolia of Swartz; the deſcription perhaps may belong to Malpighia craſſifolia[d].]

12. This riſes with a ſhrubby ſtalk to the height of ſeven or eight feet, ſending out branches the whole length, which are covered with a gray bark. Leaves narrow, prickly like thoſe of Holly, and having many ſtinging briſtles on their under ſide. The flowers are produced in ſmall cluſters from the ſide of the branches, ſmall and of a pale bluſh-colour. The fruit is more pointed than the common ſort, and turns to a dark purple colour when ripe.—Dr. Houſtoun found it in plenty in the iſland of Cuba.

[The above is what Miller names M. lucida, the deſcription of which, according to Reichard, belongs to Linneus's M. aquifolia.]

Miller deſcribes M. ilicifolia as having a ſtrong woody ſtem from fifteen to twenty feet high, dividing into many ſpreading branches, covered with a gray bark. Leaves oblong-ovate, of a firm conſiſtence, about an inch long, and half an inch broad, rounded at their ends, of a lucid green. The flowers come out from the ſide, and alſo at the end of the branches, upon pretty long peduncles, which branch in form of a raceme or long bunch. They vary in colour, ſome being of a bright red, others orange in the ſame bunch. Berries ſmall, oval, leſs furrowed, when ripe dark purple. Sent from the iſland of Barbuda.

13. This is a very low ſhrub, ſeldom riſing more than two or three feet high. Stalk thick and woody, as are alſo the branches, which come out on every ſide from the root upwards, and are covered with a rough gray bark. Leaves lucid, half an inch long, and almoſt as much broad, appearing as if cut at their ends, where they are hollowed in, and the two corners riſe like horns, ending in a ſharp thorn, as do alſo the indentures on the ſides. The flowers come out from the ſide of the branches, upon peduncles an inch long, each ſuſtaining one ſmall pale-bluſh flower. Fruit ſmall, conical, furrowed, changing to a purple red colour when ripe.

The fruit of ſeveral of the ſorts are gathered promiſcuouſly and eaten in the Weſt Indies; but the firſt ſort is cultivated for the fruit, which is but indifferent, and much inferior to our European Cherries; having however a pleaſant flavour, it is agreeable to the inhabitants of hot climates.

There are many other ſpecies, not yet ſufficiently aſcertained. [I have added five from Jacquin.

14. This ſmall tree agrees ſo perfectly in habit with M. glabra, that it is diſtinguiſhed from it only by the briſtles on the leaves, and the leſs pleaſant flavour of the fruit; and therefore is diſtinct from M. urens, in the leaves only. This however is by much the moſt prurient of all the prurient ſpecies. All the ſorts of Malpighia have eatable fruits, but glabra and urens only are in common uſe. The latter is inſipid, and eaten only raw by children and ſavages: the former is much eaten boiled with ſugar, but is generally neglected raw. Jacquin however, and two companions, being very thirſty with travelling in the heat in Martinico, took a large quantity of theſe berries without ſuffering from them in any degree.

15. This is an upright ſhrub, eight feet high. Leaves quite entire. Racemes ſimple, two inches long, on two-leaved branchlets. Flowers yellow. Berries red.—Near Carthagena.

16. This alſo is an upright ſhrub, eight feet high. Leaves blunt, quite entire, three inches long. Racemes oppoſite. Flowers ſweet, ſmelling like thoſe of yellow Lupine: petals yellow. Stigma ſometimes trifid, with a three-grooved fruit, containing three ſeeds, convex on one ſide and angular on the other. Berries orange coloured.

Jacquin having examined all the Linnean ſpecies, except craſſifolia, remarks, that the calycine glands are either all free, or ſome coaleſcent in different numbers; that ſome have only one, others three ſtyles, in the latter the ſtigmas being always ſimple, in the former bifid or trifid, with the ſame number of ſeeds, that the berry in a few is ſubtrilobate, but in moſt grooved, containing ſeeds that are either wrinkled or ſmooth.—This ſort grows near Carthagena.

17. This is a ſmall tree, ten feet high, upright and having a handſome head. Leaves quite entire, a foot long. Petals yellow.—Native of Martinico.

18. This is a tree of thirty feet in height and more, with an upright trunk, and a pyramidal elegant head. Leaves broad-lanceolate, three or four inches long, ſharp, petioled. Flowers yellow, ſweet, in long racemes, not unlike thoſe of the Horſe Cheſtnut. Berries yellow, ſoft, ſtarred on both ſides, ſmaller than a Cherry, acid but not pleaſant, and therefore left chiefly to birds. The wood is white. By the natives called *Bois tan*; the bark being fit for tanning leather.—Common in Martinico[e].]

PROPAGATION AND CULTURE.

Theſe plants are preſerved in the gardens of thoſe perſons who are ſo curious in botanical ſtudies, as to erect hot-houſes for maintaining foreign plants: and where there are ſuch conveniencies, theſe plants deſerve a place; becauſe they retain their leaves all the year, and commonly continue flowering from december to the end of march, when they make a fine appearance at a ſeaſon, when there is a ſcarcity of other flowers, and many times they produce ripe fruit here. Thoſe ſorts whoſe leaves are armed with ſtinging briſtles, like the Cowitch, are the leaſt worthy of a place in ſtoves, becauſe they are ſo troubleſome to handle, nor do their flowers make ſo good an appearance as many of the other ſorts. The thirteenth ſort is the moſt valuable for its flowers, which are produced in larger bunches than thoſe of any of the other, and there being flowers of different colours in the ſame bunches, they make a fine variety; and this ſort grows more like a tree than the others, the leaves are alſo of a ſtronger conſiſtence and of a lucid green.

[a] Hort. kew. [b] Linn. ſpec. [c] Browne. [d] Hort. kew. [e] Linn. ſpec. [f] Swartz obſ. 182.

[a] Jacquin. amer. p. 2.

As these plants are natives of the warmeſt parts of America, they will not live through the winter in England, unleſs they are preſerved in a warm ſtove; but when the plants have obtained ſtrength, they may be expoſed in the open air in a warm ſituation, from the middle or latter end of June, till the beginning of October, provided the weather continues ſo long mild; and the plants ſo treated, will flower much better than thoſe which are conſtantly kept in a ſtove.

They are all propagated by ſeeds, which muſt be ſown upon a good hot-bed in the ſpring, and when the plants are fit to tranſplant, they muſt be each put into a ſeparate ſmall pot filled with rich earth, and plunged into a hot-bed of tanners bark, and muſt be treated in the ſame manner as has been directed for other tender plants of the ſame country; and for the two firſt winters, it will be proper to keep them in the bark-bed in the ſtove; but afterwards they may be placed upon ſtands in the dry ſtove in winter, where they may be kept in a temperate warmth, in which they will thrive much better than in a greater heat; theſe muſt be watered two or three times a week, when they are placed in the dry ſtove, but it muſt not be given to them in large quantities.

MALVA. (*Malva, quod abunde molliat. In Greek* Μαλαχη, *for the ſame reaſon.*)

Lin. gen. n. 841. Reich. n. 906. Schreb. n. 1134. Gærtn. t. 136. Comm. diſſ. 2. 58. Tournef. t. 24. Juſſ. 272.

Alcea. *Tournef. t. 24.* Abutilon. *Dill. elth. t. 4.*

Claſſ. 16. 6. Monadelphia Polyandria.

Nat. order of *Columniferæ*, *Malvaceæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* double. *Outer* three-leaved, narrower: *leaflets* cordate, acute, permanent. *Inner* one-leaved, half-five-cleft, larger, broader, permanent.

Cor. *Petals* five, obcordate, truncate, flat, fixed to the tube of the ſtamens at the baſe.

Stam. *Filaments* numerous, united below into a tube, ſeeding and looſe at the top and ſurface of it. *Antheræ* kidney-form.

Pist. Germ orbicular. *Style* cylindric, ſhort. *Stigmas* very many, briſtly, the length of the ſtyle.

Per. *Capſule* roundiſh, compoſed of very many cells, (as many as there are ſtigmas,) two-valved, placed in a whorl about a columnar receptacle, finally falling.

Seeds ſolitary, very ſeldom two or three, kidney-form.

Obs. Malva of Tourn. *has leaves almoſt entire, not villoſe.*

Alcea of Tourn. *has many-cleft leaves, not villoſe. Some ſpecies have the outer calyx two-leaved.* S.

M. caroliniana *has the cells divided into two chambers by a tranſverſe diaphragm.* S.

ESSENTIAL CHARACTER.

Cal. double: outer three-leaved. *Caps.* many, united in a depreſſed whorl, one-celled, one-ſeeded.

SPECIES.

* *With undivided leaves.*

[1. Malva ſpicata. *Spiked Mallow.*

Lin. ſpec. 967. Reich. 3. 343. amœn. 5. 401. Brown. jam. 282. 5.

Alcea ſpicata. *Sloan. cat. jam. 97. hiſt. 1. 219.*

Leaves cordate crenate tomentoſe, ſpikes oblong rough-haired.

2. Malva tomentoſa. *Downy-leaved Mallow.*

Lin. ſpec. 967. Reich. 3. 343. fl. zeyl. n. 255. hort. diſſ. 347. Lour. cochinch. 422. Pluk. amalth. t. 356. f. 1. (Alcæa).

Leaves cordate crenate tomentoſe, flowers lateral ſtoped, ſtem ſhrubby.

3. Malva parviflora.

Lin. ſpec. 967. Reich. 3. 343. Pluk. phyt. t. 74. f. 6.

Leaves cordate obtuſe rugged, flowers ſeſſile glomerate, awls ten awnleſs crenulate.

4. Malva octomandeliana.

Lin. ſpec. 967. Reich. 3. 344. hort. cliff. 346. upſ. 201. Swartz obſ. 262. Pluk. mant. 10. (Alcæa).

Leaves oblong or cordate ſerrate, peduncles axillary, flowers glomerate, awls three-cuſped.

5. Malva ſcoparia. *Small yellow-flowered upright Mallow. L'Herit. ſtirp. nov. 53. t. 27. Cavan. diſſ. 2. 65. t. 21. f. 4. Ait. hort. kew. 2. 447.*

Leaves ovate crenate-ſerrate, flowers axillary cluſtered, ſtems ſhrubby, branches rod-like.

6. Malva anguſtifolia. *Narrow-leaved Mallow.*

Cavan. diſſ. 2. 64. t. 20. f. 3. hiſp. 48. n. 74. t. 68. Ait. hort. kew. 2. 447.

Leaves lanceolate, flowers axillary in pairs, peduncles ſhorter than the petiole, outer calyx briſtle-ſhaped deciduous.]

7. Malva americana. *American Mallow.*

Lin. ſpec. 968. ſyſt. 624. Reich. 3. 344. Willich obſ. 53.

Leaves cordate crenate, lateral flowers ſolitary, terminating flowers in ſpikes.

** *With angular leaves.*

8. Malva peruviana. *Peruvian Mallow.*

Lin. ſpec. 968. ſyſt. 625. Reich. 3. 344. Jacqu. hort. 2. 73. t. 156. Willich illuſtr. n. 24. Knipb. cent. 7. n. 52.

Stem upright herbaceous, leaves palmate, ſpikes directed one way axillary, ſeeds tuberculated.

[9. Malva limenſis. *Blue-flowered Mallow.*

Lin. ſpec. 968. ſyſt. 625. Reich. 3. 345. amœn. 4. 325. Jacqu. hort. 2. 66. t. 141.

Stem upright herbaceous, leaves lobed, ſpikes directed one way axillary, ſeeds corn.]

10. Malva bryoniifolia. *Bryony-leaved Mallow.*

Lin. ſpec. 968. ſyſt. 625. Reich. 3. 345. Hall. encycl. 15.

Althæa fruteſcens, bryoniæ folio. *Boulb. pin. 316. prodr. 138.*

A. profunde ſerrato ſ. dentato folio. *Bauh. hiſt. 2. 955.*

Stem ſhrubby tomentoſe, leaves pinnate ragged, peduncles many-flowered.

[11. Malva lactea. *Panicled Mallow.*

Ait. hort. kew. 2. 448.

Stem ſhrubby, leaves acute cordate villoſe, petals obcordate ſhorter than the calyx, peduncles panicled.

12. Malva vitifolia. *Vine-leaved Mallow.*

Cavan. hiſp. 13. n. 18. t. 20.

Stem upright branched, leaves five-lobed crenate villoſe, axills many-flowered.

13. Malva umbellata. *Umbelled Mallow.*

Cavan. hiſp. 64. n. 104. t. 95.

Stem ſhrubby, leaves cordate five-lobed, flowers umbelled.]

14. Malva capenſis. *Gooſeberry-leaved* or *Cape Mallow.*

Lin. ſpec. 968. ſyſt. 625. Reich. 3. 345. hort. cliff. 347. upſ. 201. Gærtn. fruct. 2. 255. Knipb. cent. 6. n. 59.

α. M. cap. fruteſcens, groſſulariæ folio minori glabro. *Dill. elth. 208. t. 169. f. 206.*

β. M. cap. frut. groſſ. fol. majore hirſuto. *Dill. elth. 209. t. 169. f. 207. Gærtn. 256. β.*

γ. M. ſcabroſa. *Lin. amœn. 4. 325. Gærtn. fruct. 2. 256. Knipb. cent. 6. n. 58.*

M. africana fruteſcens flore rubro. *Comm. hort. 2. 171. t. 86. Pluk. amalth. t. 431. f. 5.*

Leaves cordate five-lobed, ſtem arboreſcent.

[15. Malva virgata.

Lin. ſyſt. 625. Murr. in comm. gott. 1779. p. 20. t. 6.

Leaves narrowed at the baſe multiform parted, diviſions gaſh-crenate, peduncles one-flowered, ſtem fruteſcent.

16. Malva baliſmica.

Lin. ſyſt. 625. Jacqu. miſc. 2. 321. icon. rar. t. 10.

Leaves ſubcordate ſublobate unequally ſerrate glutinous, ſtem ſhrubby.

17. Malva Abutiloides.

Lin. ſyſt. 625. ſuppl. 307. v. Retz. obſ. 4. 21. & 5. 5.

Leaves deeply lobed and finuated, ſtem ſhrubby hoary.]

18. Malva caroliniana. *Creeping Mallow.*

Lin. ſpec. 969. ſyſt. 625. Reich. 3. 346. hort. cliff. 347. upſ. 201. Willich obſ. n. 55.

Abutilon repens, Alceæ folio, flore helvolo. *Dill. elth. 5. t. 4. f. 4.*

A. carolinianum repens, Alceæ fol., gilvo flore. *Mart. cent. 1.* 34.

A. car. reptans, Alceæ fol. gilvo flore. *Philof. transf. Mill. dict. n.* 3.

Stem creeping, leaves multifid.

[19. Malva parviflora.

Lin. fpec. 969. *fyft.* 625. *Reich.* 3. 346. *amœn.* 3. 416. *Jacqu. hort. 1.* 39.

M. annua rotundifolia, flor. omnium minimis albis pentapetalis verticillatim geniculà ambientibus. *Mor. hift.* 2. 521. *Raii hift.* 598.

M. tinctoria, flore cæruleo, parva. *Plak. phyt. t.* 44. *f.* 2.

Stem fpreading, flowers axillary feffile glomerate, calyxes fmooth fpreading.

20. Malva nicæenfis.

Allion. pedem. n. 1416. *Vahl fymb. 1.* 50.

M. montana. *Forfk. defcr.* 124.

Stem decumbent, calyxes glomerate, both hairy, leaves five-lobed.

21. Malva pufilla.

Engl. bot. 241. *Wither. arr. ed.* 3. 612.

M. parviflora. *Hudf. angl.* 307.

M. minor flore parvo cæruleo. *Raii fyn.* 251.

Stem declining, leaves roundifh-heart-fhaped flightly five-lobed, flowers peduncled, generally in pairs, petals the length of the calyx.]

22. Malva rotundifolia. *Round-leaved* or *dwarf Mallow.*

Lin. fpec. 969. *fyft.* 623. *Reich.* 3. 346. *hort. cliff.* 347. *fl. fuec. n.* 626. *mat. med.* 166. *Hudf. angl.* 307. *Wither. arr. ed.* 3. 612. *Curt. lond.* 3. 43. 157. *Lightf. fcot.* 374. *Relh. cant. n.* 508. *Gron. virg.* 79. *Hall. helv. n.* 1070. *Crantz. auftr.* 143. *Scop. carn. n.* 858. *Neck. gallob.* 294. *Pollich pal. n.* 658. *Fl. dan. t.* 721. *Allion. pedem. n.* 1414. *Villars dauph.* 3. 382. *Krock. filef. n.* 1128.

M. fylveftris, fol. fubrotundo. *Bauh. pin.* 314. *Mor. hift. f.* 5. *t.* 17. *f.* 7.

M. fylv. minor. *Park. theat.* 299. *f.* 1. *Raii hift.* 599. *fyn.* 250.

M. fylv. pumila. *Fuchf. hift.* 508. *Ger.* 785. 2. *emac.* 930. 2.

M. vulgaris flore minore, fol. rotundo. *Bauh. hift.* 2. 549. 2.

Stem proftrate, leaves cordate-orbiculate obfoletely five-lobed, fruiting peduncles declining.

[23. Malva fherardiana.

Lin. fpec. 1674. *fyft.* 625. *Jacqu. hort.* 2. *t.* 142.

M. cretica minor hirfuta. *Bauh. cent. app.* 46. *f.* 32.

Stems proftrate, leaves orbicular plaited tomentofe crenate, peduncles folitary one-flowered hoary.]

24. Malva fylveftris. *Common Mallow.*

Lin. fpec. 969. *Reich.* 3. 347. *hort. cliff.* 347. *fl. fuec. n.* 627. *Gærtn. fruct.* 2. 255. *Woodv. med. bot.* 148. *t.* 54. *Hudf. angl.* 307. *Wither. arr. ed.* 3. 613. *Curt. lond.* 2. 51. *Lightf. fcot.* 375. *Relh. cant. n.* 507. *Hall. helv. n.* 1069. *Scop. carn. n.* 859. *Pollich pal. n.* 659. *Crantz. auftr.* 143. *Neck. gallob.* 294. *Allion. pedem. n.* 1417. *Villars dauph.* 3. 382. *Krock. filef. n.* 1129. *Blackw. t.* 22.

M. fylveftris. *Ger.* 785. 1. *emac.* 930. 1.—fol. finuato. *Bauh. pin.* 314. *Mor. hift. f.* 5. *t.* 17. *f.* 8.—rectæ. *Cord. hift.* 114.—minor. *Park. theat.* 299. *Raii hift.* 599. *fyn.* 307.

M. vulgaris flore minore, fol. rotundo. *Bauh. hift.* 949. 1.

Stem upright herbaceous, leaves five-lobed acute, peduncles and petioles hairy.

25. Malva orientalis, *Oriental Mallow.*

Mill. dict. n. 3.

M. orient. erectior, flore magno fuave rubente. *Tournef. cor.* 3.

Stem upright herbaceous, leaves lobed blunt crenate.

[26. Malva mauritiana. *Ivy-leaved Mallow.*

Lin. fpec. 970. *Reich.* 3. 347. *hort. upf.* 200. *Krock. filef. n.* 1131. *Thunb. jap.* 271.

M. hederaceo folio. *Bauh. pin.* 315.

M. major tertia. *Dalech. hift.* 586. *Knaph. cent.* 7. *n.* 52.

β. M. folio ficus altera. *Bauh. pin.* 315. *prodr.* 137.

Stem upright herbaceous, leaves five-lobed blunt, peduncles and petioles fmoothifh.

27. Malva fragrans.

Lin. fyft. 626. *Jacqu. hort.* 3. *t.* 58.

Stem upright fruticofcent, leaves roundifh-cordate, half five-lobed.

28. Malva hifpanica.

Lin. fpec. 970. *Reich.* 3. 348. *Lœfl. it.* 157. *Plak. phyt. t.* 44. *f.* 3.

Stem upright, leaves fomewhat orbiculate crenate, outer calyx two-leaved.]

29. Malva verticillata. *Whorl-flowered Mallow.*

Lin. fpec. 970. *fyft.* 626. *Reich.* 3. 348. *cor. cliff.* 356. *hort. cliff.* 302. *upf.* 200. *Gærtn. fruct.* 2. 255. *Jacqu. hort. t.* 40. *Laur. cochinch.* 422. *Burm. ind.* 149. *Wither. arr. ed.* 2. 739.

M. finenfis erecta, flofculis albis minimis. *Boerh. lugdb.* 268.

M. annua rotundifolia, &c. *Mor. hift.* 2. 521. *Raii hift.* 598.

Stem upright, leaves angular, flowers axillary glomerate feffile, calyxes rugged.

30. Malva crifpa. *Curled Mallow.*

Lin. fpec. 970. *Reich.* 3. 348. *hort. cliff.* 347. *upf.* 200. *Lœrs herborn. n.* 545. *Krock. filef. n.* 1133.

M. foliis crifpis. *Bauh. pin.* 315.

M. crifpa. *Dod. pempt.* 653. *Bauh. hift.* 2. 952. *Ger.* 785. 3. *emac.* 931. 3. *Park. parad.* 495. *Raii hift.* 597.

Stem upright, leaves angular curled, flowers axillary glomerate.

31. Malva Alcea. *Vervain Mallow.*

Lin. fpec. 971. *fyft.* 626. *Reich.* 3. 348. *hort. cliff.* 347. *fl. fuec. n.* 628. *Gærtn. fruct.* 2. 254. *Hall. helv. n.* 1071. *Scop. carn. n.* 860. *Pollich pal. n.* 660. *Neck. gallob.* 293. *Allion. pedem. n.* 1418. *Krock. filef. n.* 1130. *Villars dauph.* 3. 383. *Knaph. cent.* 3. *n.* 50. *Sauv. hort. 1. t.* 48.

Alcea, *Cæner. epit.* 664. *Blackw. t.* 309.—vulgaris. *Bauh. hift.* 2. 953. *Clus. hift.* 2. 25. *Raii hift.* 604. *fyn.* 250.—major. *Bauh. pin.* 316.

Stem upright, leaves many-parted fomewhat rugged.

32. Malva mofchata. *Mufk Mallow.*

Lin. fpec. 971. *fyft.* 626. *Reich.* 3. 349. *hort. upf.* 202. *fl. fuec. n.* 629. *Gærtn. fruct.* 2. 256. *Hudf. angl.* 308. *Wither. arr. ed.* 3. 613. *Curt. lond.* 4. 50. 228. *Lightf. fcot.* 376. *Relh. cant. n.* 509. *Hall. helv. n.* 1072. *Scop. carn. n.* 861. *Pollich pal. n.* 661. *Lœrs herborn. n.* 547. *Allion. pedem. n.* 1419. *Villars dauph.* 3. 383. *Krock. filef. n.* 1132. *Mill. fig. t.* 17. *Fl. dan. t.* 905.

M. montana f. Alcea rotundifolia laciniata. *Col. ecphr.* 1. 148. *t.* 147.

M. verbenaca. *Ger.* 785. 4. *emac.* 931. 4.

Alcea folio rotundo laciniato. *Bauh. pin.* 316. *Raii hift.* 605. *Mor. hift. f.* 5. *t.* 18. *f.* 4.—vulg. f. M. verbenacea. *Park. theat.* 301.

β. A. vulgaris minor. *Bauh. pin.* 316.

A. tenuifolia crifpa. *Bauh. hift.* 2. *app.* 1067. 1. *Raii fyn.* 253.

Stem upright, root-leaves kidney-form gafhed, ftem-leaves five-parted pinnate-multifid.

33. Malva tournefortiana.

Lin. fpec. 971. *fyft.* 626. *Reich.* 3. 349. *amœn.* 4. 283. *Ger. prov.* 477.

M. maritima gallobrovincialis, geranii folio. *Tournef. inft.* 98.

Alcea minor maritima tenuifolia procumbens. *Herm. par.* 1. 9. *Plak. phyt. t.* 44. *f.* 4.

Stem decumbent, root-leaves five-parted three-lobed linear, peduncles longer than the ftem-leaf.

34. Malva ægyptia, *Palmated Mallow.*

Lin. fpec. 971. *fyft.* 626. *Reich.* 3. 350. *Jacqu. hort. t.* 27. *t.* 65.

Alcea ægyptia, geranii folio. *Lipp. ægypt. mfs.*

Stem upright, leaves palmate toothed, corollas fmaller than the calyx.

DESCRIPTIONS, &c.

1. Stem pale green, two or three feet high, branched. Leaves almoft round, an inch and quarter long, and three quarters of an inch broad at the bafe, pale green, fmooth, on petioles three quarters of an inch in

in length. The tops of the twigs and branches, for the length of an inch, are thick set in a ſpike with orange-coloured flowers, in very hirſute calyxes.

Native of Jamaica, in cleared, barren, rocky lands[1]. Cultivated by Mr. Miller in 1726. It flowers in ſeptember and october[2].

2. Stem ſhrubby, tomentoſe, or hiſpid, two feet high, upright, round, little-branched. Leaves ovate, ſubacute, ſubcordate, curled. Outer calyx three-leaved, inner five-toothed. Petals ſhort. Stamens five. Styles many. Beaks of the ſeeds, when the flower is fallen, very ſhort, forming the angles of a retuſe fruit[3].

Native of the Eaſt Indies and Cochinchina.

3. This is ſiſter plant to M. coromandeliana, but ſtiffer. Leaves ſerrate, ſtrigoſe. Stipules linear. Flowers at the tops of the branches, yellow. Seeds in a retuſe diſk, without awns, the upper margin crenulated with minute tubercles.

Native of India[4].

4. Stem a foot high, round, hiſpid. Branches leafy, round, hiſpid. Leaves alternate, oblong ſometimes cordate at the baſe, obtuſe, hiſpid. Petioles round, longer, hiſpid. Pedunicles ſolitary, upright, ſhorter than the petiole; flowers terminating, in a ſort of ſpike, ſeſſile, yellow. Leaflets of the outer calyx linear. Styles ten to ſixteen. Fruit hirſute: with two cups of the anis in a pair, the third ſuperior.

Common in Jamaica, among graſs[5]. Theſe are both annual plants.

5. This is a ſhrub, a fathom in height. Stem upright, round, ſmoothiſh, very much branched. Branches alternate, almoſt upright, root-like, ſomewhat rugged, tomentoſe, twigs hoary. Leaves alternate, ſpreading or hanging down a little, ſubcordate, acute, entire at the baſe, lonſely nerved with the nerves prominent underneath, ſubtomentoſe, ſomewhat rugged, pale green, two inches and a half or three inches in length, from an inch and half to two inches and a half in breadth. Petioles ſhorter by half than the leaf, ſpreading very much, round, tomentoſe. Stipules awl-ſhaped, caducous. Flowers aggregate or ſolitary, the upper ones in a ſort of ſpike, on ſhort pedunicles, yellow marked with red ſpots on both ſides, half an inch over. Pedunicles tomentoſe, whitiſh. Calyx ſubtomentoſe; leaflets of the outer awl-ſhaped, preſſed cloſe; inner bell-ſhaped, longer; ſegments lanceolate, acute, ſpreading. Germ pubeſcent. Arils or capſules from ten to twelve, obſoletely kidney-form, acuminate, two-horned, ſcarcely opening inwards, pubeſcent, aſh-coloured. Seeds brown.

Native of Peru, about Lima; where it was found by Dombey, and ſent to the Paris garden. It flowers in its native ſoil in july and auguſt. Though ſhrubby, it ſeldom comes to a ſecond year, but perfects ſeeds here, and readily grows from them. The Spaniards in America call it *Eſcoba zimarrona*, or wild Broom; the inhabitants making common brooms of the branches[6].

Introduced in 1782, by Monſ Thouin. It flowers in auguſt and ſeptember[7].

6. Stem ſubfruticoſe, round, branched, three feet high, covered with numerous ſtellate hairs, ſo ſmall and cloſe that this and the whole plant appear mealy. Leaves alternate, ſeveral times longer than the petioles, crenate, the lower ones often four inches long, and an inch wide; the upper ones ſhorter and narrower. Stipules briſtle-ſhaped. Flowers numerous and as it were glomerate, with ſeveral ſhort, one or two-flowered pedunicles; on the top of the ſtem and branchlets not ſo numerous, but at length in pairs and then ſolitary. The outer calyx conſiſts of three very ſmall briſtles: the inner is half-five-cleft. Corolla pale violet; petals ſpreading, emarginate. Tube of the ſtaments ſhort, hairy at the baſe, ſurrounding the germ, reſembling the tube of Sida. Anthers violet. Fruit ſpherical, umbilicate, tomentoſe. Capſules awn-leſs, three-ſeeded. Seeds black, ſmooth.

Native of Mexico[8]. Introduced in 1780, by Benjamin Bewick, Eſq. It flowers in auguſt[9].

[1] Sloane. [2] Hort. kew. [3] Linn. ſpec. and Loureiro. [4] Linn. ſpec. [5] Swartz. [6] L'Heritier. [7] Hort. kew. [8] Cavanilles. [9] Hort. kew.

7. Root annual. Stem a foot high, ſtiff, round, ſomewhat hairy: branches few, ſhort, upright, from the lower axils. Leaves ſcarcely tomentoſe. Pedunicles axillary, upright, ſolitary, one-flowered. Spike terminating, with many ſeſſile flowers, expanding after noon. Corolla yellow. Outer calyx linear, ſpreading, the length of the inner; which is urceolate at the baſe. Styles ten, longer than the ſtamens[1].

Native of North America. Cultivated in 1759, by Mr. Miller. It flowers in june and july[2].

8. This alſo is an annual plant. Stem from two to three feet high, with hairs thinly ſcattered over it, uſually in pairs. Leaves ſeven-lobed, plaited, ſmooth, veined, ſharply ſerrate; on petioles the length of the leaf. Stipules ovate-lanceolate. Pedunicles long, naked. Spike directed to one ſide, turned upwards, recurved before the flowers open. Corollas ſmall, purple. Seeds ten, roughened above with many alternate teeth[3].

According to Jacquin, the leaves are five or three-lobed; and the flowers red.] Miller ſays, that the leaves are broad, hairy and three-lobed; the flowers ſmall, pale blue, and ſet very cloſely on the ſpikes, appearing in june. It grows naturally in Peru, whence the ſeeds were ſent to the Royal garden at Paris by Monſ. Joſeph de Juſſieu. [It was cultivated by Mr. Miller in 1759[4].

9. This is ſiſter to M. peruviana, but the flowers are blue, not purple[5]. According to Jacquin, the leaves are ſeven-lobed.

Native of Peru, about Lima. It is an annual plant, and flowers in july. Introduced in 1768, by Monſ. Richard[6].

10. This plant is handſomely echinated on the diſk of the leaf, and is a native of Spain[7].] Mr. Miller deſcribes it as having a ſhrubby woolly ſtalk, four or five feet high, ſending out branches on every ſide, with woolly, rough leaves. Pedunicles axillary, ſupporting four or five flowers, bright purple, ſhaped like thoſe of the common Mallow: they appear in july, and the ſeeds ripen in autumn. It ſeldom continues more than two or three years.

[In the Kew catalogue it is ſaid to be a native of the Cape of Good Hope, and to have been introduced by Maſſon in 1774.

11. This was introduced in 1780, by Benjamin Bewick, Eſq. is ſhrubby, and flowers in january and february. Its native place is unknown[8].

12. Stem a fathom in height, round; the tender branches tomentoſe, but becoming ſmooth by age. Leaves alternate, longer than the tomentoſe petioles, the lower lobes ſhorter, the middle longer. Stipules lanceolate, reflex. Flowers axillary, ſomewhat branched; branchlets ſhort. Outer calyx of three, ſometimes two briſtles, one of which is inferior: inner calyx five-cornered, with prominent angles, half-five-parted; divitions ovate-acute. Corolla white, a little larger than the calyx; petals orbiculate, with very narrow claws. Tube of the ſtamens very ſhort: anthers whitiſh. Style divided into twelve or fourteen whitiſh ſegments.

Found near Mexico. It flowers in the Royal garden at Madrid in december.

13. Stem ſhrubby, round, two feet high, tomentoſe eſpecially when tender. Leaves alternate, nearly equal to the petioles, the breadth almoſt equal to the length, the middle lobe more produced, crenate, ſubtomentoſe underneath, the nerves and petiole very tomentoſe. Stipules lanceolate, ſhrivelling. Umbels five-flowered or thereabouts: common pedunicle axillary, ſolitary, erect, elongated, having a few ovate ſhrivelling ſcales on it: rays about an inch long, thick. Outer calyx of three, ſometimes four orbicular concave leaflets, dark purple, falling off before the corolla: inner globular at the baſe, five-cornered above, half-five-cleft; diviſions acute, tomentoſe. Corolla bell-ſhaped, twice as large as the calyx, very deeply divided into five rounded ſtriated ſegments of a fiery-violet colour,

[1] Linn. ſpec. [2] Hort. kew. [3] Linn. ſpec. [4] Hort. kew. [5] Linn. ſpec. [6] Hort. kew. [7] Linn. ſpec. [8] Hort. kew.

with the base by which they are united white. Tube of the stamens whitish, a little shorter than the corolla, thick, upright. Germ superior, tomentose, of an oblate spheroidal form, with as many grooves as there are stigmas. Style purple-rose coloured, hollow, entire at the base, dividing into from fifty to sixty threads. Fruit globular, umbilicated. Seeds three in a capsule. It differs from its congeners in the outer calyx being deciduous. In the manner of flowering it approaches to Dombeya; in fruit to Sida. It is therefore between Malva and Sida.

Native of Mexico: flowering from january to march at Madrid [1].]

14. This rises with a woody stalk ten or twelve feet high, sending out branches from the side the whole length: the stalks and branches are closely covered with hairs. Leaves hairy, indented on their sides, so as to have the appearance of a trilobate leaf: these on the young plants are three inches long and two broad at their base; but as the plants grow older, they are scarcely half that size. The flowers come out from the side of the branches, upon peduncles an inch long; they are of a deep red colour, shaped like those of the common Mallow, but smaller. It flowers great part of the year.

[Dillenius, who distinguishes the three varieties here given, as species, describes the first, as having the stem from eighteen inches to three feet in height, and higher, when more advanced, not much branched: the stems round and woody, not very thick, scarcely so large as the little finger, the bark ash-coloured below, bay at top; the ends of the twigs green. Leaves not unlike those of the Gooseberry, with several smaller ones from the same point, smooth, paler underneath. Peduncles axillary, solitary, slender, perpendicular to the stem. Calyx smooth; outer usually three-leaved; inner divided almost to the base into five broadish segments. Capsules hirsute: twelve in a whorl, muticate with four tubercles arched upwards and spreading on each side at the back, of a brown bay colour, they are broader than they are high, compressed and coriaceous. Seed rounded-beaked, less-shaped, smooth, bay-coloured [2].

Native of the Cape of Good Hope. The first mention of this shrub is by Peines in hort. bof. 1705 and 1713. In 1713 it was cultivated in the botanic garden at Chelsea [3]. Dillenius was the first who described and figured it [4].

β. This has thicker, higher stems, of a brownish red colour. Leaves hirsute, broader, with wider segments less deeply cut, but with the toothlets sharper and serrate. The outer calyx has somewhat larger segments; the inner is subhirsute. Peduncles jointed, and bent a little downwards; whereas in the preceding they are short and not jointed [5].

The whorls of fruit are a little larger than in the preceding, and not muricated. Capsules compressed, horizontally oblong, with waved wrinkles running from the centre towards the circumference, of a dirty black colour [6].

γ. The rugged Cape Mallow differs from the others in having the hairs of the leaves and stem simple not compound; the flowers almost upright not drooping [7].

It is a lottier and stouter plant, with larger flowers, having deeper and darker spots on the petals, the calyxes more hirsute, with the outer leaflets larger, and the peduncles shorter, without any joint; the leaves also are thicker, more wrinkled, softer, broader, less gashed, not so like those of the Gooseberry, with the toothlets less sharp [8].

The fruit has twelve capsules in a whorl, rounded-kidney-form, somewhat compressed, brittle, black: back rounded, rugged, but neither tubercled nor muricate: sides flat, obsoletely striated. Seed kidney-form, with a depressed streak on the back, bay-coloured. The embryo in this is white; in the two others green [9].

Gærtner can scarce think this a variety of M. capensis. On the contrary Miller, who is very apt to advance varieties into species, says that] the leaves of this appear very different from either of the other, being deeply divided into three lobes, which are also deeply indented, so that any person would suppose it to be a different species; but this he has frequently raised them all, with other intermediate varieties, from the seeds of one plant.

[15. Trunk very small, branching almost immediately from the root: branches six feet and a half long, about the thickness of a wheat straw at the base, rough with fasciculated hairs, dividing into smaller branches. Leaves narrow at the base, entire, oblong, cuneiform, an inch or more in length, most of them divided into three deep incisures: divisions sharply crenated, rugose and plaited, smooth above, rough below: stipules two, semilunar, spreading. Flowers axillary, in the lower branches solitary, in the upper ones bimate, peduncled, bending. Corolla purple, streaked, with deep-purple or red spots at the base.

16. This is a shrub about four feet high, upright, but so weak, that unless it is supported, half the trunk and the branches hang downwards. Trunk thicker than a quill, round, with a brown bark, rugged with scars from the fallen leaves and stipules. Younger branches villose and glutinous. Leaves acute, alternate, petioled, somewhat rugged, villose, dark green on the upper surface. Stipule on each side the petiole, ovate, acute, entire, somewhat convex. Peduncles axillary, solitary, one-flowered, villose. The three leaflets of the outer calyx are ovate, acuminate, somewhat villose: inner half-five-cleft, with divisions similar to the leaflets of the other. Petals pale rose colour, spreading very much, twice as long as the calyx, streaked with red at bottom. Column of filaments white and hirsute. Antners and stigmas purple. Anthers about twelve, black, somewhat wrinkled and ruggedl. Seeds smooth, brownish. Named from the highly balsamic smell of the plant. Jacquin had the seeds from Holland about the year 1777. The native country is unknown [4]. Probably from the Cape of Good Hope.

17. This is a shrub very much resembling M. capensis, but the whole of it, except the upper surface of the leaves is hoary or subtomentose. Leaves small, cordate, three or five-lobed, lobes gashed, the middle one more lengthened out. Flowers large, in terminating racemes. Outer calyx lanceolate. Corolla white. Fruit globular, rostrate, with from fifteen to twenty cells, closely connected, as in the Abutilon of old authors.

Native of the Cape of Good Hope [5].

Linnæus, in his Species Plantarum, p. 971. has 3 species under the name of M. abutiloides, totally different from this, which was omitted in the thirteenth edition of Systema vegetabilium, and ought to be restored [6]. It is an American plant, native of Providence in the Bahama islands; and figured by Dillenius under the name of Abutilon alcheringes, flore carneo, fructu globoso, t. 155. f. 1. It has the appearance of an Althea, is tall, and is distinguished from the other Mallows by its subglobular, striated pericarps, with many-seeded cells, not at all distinct on the outside. The stem is upright; the leaves are lobed and villose; the calyxes very short [7]. Catesby brought over the seeds, and it was cultivated in the Fulham garden in 1725, but did not flower there till july 1732 [8].

18. Root annual. Stems creeping, eighteen inches and longer, round, putting out roots at the lower joints, hairy. Leaves villose, soft, those next the root larger, roundish, pale-ferrate, smaller and more deeply divided as they ascend, five-lobed and seven-lobed, all on long hairy petioles, gashed and ferrate on the edge. Flowers axillary and terminating, on almost upright peduncles from an inch to an inch and half in length, small, the colour of Burgundy wine, the claws of a darker red. Seeds in each capsule commonly two, small, smooth, one of them commonly abortive. Capsules small, a little hairy at top, with two short horns on the outer margin, they are bind and open from the

[1] Cavanilles. [2] Gærtner. [3] Hort. kew. [4] Hort. Elth. [5] Ibid. [6] Gærtner. [7] Linn. [8] Dillenius. [9] Gærtner.

[1] Jacquin. [2] Linn. suppl. [3] Retzius. [4] Linn. spec. [5] Dill. elth.

top to the middle, but at the lower and inner part they remain entire [a].

Native of Carolina, whence the ſeeds were brought by Catesby. It was cultivated in the botanic garden at Chelſea in 1723 [b].

19. This is an annual plant, differing from M. rotundifolia in having the ſtem almoſt upright, and three times as large; the leaves more acute, with the tip of the petiole aſcending; the calyxes ſmooth, the outer linear not lanceolate; the flowers ſeſſile; the calyxes, when the fruit is ripe, purple; the awns wrinkled above and toothed on the ſides.

Native of Barbary [c].

20. Root annual. Stems decumbent, ſcarcely branched, green, ſomewhat ſtriated. Leaves on long petioles, five-lobed; lobes rounded on the lower leaves, in the reſt lanceolate, crenate, with a lanceolate ſtipule at the baſe of the petioles. Flowers axillary, commonly four, on erect naked almoſt equal peduncles, half an inch long. Calyx converging. Corolla pale red, a little larger than the calyx; petals emarginate. Stems, petioles, peduncles and calyx bearded with longiſh hairs. Leaves very finely and evenly birſute. It differs from rotundifolia in having the leaves acutely lobed not crenate, in the colour and ſize of the flower, and in the peduncles, which in rotundifolia are unequal, and ſometimes leafy. In parviflora, beſides the ſame difference of the leaves, the calyx is ſpreading and ſmooth, the flowers conglomerate in the axils not ſcattered [d]. Vahl doubts whether it be really different from M. parviflora, to which it is certainly very nearly allied.

Found by Bellardi in the county of Nice.

21. Root annual, or perhaps biennial. Chiefly diſtinguiſhable from M. rotundifolia to which it is very nearly allied, in the petals ſcarcely exceeding the calyx, and the flowers being never more than two in each axil. After all it is doubtful whether it be permanently diſtinct from the next ſpecies [e], and indeed this with the two preceding ones require farther examination, before it be finally determined whether they are ſpecies or only varieties. Hudſon took it for the parviflora of Linnæus; but being different from that, which has the leaves very angular and ſharply ſerrated, the flowers ſeſſile or nearly ſo, three or four together in axillary cluſters, it was neceſſary to give it another name.

It was firſt found by Mr. James Sherard in company with Mr. Rand, at Hithe in Kent. Mr. Hudſon remarked it in the ſame place. Dr. Withering ſays, that his ſpecimens were gathered in Pembrokeſhire. In Ray's ſynopſis it is obſerved, that it differs from the other Mallows in having the ſeeds wrinkled.

22. Root annual, whitiſh, ſtriking deep. Stems ſeveral, branched, lying cloſe to the ground, except the flowering branches, which aſcend a little, not creeping or putting out roots from the joints, from nine to twelve inches in length or more. (I have ſpecimens before me, on Sept. 16th, 1797, four feet long,) round, pubeſcent, frequently tinged with purple on one ſide. Leaves covered on both ſides with a fine down, ſomewhat rugged, roundiſh kidney-form or almoſt orbicular, cordate or hollowed at the baſe, the ſurface waved or raiſed a little at the angles between the lobes, and when the leaves, eſpecially the larger, are laid flat, ſo as to preſs out theſe wavings, hardly any interval remains between the two edges at the baſe, ſo that they then are almoſt round, allowance being made for the lobes, which are very ſhallow, five or ſeven in number, rounded, ſerrate or rather crenate on the edge, having five or ſeven ribs on the under ſide, not flat but concave upwards, or what Linnæus calls cucullate, eſpecially the younger ones; the largeſt two inches and a half or three quarters across, and an inch and a half from the petiole to the apex. There is a dark purple ſpot at the corner of the baſe or top of the petiole, which is alſo tinged with purple, roundiſh but with a ſlight channel along the upper ſide, hairy and ſlightly rugged, four or five inches in length. Stipules in pairs, lanceolate, fringed with hairs. Peduncles axillary, ſhorter than the petioles, frequently two together, but often more of different lengths, ſometimes one only, the other ſeeming to have proved abortive; they are round, pubeſcent and one-flowered. Leaves of the outer calyx linear, bluntiſh, nearly as long as the inner; which is bell-ſhaped, pubeſcent with a ſlight ruggedneſs, of a paler yellow; ſegments ovate, acute, keeled, toothletted and ſlightly waved. Corolla white with purple veins, and purple towards the top, (at leaſt it is ſo in my ſpecimens). Lightfoot ſays, white ſtreaked with red veins. Curtis, white, ſtriped with reddiſh veins. Withering, purpliſh roſe red, ſometimes paler. The veins are darker, and more inclined to red than the purple at the end, which in my ſpecimens cannot be called red, but beautiful pale lilac purple. Linnæus ſays, that about Upſala it is entirely white. The corolla is full twice as long as the calyx: petals narrow-wedge-ſhaped, very blunt and deeply emarginate at top, nearly upright and ſubſeſſile. Filaments and anthers white. Styles twelve to fourteen, purple, hairy on one ſide. Fruit three-eighths of an inch in diameter, made up of as many capſules as there are ſtigmas [f].

Native of moſt parts of Europe, on dry banks, by way ſides, under walls and other fences, flowering from june to ſeptember.

23. Peduncles in flowering time bowing, ſhorter than the leaves. Petals red, rounded with a point. Capſules more than five, in a ring, or ſcattered.

Native of Bithynia. Arduini. It is perennial [g]. I obſerve that the fruiting peduncles are frequently arched upwards in M. rotundifolia.

24. Root perennial, (or biennial, according to ſome; annual according to others,) whitiſh, the thickneſs of a finger, ſtriking deep, thinly furniſhed with large fibres, not creeping, ſweetiſh and viſcid. Stem more or leſs upright, according to circumſtances; in hedges drawing up to the height of ſeveral feet, but by foot-paths and among rubbiſh in a manner proſtrate, from one to three feet in length or more, round, inclined to be woody, hairy, branched. Leaves five-lobed, (rarely ſix or ſeven,) unequally crenate, hairy on both ſides, or only underneath, the ſurface waved and concave upwards, eſpecially the younger ones, having a dark purple ſtain at the inſertion of the petiole: root-leaves five or ſix inches in diameter, on petioles eighteen inches long; ſtem-leaves three or four inches in diameter, darker green and more deeply lobed than in M. rotundifolia. Petioles three-cornered, hairy. Stipules two at the baſe of each petiole, ovate, acuminate, ciliate. Peduncles axillary, nearly cylindrical, ſeveral together, forming a ſort of umbel, one-flowered, hairy, an inch long. Leaflets of the outer calyx lanceolate; ſegments of the inner broader; both hairy without, ſmooth within, toothed at the edges, and the teeth terminating in long hairs. Petals deeply emarginate, purple with three or four darker or red ſtreaks, varying ſometimes to white, or with more or leſs of a blueiſh caſt. Filaments and ſtyles purple or red [h]. Capſules about ten, or from ten to fifteen, rounded-kidney-form, three-ſided, ſomewhat cruſtaceous, brittle, cloſe all round, dark ſtraw-colour, excavated wrinkled on the back, ſtreaked in curves on the ſides. Seeds kidney-form, three-ſided, dotted, whitiſh, aſh-coloured [i].

Common in moſt parts of Europe, by hedges, roads, and in waſte places, flowering from june to ſeptember. In the north of England it is called *Mauls*. In French, *Mauve, la grande Mauve*. In German, *die wilde Malve*. In Dutch. *Wilde Malwe*. In Daniſh, *Den ſtore katoſt*. In Swediſh, *Kattoſt*. In Italian, *Malvone*. In Spaniſh and Portugueze, *Malva ſylveſtre*. In Ruſſian, *Proſkurat*.

Cattle do not appear to be fond of it. Every part of the plant, particularly the root, abounds with a mild mucilage. The root boiled is much uſed as an emollient cataplaſm; and an infuſion of it is generally preſcribed in all caſes wherein mild mucilaginous ſub-

[a] Dill. 16th. [b] Herb. Sow. [c] Linn. ſpec.
[d] Allion. [e] Engl. bot. [f] Curtis, Woodw. Mſs. Withet. Lightf. [g] Linn. ſyſt.
[h] Curtis, Withering. [i] Gærtner.

ſtances are uſeful; as in diſorders of the urinary paſſages, and in coughs, hoarſeneſſes, &c. The uſe of it however has been much ſuperſeded by Marſhmallow, which poſſeſſes its valuable qualities in a ſuperior degree. The leaves alſo are not unfrequently uſed in fomentations and clyſters [1]. Woodville ſays, the roots of Malva are uſeleſs, whilſt thoſe of Althæa are of more efficacy than any other part of the plant.

It is well known that *Malva* was an eſculent vegetable among the Romans. Haller however ſays it was not this, but one allied to it, named M. rotundifolia italica, flore amplo, by Tournefort. Proſper Alpinus informs us, that a tree of the Mallow kind is eaten by the Egyptians; and the Chineſe uſe ſome ſort of Mallow in their food.]

25. This is an annual plant, with an upright ſtalk. The flowers are larger than thoſe of the common ſort, and are of a ſoft red colour.

[I have a ſtalk now before me above ſix feet in height. The petioles of the leaves are not ſo long, nor ſo hairy as in the common Mallow. The leaves and the whole plant are ſmoother. The flowers are not purple, but dark red with the veins ſo dark as to be almoſt black. The inner calyx is not ſo deeply divided, and does not fold over the fruit, which conſiſts of fewer capſules. The uprightneſs of the plant, with the colour of the flowers, immediately diſtinguiſh this from the common Mallow, which in many reſpects it much reſembles.] It was diſcovered by Tournefort in the Levant, [and cultivated by Miller, in 1759.

26. This alſo reſembles the common Mallow: but this has five ribs to the leaf, that has ſeven; this has the outer calyx lanceolate, that ovate; this has the corolla more blood-red, in that it is blueiſh purple.

It is annual, and native of the South of Europe [2]. Introduced in 1768, by John Earl of Bute. It flowers in june and july [3].

27. Stem ſtraight, ſix feet high; branches axillary: leaves cordate at the baſe, about five-lobed, the middle one ſometimes longer than the reſt: they are obtuſe, footſtalked, crenulated, ſubviſcid, ſoft, and alternate. Stipules lanceolate and entire. Flowers ſingle, axillary, with long peduncles; corolla an inch in diameter, bright purple; ſometimes more obſcure: the column of the ſtamens is marked at its baſe betwixt each of the petals with a blood-red ſpeck. The whole plant breathes a ſtrong aromatic ſmell.

Native place uncertain [4].

28. Root annual. Stems diffuſed, aſcending, rough-haired. Leaves cordate-roundiſh, ſcarcely lobed, crenate. Stipules lanceolate. Peduncles ſolitary, one-flowered, longer than the leaf. Outer calyx two-leaved, the third inner leaflet being wanting: inner calyx five-cleft, with the lobes cordate or the ſinuſes prominent. Corolla fleſh-coloured.

Native of Spain [5].

29. Root annual, three feet high. Leaves cordate, five or ſeven-angled, ſubcrenate, ſmooth, on long, alternate petioles. Flowers whitiſh red, ſmall, on one-flowered peduncles.

Native of China and Cochinchina [6]. Cultivated in 1633, by Mr. James Sutherland. It flowers in june and july [7].]

30. This alſo is annual. Stem upright four or five feet high. Leaves curled on their edges. [Stem thick, round, green, hirſute below, branched, from three to four feet high. Lower leaves a hand wide, on long petioles: the upper ones ſmaller, on ſhorter petioles, the uppermoſt very ſmall, almoſt ſeſſile, all obſcurely angular, ſinuate, bright green, pubeſcent. Flowers ſeſſile in the axils over the whole ſtem and branches, ſmall in proportion to ſo large a plant, like thoſe of M. rotundifolia in ſize and colour [8].

Native of Syria, and now become a denizon of Germany and Sileſia. Cultivated in 1596, by Gerarde. It flowers from june to auguſt [9].

31. Root long, branched, perennial. Stem from two to three feet high, round, rugged, hairy; hairs in bundles, ſpreading; branches alternate. Leaves alternate, ſemiorbicular, five-parted to the baſe, with the lobes oblong, three or five-parted, bright green, whitiſh underneath, pubeſcent, ſomewhat rugged. Petioles round, with very ſmall awl-ſhaped ſtipules at the baſe. Flowers terminating, in panicles or bundles. Calyx ſmall in proportion to the ſize of the corolla, pubeſcent; outer ſmall, inner much larger. Corolla an inch and half or two inches long, five-parted to the baſe, bright purple, with blunt two-lobed ſegments. Capſules very ſmooth, firſt green then black [10], about twenty-four in number, rounded-kidney-form, papery, marked with a raiſed line along the back, one-celled, valveleſs, opening only by the dorſal ſhield ſeparating from the ſides. The receptacle or central column is engaged or many-winged from the lateral permanent laminas of the capſules. Seeds ſolitary, kidney-form, compreſſed a little, ſmooth, aſh-coloured [11].

Native of many parts of Europe, but not of Britain, as has been generally ſuppoſed. No other than M. moſchata being found in the counties of Warwick, Leiceſter, and Nottingham, as appears from the repeated obſervations of botaniſts, who have carefully ſearched for it in thoſe counties. This differs ſo entirely from M. moſchata, that it could not well have been miſtaken or overlooked. Ray mentions but one in his own edition of the Synopſis; and what Dillenius adds in the third edition, is not from his own obſervation [12].

32. Root-leaves roundiſh, kidney-ſhaped, entire, except being crenate on the margin. Firſt ſtem-leaves three-lobed, divided half way down; ſide-lobes divided again into two or three, but not ſo deeply: above theſe they are three-lobed to the foot-ſtalk: lobes again deeply divided; diviſions deeply jagged; higher ones five-lobed, lobes pinnatifid, legments of the upper ones more and more divided, and narrower; uppermoſt linear. Stem round, much branched, ſlightly hairy: at the origin of each branch two lanceolate hairy ſtipules. Flowers crowded on the top of the ſtem and branches on ſhort peduncles, and ſingle ones from the axils of the upper leaves. Petals heart-ſhaped, divided nearly to the baſe, pale red or fleſh-coloured with deeper veins [13]. Styles fourteen to eighteen [14]. Capſules about fifteen, kidney-form, compreſſed, papery, black, thickly ſet with pale villoſe hairs, eſpecially on the back. Seeds ſmooth, pale-aſh-coloured.

This differs from the preceding, with which our Engliſh botaniſts have confounded it, in having the ſtem not ſo tall, with ſolitary upright hairs riſing from a prominent little point. Arils rough with hairs. Flowers of an ambroſial or muſky ſcent [15]. The muſky ſmell however is not always to be perceived, and the circumſcription of the upper leaves being ſometimes lengthened out into a triangular form, theſe two circumſtances have probably cauſed it to be miſtaken for M. Alcea [16].

Mr. Curtis having cultivated both ſpecies together, found M. Alcea grow nearly to twice the height of this; to be in every reſpect a ſtronger plant, and harſher to the touch; the leaves of the ſtalk much leſs jagged; the corollas ſimilar, but the calyxes remarkably different, the outer leaflets in moſchata being lanceolate or ſometimes almoſt linear; in the Alcea ovate, with a large protuberant ring near the baſe.

Native of many parts of Europe. By no means uncommon in many parts of Great Britain, particularly the midland counties, in Hertfordſhire, Huntingdonſhire, Derbyſhire, and the North frequent. In Norfolk, Suffolk and Cambridgeſhire ſparingly. Cullumhearh, South Leigh, and between Witney and Burford, Oxfordſhire. Mr. Curtis mentions its growing plentifully near Coomb-wood. I have found it near Ballam in Surry, by the five mile ſtone on the Epſom road. Gerarde ſays, it groweth by the ditch ſides on the left hand of the place of execution by London, called Tyborne; near Bulhey, on the backſide of a gentleman's

[1] Curtis, Withering. [2] Linn. ſpec. [3] Hort. kew. [4] Jacquin. [5] Linn. ſpec. [6] Loureiro. [7] Hort. kew. [8] Krocker. [9] Hort. kew. [10] Pollich and Krocker. [11] Gærtner. [12] Woodw. Mſ. [13] Ibid. [14] Withering. [15] Linn. [16] Woodw. Mſs.

house named master Robert Wylbraham; among the bushes and hedges as you go from London to a bathing place called the old Foorde; in the bushes as you go to Hackney, a village by London, and divers other places, as at Battlesbourne in Hartfordshire, three miles from Roiston. Mr. Goodyer found it with white flowers in a close near Maple-Durham in Hampshire, called Aldercrofts*. About Duplin, near Perth, &c. in Scotland*.]

33. This is an annual plant. Leaves cut into five obtuse lobes almost to the bottom, and these deeply cut on their side. The flowers stand upon very long pedunculs: the calyx is large, prickly and acute-pointed: the corolla is blue.

[Leaves blunter, ciliate, having bristles scattered over the upper surface at the ends. Stems much branched at the base, prostrate, filing. Corolla four times as large as the calyx.

Native of Provence and Spain, on the coast*.]

Gerard doubts whether this be different from M. moschata.]

34. This also is an annual plant, with stalks about a foot long, smooth and declining. Leaves on pretty long footstalks. Flowers single from the axils, and at the top in clusters. Calyxes large, acute. Corollas small, pale blue.

[Leaves sharper, ciliate, entirely smooth above. Stem upright, with alternate branches at the upper part of the stem, and none towards the root. Corollas not longer than the calyx. It is allied to the preceding*.

Native of Egypt. Cultivated in 1739, by Mr. Miller. It flowers in june and july*.

The following observations may assist in distinguishing the species. The leaves in all are alternate, undivided from one to seven, the rest angular. Stem herbaceous annual in 3, 4, 7, 8, 9, 18 to 22, 25, 26, 28, 29, 30, 33. Perennial in 23, 24, 31, 32. Shrubby in 1, 2, 5, 6, 10 to 17, 27.

The outer calyx is in general three-leaved, but sometimes in n. 12, and always in n. 28 it is two-leaved. In 13 it is sometimes four-leaved. In general it is permanent, but in 6 and 13 it is deciduous. Commonly there is a single seed only in each capsule or nut, but they are two-seeded in 18, three-seeded in 6 and 13; the capsules being divided into cells. The corolla is

Orange in 1.
Yellow, 4, 5, 7.
Pale Violet, 6.
Fiery Violet, 13.
Purple, 8, 10, 24.
Blue, 9, 19, 21, 33, 34.
Red, 14, 18, 20, 23, 25, 26, 28, 29.
Pale Rose, 16.
Flesh-coloured, 31, 32.
White, 12.
White with purple veins, 22, 30.

Gærtner remarks, that the common receptacle in all those whose fruit he has described is not cogged (molendinaceum), nor the back of the capsule soluble, as in M. Alcea; whence Medicus has separated this species from the rest under the name of *Bismalva*.]

PROPAGATION AND CULTURE.

Sow the seeds of the hardy sorts at the end of march, upon a bed of fresh light earth, and when the plants are three or four inches high, transplant them where they are to continue, allowing them sufficient space. They appear best when intermixed with other flowers of the same growth.

The seeds may also be sown in august, for most of them will endure the greatest cold of our climate, on a dry soil, and these plants will grow larger and flower sooner than those which are sown in the spring: or if the seeds be permitted to scatter, they will come up and thrive equally with those which are sown.

The seeds of those sorts which come from hot countries must be sown upon a hot-bed in the spring. When the plants are fit to remove, plant each in a small pot filled with light fresh earth, and plunge them into a new hot-bed, shading them until they have taken fresh roots: admit free air to them in proportion to the warmth of the season, and at the end of june they may be placed in the open air in a sheltered situation, where they will flower and produce ripe seeds. [Some of the species require the protection of the bark-stove.

MALVA. See *Hibiscus, Lavatera, Malachra, Malope, Napæa, Sida, Urena.*]

Malva arborea. See *Hibiscus, Lavatera.*

Malva rosea. See *Alcea.* [*Dillenia, Hibiscus.*

MALVAVISCUS. See *Hibiscus.*

MALVINDA. See *Sida, Urena, Waltheria.*

MALUS. See *Pyrus.*

——— americana. See *Cactus, Crataeva, Hippomane.*]

——— armeniaca. See *Prunus.*

——— aurantia. See *Citrus.*

[——— coronaria. See *Pyrus communis.*

——— cotonea. See *Pyrus Cydonia.*

——— indica. See *Rhamnus Jujuba.*]

——— Limonia. See *Citrus.*

——— Medica. See *Citrus.*

——— Persica. See *Aebras, Amygdalus, Mammea.*

——— Punica. See *Punica Granatum.*

[MAMAY and MAMEI. } See *Mammea.*]

MAMMEA. (*So called by Plumier, from the vernacular name of the West Indies.*)

Lin. gen. n. 656. *Reich. n.* 713. *Schreb. n.* 1586. *Jacqu. amer.* 263. *Juss.* 257. Mamei. *Plum. t.* 4.

Class. 23. 1. Polygamia Monoecia (or Dioecia.)

Nat. order of *Guttiferæ*, Juss.

GENERIC CHARACTER.

* *Hermaphrodite.*

CAL. *Perianth* one-leafed, two-parted: *divisions* roundish, concave, coriaceous, coloured, spreading very much, deciduous.

COR. *Petals* four, roundish, concave, spreading very much, subcoriaceous, longer than the calyx.

STAM. *Filaments* numerous, bristle-shaped, erect, very short, inserted into the receptacle, ending in oblong, blunt, erect *Authers*.

PIST. *Germ* roundish, depressed. *Style* cylindric, erect, longer than the stamens, permanent. *Stigma* capitate, convex.

PER. *Berry* roundish, fleshy, very large, acuminate with part of the style, with a coriaceous rind, one-celled.

SEEDS four, subovate, rugged, distinct from the flesh.

* *Male* on the same or a different tree.

CAL. COR. and STAM. as in the Hermaphrodite.

ESSENTIAL CHARACTER.

Cal. one-leafed, two-parted. *Cor.* four-petalled. *Berry* very large, four-seeded.

SPECIES.

1. Mammea americana. *American Mammee.*

Lin. spec. 731. *Syst.* 492. *Reich.* 2. 581. *Jacqu. amer.* 268. *t.* 181. *f.* 82 *pict.* 130. *t.* 248. *Brown. jam.* 249.

Mamei magno fructu, persicæ sapore. *Plum. gen.* 44. *ic.* 170.

Mamay. *Bauh. hist.* 1. 172. *Dalech. hist.* 1836. *Loet. amer.* 356. *Park. theat.* 1633. 1688.

Malus persica maxima, fol. rotundis splendentibus glabris, fructu maximo scabro rugoso. *Sloan. jam.* 2. 123. *t.* 217. *f.* 3.

Arbor indica Mamei dicta. *Bauh. pin.* 417. *Raii hist.* 1665.

DESCRIPTION, &c.

[This is a tall upright handsome tree, with a thick spreading elegant head. It has a long downright tap root, which renders it very difficult to transplant. Younger branchlets quadrangular. Leaves oval or obovate, quite entire, blunt, extremely shining, leathery, firm, with parallel transverse streaks, on short petioles, opposite, from five to eight inches in length. Peduncles one-flowered, short, scattered over the thicker branches. Flowers sweet, white, an inch and half in diameter. The calyx is often tribd with a five-petalled

* Gen. emac. 731. † Light. ‡ Linn. syst. § Ibid. ¶ Hort. kew.

talled or six-petalled corolla; but this arises from one of the segments or petals being cut. Fruit roundish, or obsoletely three-cornered or four-cornered according to the number of seeds, one or two of which are frequently abortive, varying in size from three to seven inches in diameter: it is covered with a double rind; the outer leathery, a line in thickness, tough, brownish yellow, divided by incisures longitudinally decussated; the inner thin, yellow, adhering strongly to the flesh; which is firm, bright yellow, has a pleasant singular taste, and a sweet aromatic smell; but the skin and seeds are very bitter and resinous. It is eaten raw alone, or cut in slices with wine and sugar, or preserved in sugar. In Martinico they distil the flowers with spirit, and make a liquor which they call *Eau Creole*. The English and Spaniards call the fruit *Mamei* or *Mammee*, and the French *Abricot-sauvage*, from the yellowness of the pulp, like that of the Abricot *.

Swartz remarks that the tree which bears hermaphrodite flowers is very lofty, but that the male trees are smaller.

Native of the Caribbee islands and the neighbouring continent. Cultivated in 1739, by Mr. Miller *.

Browne gives the hermaphrodite and male trees as different species. He informs us, that they are among the largest trees in the island of Jamaica, abound with a strong resinous gum, and are esteemed among the best timber trees; that the leaves and young branches are full of a yellow milky juice; that the fruit is large and agreeable, but too strong and gross for a weakly stomach, leaving a bitterness behind it, that continues for a considerable time upon the palate; when in a perfect state containing four rugged oblong angular nuts, having as many kernels of the same shape.]

Mr. Miller says that this tree grows to the height of sixty or seventy feet in the West Indies; that the leaves are large and stiff, and continue green all the year; that the fruit is as large as a man's fist, when ripe of a yellowish green colour, and very grateful to the taste; that it is generally sold in the markets in the Spanish West Indies, and is esteemed one of the best fruits in that country; that it has been transplanted into most of the Caribbee islands, where it thrives exceeding well.

PROPAGATION AND CULTURE.

Set the stones or seeds, as fresh as possible from the West Indies in pots filled with fresh light earth; and plunge them into a hot-bed of tanners-bark, observing to water the earth whenever it appears dry. In about a month or six weeks the plants will appear above ground, after which they must be frequently refreshed with water, and in hot weather the glasses of the hot-bed should be raised to let in fresh air. In two months the roots of the plants will have filled the pots, when you should provide some pots of a little larger size, into which you should transplant the plants, being careful to preserve as much earth to their roots as possible; then you should fill up the pots with fresh light earth, and plunge them into the bark-bed again, observing to water and shade them until they have taken root, after which they should be constantly refreshed with water as you find they want it, and must have air in hot weather. In this bed they may remain till Michaelmas, when they must be removed into the bark-stove, where they must be constantly kept, observing to refresh them with water, but sparingly at this season, as also to clean their leaves from the filth they are apt to contract in the stove; the spring following they should be shifted into fresh earth, and if they require it, into larger pots, but by no means over-pot them, for they do not produce many roots, therefore if the pots are too large the plants will not thrive, they must be constantly kept in the bark-stove, and may be treated after the manner directed for the Coffee-tree.

If, when the stones of the fruit are brought over, they are put into the tan-bed, under the bottom of any of the pots, they will sprout sooner than those which are planted in the earth.

* Jacquin. * Hort. Kew.

[MAMMEA ASIATICA. See *Barringtonia*.

——— SAPOTA. See *Achras*.

MAMMEE TREE. See *Mammea*.

MANABEA. See *Æxiphila*.]

MANCANILLA, [MANCINELLA and MANCHINEEL.] See *Hippomane*.

[MANDARU. See *Bambinia*.

MANDRAGORA and MANDRAKE. See *Atropa*.

MANDURI. See *Gisekia*.

MANETTIA. (*Named from Xavier Manetti, Professor of the botanic garden at Florence, and Secretary of the botanic society there. Author of* Viridarium Florentinum, 1751: *and* Regnum Vegetabile, 1756.)

Lin. gen. Reich. n. 171. *Schreb. n.* 181. Nacibea. *Aubl. t.* 37. *Juss.* 199.

Class. 4. 1. Tetrandria Monogynia.

Nat. order of *Contortæ*. *Rubiaceæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* eight-leaved: leaflets linear, concave, hirsute, permanent.

COR. one-petalled, salver-shaped. *Tube* cylindric, longer than the calyx, scored on the inside with four lines. *Border* four-parted: *divisions* shorter than the tube, ovate, obtuse, bearded within.

Nectary a rim surrounding the receptacle, quite entire, concave.

STAM. *Filaments* four, filiform, very small, inserted into the throat. *Authers* linear, incumbent, two-celled.

PIST. *Germ* inferior, turbinate, compressed. *Style* filiform, declined, the length of the tube. *Stigma* bifid, thickish, blunt.

PER. *Capsule* turbinate, compressed, grooved on both sides, one-celled, two-valved, or separable as it were into two capsules.

SEEDS few, flat, winged, orbiculate with a central seedlet, imbricate at a pulpy oblong pillar.

ESSENTIAL CHARACTER.

Cal. eight-leaved. *Cor.* four-cleft. *Caps.* inferior, two-valved, one-celled. *Seeds* imbricate, orbicular, with a central seedlet.

SPECIES.

1. Manettia reclinata.

Lin. syst. 164. *Reich. n.* 345. *mant.* 558. *Swartz prodr.* 37.

Leaves ovate acute pubescent, stem reclining herbaceous.

2. Manettia Lygistum.

Swartz. prodr. 37.

Petesia Lygistum. *Lin. syst.* 153. *Reich. n.* 313. *Swartz obs.* 47.

Lygistum. *Browne. jam.* 142. *t.* 3. *f.* 2.

Leaves ovate acute veined, stem twining suffrutescent.

3. Manettia lanceolata.

Vahl symb. 1. 12.

Leaves lanceolate, flowers five-stamened.

DESCRIPTIONS, &c.

1. Root annual. Stem weak, branched. Leaves opposite, approximating, subciliate, an inch and half long. Petioles very short, hirsute. Stipules opposite, fastened to the petioles, pressed close, semicircular, very short. Pedunckes axillary, solitary, shorter than the leaves, many-flowered: pedicels opposite, round, hirsute. A bracte to each pedicel, minute, acute. Flowers white.

Native of Mexico *.

2. This weakly shrub rises by a very branched flexuose stem to the height of about seven feet, and is every where adorned with moderately large ovate leaves disposed in an opposite order. The twigs or boughs begin to shoot almost immediately above the root; and they, as well as the succeeding branches, rise generally to the height of the main stem, and are furnished with moderate bunches of flowers towards the top, which generally rise by long branched pedunckes from the axils *. The calyx is eight-leaved, and the seeds imbricate, as in the preceding *.

Native of Jamaica.

3. Stem shrubby. Pedunckes terminating; often in threes, the side ones three times as long as that in the middle, bifid at top. There is a lanceolate leaflet at the division of the pedunckes. Flowers at first heaped,

* Linn. mant. * Browne. * Swartz obs.

then in racemes, directed one way; with bristle-shaped leaflets at the base of the calyx. Capsule crowned with the calyx. It agrees with Manettia in the corolla, nectary, stigma and pericarp; differing only in the number of stamens and segments of the calyx.—Allied to Cinchona[1].

MANGAS. See *Mangifera*.
MANGHAS. See *Cerbera*.
MANGOMS. See *Mangifera*.]

MANGIFERA. (*From* Manga *or* Manghos, *the vernacular name of the fruit; and* fero, *to bear.*)
Lin. gen. n. 278. *Reich.* n. 289. *Schreb.* n. 387. *Gærtn.* t. 100. *Juss.* 369.
Class 5. 1. Pentandria Monogynia.
Nat. order of *Terebinthaceæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* five-parted: *divisions* lanceolate.
COR. *Petals* five, lanceolate, longer than the calyx.
STAM. *Filaments* five, awl-shaped, spreading, the length of the corolla. *Anthers* subcordate.
PIST. *Germ* roundish. *Style* filiform, the length of the calyx. *Stigma* simple.
PER. *Drupe* kidney-form, oblong, gibbous, compressed.
SEED. *Kernel* oblong, compressed, sanguinole.

ESSENTIAL CHARACTER.

Cor. five-petalled. *Drupe* kidney-form.

SPECIES.

1. Mangifera indica. *Mango-Tree.*
Lin. spec. 290. *fil.* 242. *ed.* 13. 201. *Reich.* 1. 567. *suppl.* 157. *flor. zeyl.* n. 471. *Bont. jav.* 95. *Lour. cochinch.* 159.
M. domestica. *Gærtn. fruit.* 2. 95.
Manga domestica. *Rumph. amb.* 1. 93. *t.* 25.
M. indica fructu magno reniformi. *Raii hist.* 1550.
Mangas. *Park. theat.* 1633.
Mao f. Mau f. Manghos. *Rheed. mal.* 4. 1. *t.* 1, 2.
Persicæ similis putamine villoso. *Bauh. pin.* 440.
Amygdalum referens fructus hirsutus. *Bauh. hist.* 1. 183.
Amba f. Mangas. *Bauh. hist.* 1. 173.
β. Manga compressa. *Gærtn. fruit.* 2. 96.
γ. Manga dodoel. *Gærtn. fruit.* 2. 96.
δ. Manga Kayjer. *Gærtn. fruit.* 2. 96.
ε. Manga teloor. *Gærtn. fruit.* 2. 96.
ζ. Manga Bierie-gandatia. *Gærtn. fruit.* 2. 96.
Leaves simple, flowers five-stamened.
[2. Mangifera pinnata. *Wing-leaved Mango Tree.*
Lin. fil. 242. *suppl.* 156. *Retz. obs.* 5. 4. n. 66.
Leaves pinnate, flowers ten-stamened.
3. Mangifera foetida. *Stinking Mango Tree.*
Lour. cochinch. 160.
Manga foetida. *Rumph. amb.* 1. *t.* 28. *Bont. jav.* 25.
Racemes elongated, petals ovate and reflex, drupe cordate pubescent.]

DESCRIPTIONS, &c.

1. This is a large spreading tree. The wood is brittle, brown and used only for indifferent work[1]. The bark becomes rugged by age. The leaves are seven or eight inches long, and two or more broad, [lanceolate, quite entire, smooth, of a fine shining green and a paler resinous smell[2]] terminating in points, and having several transverse parallel opposite ribs; [they are on short petioles[3], and grow in bunches at the extremity of the branches[4].] The flowers are produced in loose bunches at the end of the branches. [The calyx consists of five, acute, spreading leaflets; the corolla, which is inferior, of five oblong flat petals, reflex at the tip, white with yellow streaks at the base, longer than the calyx: nectary spheroidal, large, fleshy, five-lobed, compressing the germ. Stamens shorter than the corolla, with five ovate nodding anthers. Style short. Drupe large, covered with a smooth, loftish, resinous, pale green, yellow, or half red skin, and containing an ovate woody fibrous compressed nut or stone, within which is an ovate fleshy kernel[5].—Gærtner thus describes it more particularly. It is a berried drupe, flatted like a bean, kidney-shaped; the flesh soft and pulpy, like a damascene Plum; the shell ovate-oblong, almost kidney-shaped, of a leathery crustaceous substance, hard, one-celled, valveless, on the outside grooved and wrinkled, covered all over with capillary woody fibres, smooth within and lined with a whitish papery membrane, very tough and smooth, separating from the shell or stone when ripe. Umbilical chord very short, arising from the bottom of the shell, and inserted into the margin of the seed at the lower part. Skin little, papery, thin. Albumen none. Embryo upright, white: cotyledons fleshy, plano-convex: radicle short, curved in upwards, inferior.

This fruit, when fully ripe, is yellow and reddish, replete with a fine agreeable juice; some are full of fibres, and the juice runs out of these on cutting, or with a little handling; but those which have few or no fibres are much the finest; they eat like an apple, but are more juicy, and some are as big as a large man's fist. It is esteemed a very wholesome fruit, and except very fine Pine-apples is preferable to any fruit in India; gentlemen there eat little other fruit in the hot months; but if no wine be drank with it, the Mango is apt to throw out troublesome boils, at least with new comers, which are however conducive to health[6].] In Europe we have only the unripe fruit brought over in pickle.

It grows naturally in most parts of India, also in the Brazils, and some other parts of the world; [as Cochinchina, Pegu, &c.

It was cultivated in 1690, in the Royal garden at Hampton Court[7].]

Mr. Miller, in his last folio edition of the Dictionary (1768) says, that a Mango plant was brought over by Captain Quick, and was then in good health in the Chelsea garden; the plants that were in England before having been destroyed by too much heat.

[Linnæus, not having an opportunity of examining the fructification with accuracy, could not determine this genus with certainty; he had several in his herbarium, but he regarded them as varieties only of the cultivated Mango. Loureiro remarks, that there are many varieties, differing chiefly in the figure, size, colour, and taste of the fruit, as Apples and Pears do in Europe. Retzius on the contrary affirms, that there are certainly several distinct species; the number of stamens in some being double; the racemes in others compound; the fruit kidney-shaped, globular, fleshy, almost juiceless, &c. Gærtner has distinguished some of the most remarkable varieties by the fruit.

β. Shell large, about a span in length, in a manner leafy at top, but having a small lenticular cell below; grooved and crimite in the other parts like the cultivated sort.

γ. Shell very turgid, in other respects very like the preceding, except in being a third part shorter.

δ. Shell extremely like that of γ, but scarcely grooved, being only striated here and there.

ε. Shell less by half than the preceding varieties, but a little turgid and deeply grooved.

ζ. Shell the size and shape of that of an Almond, leathery, thin, brittle, white, neither grooved nor striated, but rough with very gross fibres.

He adds, that in all these varieties the embryo is regularly divided into two cotyledons; whereas in the cultivated sort the lobes are most usually united and split into various irregular partial lobules.

Doubtless many more varieties might be added by people of the countries where this tree grows naturally.

M. Amba of Forskahl, which Gmelin has given as a distinct species, is probably not different from M. indica, in which Jacquin (ic. vol. 2. and collect. 4. 97.) has found the filaments such as Forskahl describes them in Amba[1].

Rottboel in nov. act. dan. 2. 534. t. 4. has a species which he names Mangifera glauca, and which Gmelin has also adopted under the same name. It is Celastrus glaucus of Vahl, 2. 42. Schreberi of Retzius, 6. 25. And properly a species of Elæodendrum.

Linnæus doubts whether all the flowers in M. indica

[1] Vahl. [2] Loureiro. [3] Ibid. [4] Ives. [5] Loureiro. [6] Ives, voy. 184. [7] Hort. kew. [1] Linn. trans. 2. 226. See Linn. zeyl. n. 472.

be hermaphrodite. Loureiro affirms that he has always found them so.

2. Leaves a foot long, unequally pinnate: the leaflets oblong and quite entire. The flowers in a large panicled raceme. Linnæus refers it to this genus on the authority of Koenig, who had examined the living plant, and had seen the fruit[a]. It appears however to be of a different genus; the flowers having ten (seldom eight) stamens and five styles; the nut being five-celled and five-seeded, with a cover like that of the Nutmeg, but callous[b].

Native of the East Indies.

3. This is a large tree, with the bark somewhat rugged, and ascending branches. Leaves lanceolate, quite entire, but three times the size of those of the common Mango, dark green, scattered, on long petioles. Flowers red, terminating, in oblong racemes. Corollas reflex from the base, acute, five-petalled. Drupe fleshy hirsute, roundish, cordate, strong smelling, of an acid flavour and unwholesome. Nut roundish, fibrous.

The wood, though not very good, is useful for floors, and lasts very well, if it be soaked a considerable time in muddy water[c].

Native of the East Indies and Cochinchina.]

PROPAGATION AND CULTURE.

The vegetative quality of the nuts not seeming to be long preserved, the readiest method to obtain plants of Mango in Europe, is to set a quantity of the nuts in a tub of earth in the country where they grow naturally, and when the plants are grown a foot high, to ship them, placing a covering over them to defend them from the water and spray of the sea, being very careful not to water them too much in the passage: when the ship arrives in a cold climate, screen them from cold. This tree will not thrive in the tan-pit. Set the plants therefore in pots filled with light kitchen-garden earth, and place them in a dry stove, where in warm weather they should have fresh air daily, and in winter the air should be kept up to temperate, as marked on the thermometer.

[The nuts should be sent over in wax to preserve their vegetative quality. The Mango may be increased here from cuttings, in the same manner as Gardenia.

MANGIUM. See *Rhizophora*.

MANGLE. See *Avicennia*, *Bucida*, *Conocarpus*, *Rhizophora*.

MANGOSTANA, MANGOSTAN or MANGOSTEEN. See *Garcinia*.

MANGO TREE. See *Mangifera*.

MANGROVE GRAPE TREE. See *Coccoloba*.

MANIA-KUAI. See *Curcuma*.

MANIA-RUBINI. See *Jatropha*.

MANIA-PUMERAN. See *Nyctanthes*.

MANIELLA-KUA. See *Curcuma*.

MANIHOT. See *Hibiscus*, *Jatropha*, [*Tragia*.

MANIOC. See *Jatropha*.

MANISERIS. (*From μανη and ουρα, a thin or loose tail, which this grass resembles.*)

Lin. gen. Reich. n. 1257. *Schreb. n.* 1570. *fl. nov. gen. gram.* 21. *f.* 1—7. *Gærtn. t.* 175. *Juss.* 34.

Class. 23. 1. Polygamia Monoecia.

Nat. order of *Gramina*, *Graminæ* or *Grasses*.

GENERIC CHARACTER.

* *Hermaphrodite flowers, in the adverse side of the flexuose jointed spike, imbricate, alternate, each immersed in each joint, which is excavated on one side.*

CAL. *Glume* one-flowered, two-valved: *outer valve* larger, coriaceous, roundish, rugged in the middle, emarginate or entire at the top and sides; *inner* smaller, broad-lanceolate, membranaceous, pressed close to the outer.

COR. *Glume* two-valved, membranaceous, thin, diaphanous, smaller than the calyx, included: the outer with its margins embracing the inner, which is smaller. *Nectary.*

STAM. *Filaments* three, filiform, standing out. *Anthers* oblong, incumbent.

PIST. *Germ* ovate. *Styles* two, short, filiform. *Stigmas* oblong, bearded, spreading, standing out on both sides.

PER. none. *Calyx* cherishing the seed.

SEED single, ovate.

* *Male flowers marginal, alternate, in the back of the spike on each side.*

CAL. *Glume* one-flowered, roundish, two-valved: *valves* parallel, ovate-lanceolate, blunt, striated, leathery, augmented by a membrane, almost equal.

COR. *Glume* two-valved, membranaceous, thin, almost the size of the calyx: *outer valve* ovate, blunt, convolute; *inner* lanceolate, plaited, scarcely longer. *Nectary.*

STAM. *Filaments* three very short or none. *Anthers* as in the hermaphrodites.

OBS. *The inner calycine glume of the hermaphrodite flowers, in* M. myurus *at least, is certainly not glued to the ovarium, as it is described and figured by the younger Linnæus.* S.

ESSENTIAL CHARACTER.

HERM. *Cal.* Glume two-valved, one-flowered, outer valve emarginate at the top and sides. *Cor.* less than the calyx. *Stam.* three. *Style* bifid.

MALE as in the hermaphrodites, but with the flowers in the lower side of the same spike standing out more.

SPECIES.

1. Maniseris myurus.

Lin. syst. 907. *mant.* 300. *Reich.* 4. 318. *Swartz prodr.* 25.

Spikes lateral, outer valves flat ovate, emarginate at the top and sides, calm ascending.

2. Maniseris granularis.

Swartz prodr. 25. *Gærtn. fruct.* 2. 468.

Cenchrus granularis. *Lin. syst.* 907. *mant.* 575. *Reich.* 4. 315.

Gramen cyperoides, &c. *Sloan. jam.* 1. 128. *t.* 80.

Spikes lateral, outer valves orbicular, callous-dotted, sheaths hairy, culm erect.

DESCRIPTION, &c.

1. Culms ascending or diffused, jointed, even, the thickness of a large thread, a foot high, branched towards the base, and with alternate spike-bearing branches at top. Leaves even, sheathing, spreading, narrower; with thickish sheaths, shorter than the internode. Floral leaves at the base of the peduncle, without sheaths, erect, convoluted like the glumes, lanceolate. Spikes (three or four on a culm) solitary, lateral and terminating, peduncled, twice as thick as the culm, fingered, imbricate, more closely so at the back, somewhat jointed, punched with a few holes as it were with emarginate scales; on the lower side (next the ground) jointed and bifariously squarrose: florets striated, roundish, a little prominent.—Native of the East Indies[a].

2. This has been already described from Linnæus's mantissa, under Cenchrus granularis, which see. It has however the character of Maniseris, and therefore is justly placed in this genus by Swartz and Gærtner. The latter observes, that the calyx of the hermaphrodite flowers when ripe becomes hard, almost like the shell of a nut, including the seed very tight, and not letting it drop: and that the seed is small, roundish, convex on one side, flattish on the other, and red. Sloane's synonym is quoted by Linnæus under Panicum clandestinum.—It is a native of Jamaica[b].

MANNA ASH. See *Fraxinus*.

MANORI. See *Glycine*.

MANSANA ARBOREA, Gmel. MANZANAS of Sonnerat. See *Rhamnus Jujuba*.

MANULEA.

Lin. gen. Reich. n. 830. *Schreb. n.* 1032. *Gærtn. t.* 55. *Juss.* 100.

Class. 14. 2. Didynamia Angiospermia.

Nat. order of *Perforatæ*. *Pedicularis*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* five-parted: *segments* linear, erect, equal, permanent.

COR. one-petalled, irregular. *Tube* cylindric, with the throat rather wider. *Border* five-parted, awl-shaped, spreading:

[a] Suppl. [b] Retzius. [c] Loureiro.

[a] Linn. mant. [b] Swartz.

spreading: the four upper divisions more connected at the base; the lowest reflex.

STAM. *Filaments* four, very short. *Anthers* the two upper in the throat, the two lower somewhat oblong, within the tube.

PIST. Germ superior, roundish. *Style* filiform, the length of the lower stamina. *Stigma* simple.

PER. *Capsule* ovate, the length of the calyx, two-celled, two-valved: the valves when ripe semibifid. *Partition* doubled, by the inflex margins of the valves.

SEED. very many, small. *Receptacle* oblong, compressed, in the axis of the capsule.

ESSENTIAL CHARACTER.

Cal. five-parted. *Cor.* with a five-parted awl-shaped border, the four upper segments more connected. *Caps.* two-celled, many-seeded.

SPECIES.

1. Manulea Cheiranthus.
Lin. fyst. 569. *Reich.* 3. 173. *mant.* 88.
Lobelia Cheiranthus. *Lin. spec.* 1319.
Nemia Cheiranthus. *Berg. cap.* 160.
Cheiranthus africana flore luteo. *Comm. hort.* 2. 83. *t.* 42.
Leaves naked, stems almost leafless, peduncles alternate one-flowered.

2. Manulea tomentosa.
Lin. fyst. 569. *Reich.* 3. 173. *mant.* 420. *Curt. magaz.* 322.
Selago tomentosa. *Lin. spec.* 877. *amoen.* 6. *ofr.* 22. *Plak. phyt. t.* 319. *f.* 2.
Leaves tomentose, stems leafy, peduncles many-flowered.

3. Manulea microphylla.
Lin. fyst. 569. *suppl.* 285.
Leaves ovate in bundles smooth entire.

4. Manulea integrifolia.
Lin. fyst. 569. *suppl.* 285.
Leaves ovate scattered smooth entire.

5. Manulea heterophylla.
Lin. fyst. 569. *suppl.* 285.
Leaves linear scattered villose entire or toothed.

6. Manulea coerulea.
Lin. fyst. 569. *suppl.* 285.
Leaves linear opposite tomentose toothed, flowers racemed.

7. Manulea cuneifolia.
Lin. fyst. 569. *suppl.* 285.
Leaves elliptically ovate smooth toothed, spikes oblong.

8. Manulea capillaris.
Lin. fyst. 569. *suppl.* 285.
Stem-leaves obovate smooth toothed, branches linear, spikes ovate.

9. Manulea Plantaginis.
Lin. fyst. 569. *suppl.* 285.
Leaves ovate lanceolate toothed or entire smooth, heads ovate, branches diffused.

10. Manulea capitata.
Lin. fyst. 569. *suppl.* 285.
Leaves ovate serrate villose, heads globular, branches diffused.

11. Manulea Antirrhinoides.
Lin. fyst. 569. *suppl.* 285.
Leaves ovate toothed smooth, flowers alternate.

12. Manulea thyrsiflora.
Lin. fyst. 569. *suppl.* 285.
Leaves obovate lanceolate toothed, corymb terminating elongated compound.

13. Manulea corymbosa.
Lin. fyst. 569. *suppl.* 286.
Leaves oblong toothed smooth, corymb fastigiate.

14. Manulea altissima.
Lin. fyst. 569. *suppl.* 286.
Leaves lanceolate somewhat toothed villose, spikes ovate.

15. Manulea rubra.
Lin. fyst. 570. *suppl.* 286.
Leaves lanceolate villose serrate, flowers racemed remote.

16. Manulea argentea.
Lin. fyst. 570. *suppl.* 286.
Leaves obovate wedge-form serrate silver-dotted, flowers axillary.

17. Manulea pinnatifida.
Lin. fyst. 570. *suppl.* 286.
Leaves ovate gash-pinnatifid: pinnæ toothed.

18. Manulea hirta.
Gærtn. fruct. 1. 258.
Selago hirta. *Lin. fyst.* 569. *suppl.* 285[b].
Rough-haired, leaves obovate, spikes very long.

DESCRIPTIONS, *&c.*

1. This is an annual. The herb has the stature of Euphrasia. Stem a hand high, branching from the base to the middle in several upright round naked stemlets. Leaves alternate, obovate-oblong, sessile, serrate, on the upper branches small. Racemes terminating, upright, longer than the plant. Bractes linear, shorter than the calyx. Peduncles also shorter than the calyx. Corollas deep yellow[a].

2. Root biennial. Stem a foot or a foot and half high, and woolly. Branches opposite, not alternate, as Linnæus describes them; in this perhaps they may vary. Leaves opposite, sessile, obovate, narrowing to the base, toothed on the edge, which is rolled back a little in the young leaves. Flowers in a long thyrse, from two to five from one common short peduncle: they are at first lemon-coloured or greenish yellow, finally deep orange.

Linnæus says that the whole of the plant except the corolla is woolly, the tube even of that is hairy; the segments are smooth with their edges rolled back; the upper part of the tube, in which the filaments are inclined, is somewhat dilated, as is also the lower part, so that it is narrowest in the middle. The flowers appear from may to november, and are usually followed by seeds, from which the plant may be propagated. The flowers have a fingular, but unpleasant smell, not perceivable at a distance. The variety of pleasant colours so conspicuous in the flowers renders this a very desirable plant[b].

Linnæus remarks that Selago lychnidea seems to be allied to this species.

Introduced in 1774, by Mr. Francis Maſſon. It flowers from may to november[c].

These and the subsequent sorts are natives of the Cape of Good Hope. They were mostly found by Thunberg, and are only registered in the Supplementum Plantarum of the younger Linnæus, and in Systema Vegetabilium.

18. The capsule of Manulea hirta is described by Gærtner as small, ovate-oblong, with a groove on each side: receptacle central, columnar, oblong, compressed a little, not fattened to the partition. Seeds subglobular, obsoletely angular, with small excavations in rows, white. He remarks that not only this, but all the many-seeded Selagos should be removed from that genus.

MANURES.

Every substance that when laid on land or mixed with the soil promotes vegetation, or increases its fertility, is called a manure.

Manures operate in all the different ways by which vegetation is promoted. By communicating to the soil with which they are mixed the vegetable food which they contain. By communicating to it a power of attracting this food in greater plenty from the air. By enlarging the vegetable pasture. By dissolving the vegetable food which it is already possessed of, and fitting it for entering the roots of plants.

Some manures afford nourishment only: as rape-dust, soot, malt-dust, pigeon's-dung, and in general all top or hand-dressings.

Others give nourishment, and also add to the soil, as animal dungs, and all rotten animal and vegetable substances.

Others again open the soil, and do not nourish in their own nature: as lime, light marls, sand, &c.

Lastly, other manures lighten the soil, and at the same time nourish a little: as clay, clay marls and earth.

Manures are considered by different authors as simple and compound; as natural and artificial; nutritious and stimulating; or solvents and mucilages; mechanical or chemical; as animal, vegetable, and mineral. All these distinctions may have their use, and are each attended with difficulties and liable to objections. Some

[a] Linn. mant. [b] Curt. magaz. [c] Hort. kew.

method

method however being neceſſary in treating a ſubject which embraces a great variety of objects, manures are here in general thrown into the three great diviſions of animal, vegetable and foſſil. After theſe have been treated ſeparately, Compoſts, and their improvements not ſo properly called Manures will conclude this treatiſe; in which it is not propoſed to enter much into the theory of Manures, or to give a philoſophical diſquiſition on the ſubject, but rather to lay before the reader the reſult of a variety of experience and practice. The theory may be learnt from Dr. George Fordyce's Elements of Agriculture and Vegetation. Home's Principles of Agriculture and Vegetation. Hunter's Georgical Eſſays. Cullen's Lectures on Vegetation and Agriculture. Ingenhouſz's Treatiſe on the Food of Plants, and the renovation of Soils. Headlicke's Eſſay on Manures. Kirwan on Manures. Haſſenfratz Annales Chymiques, Duhamel, Tillet, Bergman, Prieſtly, Lavoiſier, Senebier, &c. &c.

Manures are confeſſedly very different in their nature. Some of them operate in all the ways abovementioned; and there are none that do not operate in more ways than one.

It is a fundamental miſtake to ſuppoſe with Tull that Tillage may be ſubſtituted in the place of manure. Manures will indeed be of little avail without it; but although good tillage, by ſeparating the ſoil may bring a greater number of nutritious particles within the reach of the crop, yet the ſoil cannot poſſibly continue to be ſo completely divided as it is by the fermentation excited by dung and other manures; which are found to enrich the beſt pulverized ſoil again and again, after it is exhauſted by crops; and therefore promote vegetation by increaſing the quantity of vegetable food.

Some manures loſe part of their ſtrength by being long expoſed to the air. Thus after dung is ſufficiently fermented, the longer it lies, the leſs is its value. Cow-dung dried on the paſture, gathered and laid upon other land, has ſcarcely any effect; whereas the ſame quantity carried from the cow-houſe, or collected by folding the cattle, enriches the land. Hence this kind of manure contains the vegetable food in itſelf, and does not receive it from the air.

Other manures on the contrary operate ſooner and with greater violence, the longer they are expoſed to the air, before they are uſed. Lime and marls are of this kind. They are obſerved to have a ſtrong power of attracting certain qualities from the atmoſphere; and operate by communicating to the ſoil with which they are mixed a power of attracting vegetable food from the air.

Again, ſome manures exhauſt land of its vegetable food, and do not reſtore it again when immediately applied. This is thought to be the caſe with Lime. Land thoroughly limed, after having carried many very good crops, ſeems to be exhauſted, and reduced to a worſe ſituation than before. When in this caſe lime has been applied a ſecond time, its effects have been found to be far inferior to what they were when firſt applied. This manure therefore ſeems to operate by diſſolving the vegetable food which it meets with in the ſoil, and fitting it for entering the roots of plants.

It ought however here to be remarked, that exhauſtion of land by lime is owing to bad management and unmerciful forcing of it with continued white crops. It is not certain that land will not bear a ſecond liming. It is certain that the effect of the lime may be long kept up by the proper application of dung and other oily manures; and there have been inſtances of the effect of lime continuing forty, fifty, or even a hundred years.

Certainly all kinds of manures contribute to open the ſoil. Any perſon may be convinced of this, who will take the trouble to compare a piece of land on which dung or any other manure has been laid, with a piece contiguous that has not been manured: he will find the former much looſer, much more free and open than the latter. It muſt be allowed therefore that all manures operate by enlarging the vegetable paſture*.

* Hunter's Georg. Eſſays. 19

Manures are applied to ſupply either the nutritive ingredients of a ſoil, to improve its texture, or to correct its vices.

For *clayey* ſoils the beſt manure is Marl, and that which is moſt calcareous is beſt.

Theſe ſoils are defective both in conſiſtence and texture; they want the calcareous ingredient and coarſe land. Calcareous marl ſupplies the firſt chiefly; limeſtone gravel will ſupply both.

A mixture of marl and dung is ſtill more advantageous, becauſe the dung ſupplies the carbonaceous ingredient. But the ſame quantity of marl muſt be uſed, as if no dung had been applied; or elſe the operation muſt be more frequently repeated.

If marl cannot be had, a mixture of coarſe ſand and lime perfectly effete or exſtinguiſhed, or chalk, will anſwer the ſame purpoſe, as it will ſupply the defective ingredient, and open the texture of the clay. So alſo ſand alone, or chalk, or powdered limeſtone may anſwer, though leſs advantageouſly. Lime alone ſeems leſs proper, as it is apt to cake, and does not ſufficiently open the ſoil.

Where theſe manures cannot be had, coal-aſhes, chips of wood, burned clay, brick-duſt, gravel or even pebbles are uſeful; for all theſe improve the texture, and the former ſupply alſo the carbonaceous ingredient.

Nothing perhaps is equal to good ſtable and ſold-yard dung for ſtrong tillage lands, becauſe it opens this heavy ſoil at the ſame time that it ſupplies the richeſt nutriment. But dung is a proper ingredient in the appropriated manures of all ſorts of ſoils, as it ſupplies the carbonaceous principle.

Clayey Loam is defective either in the calcareous ingredient, or in the ſandy, or in both: if in the firſt, the proper manure is chalk; if in the ſecond, ſand; if in both, ſhelly marl, or lime-ſtone gravel, or effete lime and ſand.

Chalky ſoil wants both the clayey, and the ſtony ſandy or gravelly ingredients, the beſt manure for it therefore is clayey loam or ſandy loam; but when the chalk is ſo hard as to keep of itſelf the ſoil ſufficiently open, then Clay is the beſt manure, for in ſuch caſes the coarſe land of gravelly ingredients of loams are of no uſe. Some indeed think, that pebbles in a field ſerve to preſerve or communicate heat; this uſe however is not ſufficiently aſcertained. They detain moiſture, and thus on chalk lands a complete covering of great black flints inſures a tolerable crop in a dry ſeaſon.

Chalky Loam. The beſt manure for this ſoil is clay or clay-marl; becauſe it is defective principally in the clayey ingredient. Light limeſtone ſoils, not differing eſſentially from theſe, require the ſame manure.

Sands. The beſt manure for theſe is calcareous marl, for they want both clay and calx, and this marl ſupplies both: the next beſt is clay-marl, and next to theſe clay mixed with lime, or calcareous or clayey loams. Lime or chalk are leſs proper, becauſe they do not give ſufficient coherence to the ſoil; however, when mixed with earth or dung, theſe anſwer well, becauſe they form a ſort of marl or compound comprehending the defective ingredients.

Sandy Loams are defective chiefly in the calcareous ingredient, and in ſome degree alſo in the argillaceous: their texture alſo is imperfect, as they abound both in fine and coarſe ſand: chalk or lime would ſupply the firſt defect, but leave the texture unamended. Calcareous or argillaceous marls are moſt proper. Clay, after land has been chalked, anſwers well, becauſe it remedies the texture.

Gravelly Loams are benefited by the application of marl, whether argillaceous or calcareous. If the gravel be calcareous, clay may be employed. A mixture of effete lime and clay ſhould anſwer in all caſes.

Farruginous Loam or *Till* and *Peaty* ſoils neceſſarily require the calcareous ingredient to neutralize their peccant acid: hence chalk, limeſtone gravel and calcareous marl are moſt advantageouſly applied to them.

Bogs or boggy ſoils, muſt be firſt drained, and then the nature of the ſoil being explored, an appropriate

manure muſt be applied. In general they ſhould be burned, and then covered with limeſtone gravel or lime mixed with coarſe ſand or gravel, becauſe they are uſually of a clayey nature; if they are more ſandy, lime may anſwer well, or calcareous marl. If their upper parts contain a ſufficiency of the carbonaceous principle, as often happens, they need not be burned.

For all moiſtiſh and cold ſoils, gravel, road-dirt, ſmall ſtones, coal-aſhes, ſoaper's aſhes, hog-dung, &c. are good. But in cold wet lands, no manure can be effectual without draining.

Heathy ſoils ſhould firſt be burned to deſtroy the heath, and increaſe the carbonaceous principle. Lime alſo will deſtroy heath. Limeſtone gravel is the fitteſt manure when the ſoil is clayey, lime when it is gravelly. Gypſum alſo anſwers remarkably well when the ſoil is dry[5].

Manure is uſually applied in three different ways. The firſt and moſt common is that of ploughing it in, and thus mixing it with the whole ſoil. This is the beſt ſyſtem where it is neceſſary to enrich a field for a ſucceſſion of exhauſting crops; and alſo in ſtrong heavy lands, which require to have their parts ſeparated as much as poſſible; which effect is produced by nothing better than by ploughing in long dung or green crops. It may perhaps be queſtioned whether this be the beſt means to make the moſt of the manure, as ſome valuable parts of it may be ploughed in too deep, and even entirely loſt. The ſecond is, ſpreading or ſcattering the manure upon young crops, which is called Top-dreſſing or hand-dreſſing. This mode is confined to particular ſubſtances, as ſoot, rape-cake, pigeon's-dung, aſhes, &c.; and has been found to anſwer, eſpecially with crops which tiller, as wheat and barley. Even dung, well rotted and made into a compoſt with earth, lime or other active ſubſtances, may be thus employed, and being applied on the ſurface, and at a ſeaſon when the crop ſtands moſt in need of it, a much leſs quantity of manure will be ſufficient; but then it will be of little or no uſe to ſucceeding crops, and the expenſe of preparing it will be greater. When crops are ſickly or backward in the ſpring, top-dreſſings are certainly of great uſe, except the ſeaſon ſhould prove uncommonly dry.

The third way of applying manure, is laying it into drills, and ſowing the crop upon it. This is uſed only for particular crops, as potatoes, turneps, &c. which thus receive the whole benefit of the manure, in all ſtages of their growth.

DUNG

Is the moſt common, general, and upon the whole the moſt efficacious of all manures. It is properly the excrement of animals, but is uſed alſo to ſignify all rotten vegetables, when uſed as manures.

Dung promotes vegetation by increaſing the vegetable food, by enlarging the paſture of plants, by communicating to the ſoil a power of attracting the vegetable food from the air, and by preparing the vegetable food for the nouriſhment of plants[6].

Dung of Quadrupeds, is the moſt common manure in uſe.

Stable dung is uſed either freſh or putrified; the firſt is called *long*, the ſecond *ſhort* dung. It abounds in animal matter, eaſily putrifies, and ſerves to haſten the decay of other dead vegetable ſubſtances. Its fermentation is promoted by frequent turning and expoſure to the air: yet it ſhould be covered to prevent water from carrying off moſt of its important ingredients; or at leaſt the water that imbibes them ſhould not be loſt.

Farm-yard dung conſiſts of various vegetables, chiefly ſtraw, ſometimes weeds, leaves, fern, &c. impregnated with animal matter: it ferments more ſlowly than ſtable dung, ſhould be piled in heaps, and ſtirred from time to time: fern in particular putrifies very ſlowly[7].

Management.

When any conſiderable quantity of ſtable or yard dung, or other mixture of animal and vegetable ſubſtances is collected together in a heap, and ferments; when this proceſs is completed, if the maſs be examined, we find that the vegetables of which it was originally compounded are decompoſed, and in a ſituation to nouriſh new plants. The more completely therefore theſe ſubſtances are ſubmitted to the proceſs of fermentation, the more beneficial will be their effects upon the ſoil. Hence it is an object of the firſt importance to Farmers to have their dunghills ſo ſituated and conſtructed as to promote their fermentation, and retain all the uſeful parts of them.

Theſe circumſtances have been very little attended to: the greater part of dunghills, being either placed in hollows, and ſurrounded with water, which effectually prevents fermentation by chilling them; or upon declivities where every drop of moiſture runs away: cattle are allowed to ſpread it by trampling, weeds to exhauſt it, and carts and waggons are driven over it. Thus the middle, from being hard preſſed, will be imperfectly fermented, and the ſides, from being ſcattered about and dried, will not be fermented at all, but in a condition little better than dry ſtraw.

To promote fermentation in dung, air and moiſture are neceſſary. It is well known to gardeners that in making hot-beds, by laying the dung lightly in heaps, and watering it gently, fermentation is immediately brought on: and that hot-bed dung is as completely fermented in a fortnight, as that in a farm-yard generally is in ſix or eight months.

The farmer ſhould imitate this practice as nearly as the nature of his ſituation will admit, and inſtead of having his dunghill in the yard, and allowing carts, cattle, &c. to diſturb it, he ſhould place it in ſome diſtinct ſituation, convenient for his offices, where the urine may be kept with it, or elſe run into a receptacle, whence it may be thrown back into the dung to enrich it and promote the fermentation, or be carried off in carts to manure his land.

When dung is carried to the dunghill, it ſhould not be driven over the heap as is commonly practiſed, becauſe the feet of the horſes and the weight of the carriage will preſs it ſo hard as to exclude the air, and thereby prevent the fermentation: when the quantity alſo is conſiderable, the horſes are ſtrained, and the harneſs damaged by the exertions neceſſary to drag a loaded carriage over a hill of ſuch looſe materials. Every load therefore ought to be laid down by the ſide of the dunghill, at leaſt after the work has made ſuch progreſs as to render paſſing over it a matter of difficulty, and afterwards thrown up lightly with a fork, the labour of which is trifling in compariſon with the advantage reſulting from it.

If dung laid up in this manner contains a ſufficient proportion of moiſture, it will immediately begin to ferment; if therefore it is too dry, it ſhould be watered, and in ſummer this will frequently be found neceſſary: it will thus be completely fermented in ſix or ſeven weeks, and will be more valuable by half than that which is made in the common ſlovenly manner. The ſituation beſt calculated for a dunghill is that which is neareſt to a level, with a bottom capable of retaining moiſture, and covered with a ſhed.

If the whole be incloſed with a wall, except an open ſpace at one end for carting away the dung, it will be a great improvement. The wall on the ſouth ſide ſhould be of ſuch a height as entirely to prevent the ſun's rays from reaching the dung, on the other three ſides ſix feet in height from the ground will be ſufficient. The roof may be thatched, and ſupported on pillars. If the bottom be not clay or chalk naturally, it muſt be laid with one of thoſe ſubſtances, and the upper part ſhould be paved with broad flags or common paving ſtones. At the end oppoſite to the opening a reſervoir may be dug to receive the moiſture: it ſhould be water-tight, and a pump ſhould be put into it to draw off the moiſture daily. This may be thrown back on the dung-heap, or drawn into a barrel on a cart, and either ſpread immediately on the land, or mixed with other ſubſtances in a compoſt.

Application.

Dung is applied indiſcriminately upon all ſoils, at almoſt any ſeaſon, and for every crop. Of all manures commonly in uſe none can be conſidered as a more immediate food for plants, and when applied to vege-

[5] Kirwan in V. Ann. 23. [6] Hunter's Eſſ. 18. [7] Kirwan in V. ann. 23. 91.

tables in a growing ſtate, they immediately begin to thrive. On this theory it ſeems abſurd that great quantities of rich dung ſhould be laid upon the fallows at the end of autumn, and ſtill worſe about Midſummer, there to remain till the enſuing ſpring before it can be of any uſe to the plants: for if the fallow be ſown with wheat or any other winter crop, the growth of the plants being ſtationary, they need little nouriſhment; in the mean time the ſalts contained in the dung, after having been ſpread abroad a month, or perhaps ſix weeks, diſſolving readily in water are carried off by the winter rains; and when the ſpring arriving the plants begin to vegetate, a great part of what was deſtined for their nouriſhment has been waſhed away and loſt.

Farther, where fallows have been well wrought, and the ſoil thus completely reduced, mixing it with dung in that ſtate prevents it from acquiring a ſufficient degree of compactneſs to ſhelter the roots of the plants, eſpecially if the ſoil be naturally of a light open texture, and the dung full of half rotted ſtraw, as is commonly the caſe. The operation of the winter's froſt renders it ſtill looſer, ſo that in ſpring it is nearly in the ſtate of a mole-hill; the baneful effects of which to a wheat crop are obvious. Now were a portion at leaſt of the dung withheld till the ſpring, the land would be more compact, the plants leſs liable to be thrown out of the ground by the froſt, and the dung being applied as a top-dreſſing at the time when vegetation was commencing, the uſeful parts of the dung would be taken up by the plants, every time it was moiſtened, as the crop in its progreſſive growth moſt wanted it. In this mode of application no part of the dung would be loſt, and a leſs quantity being required for the dreſſing, three times the quantity of land might be dreſſed annually; and being applied in a quantity ſufficient only for the nouriſhment of the crop, the plants are fed in the ſame manner as the animal body, every ſmall doſe operating like a meal.

Some are of opinion that the firſt rank quality of dung is highly beneficial, and its principal virtue. Mr. Belcher on the contrary is inclined to think that it is more or leſs injurious, greatly ſo in horſe-dung, which is evidently unfit for plants when new. In his opinion the beſt mode of uſing all dung, except in compoſt, on cold ſtiff ground eſpecially, is to carry it on rough, and to fallow that and the ſoil together, whereby at the ſame time that they are incorporated, the ſeeds of weeds are forced into vegetation, and completely deſtroyed *.

The common practice is to ſet the dung upon the land in ſmall heaps or hillocks, and to ſpread it by a man ſtanding on the ground. In ſome of the Midland Counties the prevailing cuſtom is to ſpread it out of the carriage, as it is brought into the field, by a man or men ſtanding in the carriage †.

Dung ſhould never be moved in ſummer. The immediate action of the ſun's rays exhauſts it of its moiſture, and it is an erroneous idea that this evaporation carries off merely aqueous particles; the ſalts, the oils rendered miſcible with water by alkaline ſalts, or calcareous earth, and the inflammable air are all diſſipated with the water. To turn a dunghill over, then to throw it into carts, expoſe it in heaps, and to ſpread it a ſecond time in ſummer, is to give the ſun a power of nearly exhauſting its virtues ‡.

A Hertfordſhire farmer on the contrary never carries dung out to cheoſe in winter, thinking that the rains, &c. damage it much, but in ſummer he does not think its being expoſed to the ſun a detriment, ſuppoſing the heat to exhale only the watery particles. He has found one load laid on at Midſummer as good as two or three at Chriſtmas. The freſher the dung is uſed, the better he thinks it for any crop, even for graſs, provided it be laid on early in autumn. He has found long dung of only one or two months old to be better, load for load, than black ſpit dung for turneps. In forming a dunghill, he ſays the dung will not rot if the carts drive on to it, but if the dung be ſhot on of the carts by the ſide of the hill, and then thrown up, without any trampling, it will rot much ſooner and better. This alſo is the Norfolk practice §.

At whatever time the dung is carried on the land, it ſhould be ſpread and ploughed in as ſoon as poſſible.

It is ſaid to be a wrong practice to lay dung upon Clover-leys in autumn: for if the field be to remain another year in graſs, not only a part of the dung is waſhed away by the winter rains, but the remainder injures the plants; it being well aſcertained that the action of dung upon broad Clover, when the plants are not in a growing ſtate, is fatal to them. But in the ſpring a light top-dreſſing of dung is highly uſeful to broad Clover, though foot is preferable.

If the Clover-ley is to be ploughed for Wheat, and dung be laid on; if the graſs crop has been good, the furrow will be turned over entire, and the dung laid flat under it, and as the roots of the Wheat muſt penetrate through the ſod before it can reach the dung, little benefit can be expected from it, allowing the qualities of the dung to remain unimpaired: but in this caſe the loſs from the winter rains will be greater than when dung is laid on fallow; for there being incorporated with the ſoil, a part of the ſalts will be entangled with the earth; but upon ley, it is either laid in the bottom of the furrow, or if the ſod be ſet on edge, it remains crammed into the interſpaces through which the whole of the rain paſſes. Whenever Wheat therefore is ſown upon ley, the dung ought to be uſed as a top-dreſſing in the ſpring, when every part of the crop will have the benefit of it, and the harrows having looſened the top of the furrow ſo that the moiſture of the dung will readily enter it, no part of the dung will be loſt.

If the ley is to be ploughed for Oats, provided the land was well laid down, there is no occaſion for dung; but if the land be poor, and dung is required, it cannot be employed in any way ſo uſeful, as in the form of a top-dreſſing at the time when the ſeed is ſown.

Perhaps there is no way in which dung is uſed where its effects are ſo certain and viſible as upon Potatoes and Turneps. For Potatoes it is laid on when the ſpring is pretty far advanced, after which there are few heavy rains, of courſe the ſtrength of the dung is not impaired by waſhing, and the crop is left in quiet poſſeſſion of the whole of its fertilizing powers. For Turneps the caſe is nearly the ſame; indeed the advantage is ſtill greater, dung not being laid upon Turnep land ſooner than June, after which there is ſeldom much wet weather till autumn, and by that time the crop is in full vigour.

As to laying dung upon Meadows farmers differ in opinion: ſome preferring the ſpring, for producing an early vegetation and a plentiful crop; others thinking, that though dreſſings of ſoot and fine aſhes at that ſeaſon are of much uſe, yet that dung ought to be laid on at the end of autumn, not to take the juices of the enſuing crop.

It is thought to be a good practice by ſome to ſpread the dung as ſoon as the hay is cleared. If laid on in the winter, or early in the ſpring, the froſt will take effect upon the manure before the graſs can reap any advantage; and the rains coming waſhe the manure is expoſed on the ſurface, waſhes away its virtues before vegetation is awakened by the ſun. But in July, if there be any ſhowers, the quick growth of the after-graſs will ſhelter and protect the manure; and nothing is to be feared but a ſevere drought. In this caſe, however, this after-growth ſhould be left through winter, to be fed in the ſpring, when the value of ſuch feed will be great, and the dung, by means of ſuch a covering will be guarded againſt the froſt in the beſt poſſible manner ‖.

Mr. Miller, however, reprobates the dreſſing of Graſs ground in ſummer, ſoon after the crop of hay is taken off the land: becauſe before Michaelmas the ſun will have exhaled moſt of the goodneſs, if the dreſſing be of dung, or any other ſort manure.

[It is moſtly the cuſtom to collect manure of every

* Belcher MS. † Marſhall Midd. 2. 104.
‡ Y. Ann. 5. 132. § Young's Ann. 19. 289. ‖ Ibid. 16. 488.

deſcrip-

deſcription into one heap. Hence ſubſtances very oppoſite in their nature, and which may be wanted at different times and for different purpoſes, are laid together, and inſtead of forming a uſeful combination, perhaps prevent the dung from fermenting as it ought. Every farmer therefore ſhould have at leaſt two or three dunghills, to be prepared for uſe, according to the time at which the contents of each may be wanted, and the articles of which they are reſpectively compoſed.

If earth, moſs, ſhovellings of highways, &c. can be procured, the bottom of any dunghill compoſed of rank ſtable dung or ſhort exerementa dung may be laid three or four feet deep with theſe ſubſtances. This will increaſe the quantity of manure, for the moiſture that is preſſed out during the fermentation will ſink into the earth, &c. and impregnate it with its ſalts; and if the whole be afterwards turned and incorporated, what was laid in the bottom will be found of nearly equal value with the dung itſelf. See *Compoſt*.

Some diſtinctions are to be made reſpecting the different ſorts of Animal Dung.

Horſe-dung is more diſtinguiſhed for the readineſs with which it ferments, than for its intrinſic richneſs.]

Stable-muck, or horſe-dung mixed with ſtraw, properly fermented is of primary uſe in the kitchen garden, where it ſupplies the want of the ſun's heat in winter; affording at an early ſeaſon many eſculent plants which we could otherwiſe have only for a ſhort time in the middle of ſummer, and others which our moiſt and cold climate would not produce at all in any perfection. As Aſparagus, Cucumbers, Melons, Cauliflowers, Salad herbs, &c. &c. See *Hot Beds*.

Horſe dung is one of the beſt improvements for cold lands that can be procured in any quantity, yet alone, or when it is too new it is prejudicial to ſome plants; and if it be ſpread thin over lands in the ſummer time, it is of very little ſervice, becauſe the ſun draws out all the goodneſs of it, and it becomes little better than thatch or dry ſtraw. Although too much of it can ſcarcely be uſed in a kitchen garden, yet it may be a fault to lay too much on corn-land, becauſe it may be apt to make the corn run too much to ſtraw.

In very moiſt cold land crops will ſucceed better, if new horſe dung, as it comes from the ſtable, be buried in it, than if the ground be dreſſed with very rotten dung.

[Horſe dung, in a raw ſtate, is well calculated for Potatoes, becauſe it leaves room for the roots of that plant to ſpread. But if it be not fermented, it contains much undigeſted vegetable matter, and conſequently the ſeeds of many weeds which may have got into the food of the animal.

Cow dung is very uſeful for lean, dry, hot, ſandy or gravelly ſoils. The excrement of a ruminating animal is held to be preferable to that of horſes at graſs, owing to the quantity of animal juices mixed with their food in chewing: but ſince it does not contain much undigeſted matter it will hardly heat. The beſt way of managing it is to lay it together, and keep it moiſt till it is ſufficiently putrified.]

Being mixed with horſe dung it makes a good manure for moſt ſorts of ſoil, and with mud for ſome.

Sheep's dung and deer's dung differ not much in quality, and are eſteemed by ſome the beſt manure for cold clays. Some recommend them to be uſed as top-dreſſings to autumn and ſpring crops, four or five loads to an acre, in the ſame manner with aſhes, malt-duſt, &c. See *Folding* and *Top-dreſſing*.

In Flanders they houſe their ſheep at night in places ſpread with clean land, laid five or ſix inches thick, ſome being added every day, and the whole cleared out once a week. This mixture makes an excellent dreſſing for ſtrong, or cold ſtiff land.

[This method has been adopted in his Majeſty's farm at Windſor. In hard weather the ſtock is penned in a fixed fold, made large, and divided into two parts, pitched in ſome ſheltered ſpot, laid a foot thick with maiden earth, and daily littered with leaves, moſs, fern, ſtubble, &c. When the ſheep leave this fold, a layer of lime, chalk or peat aſh is put upon the top, and the whole being mixed together makes excellent manure for a Turnep crop. Six hundred loads of excellent compoſt have this been made in three months from ſix hundred ſheep[a].

In Holland Sheep's dung is carefully collected, cut into ſmall pieces, and ſold in baſkets at a high price.]

Hog's or *Swine's dung* is the fatteſt and moſt beneficial of all the animal dungs: one load, it is ſaid, will go as far as two loads of other dung. It is the beſt of all dungs for fruit-trees, eſpecially Apples and Pears in a light ſoil, and a very rich manure for graſs. Mr. Miller affirms that he has often uſed it to fruit-trees, when it was well rotted, and found it the moſt beneficial of any manure.

[In the opinion of Dr. Hunter, Swine's dung is the richeſt of the animal manures. It is commonly aſſerted that the dung is richer in proportion as the animal is fatter. Hence the ſuperiority of this dung. It is of an oily and ſaponaceous quality, and when applied with judgment is excellent for arable lands. It ſhould be uſed with caution on arable lands however, becauſe it is apt to be full of weeds.

Rabbet's dung appears, by an experiment of Mr. Arthur Young to be ſuperior even to that of Pigeons, and to laſt the longeſt[b]. But this experiment ſhould be repeated before we can give credit to what ſeems improbable.

Dung of Birds.

Pigeon's dung is certainly a rich manure, but not laſting; it muſt therefore be renewed the oftener. It is moſt applicable to cold and deep ſtiff land. Sometimes it is ſown upon wheat crops in the ſpring. It ſhould always be broke very ſmall, and ſown during moiſt weather, and if circumſtances will admit of its being harrowed in, ſo much the better. Poultry manure is of the ſame nature, and where it can be had in any quantity, is an excellent top-dreſſing, particularly for cold land. Columella ranks it next, in point of value, to the dung of pigeons.]

The dung of pigeons, poultry and geeſe, is alſo a great improver of meadow land; but before it is uſed, it ought to lie abroad ſome time, that the air may ſweeten it a little, and moliify the fiery heat of their dungs.

They ought to be dried before they are ſtrewed, being apt to clod in wet: and they ſhould be mixed with earth, ſand or aſhes, to keep them from clinging together, that they may be ſtrewed thin, being naturally very hot and ſtrong.

They are recommended as the beſt manure for Aſparagus, Strawberries, and any ſort of flowers; but for the latter they ſhould be be rotted and well mixed with earth.

They are ſaid to be good for trees whoſe leaves are apt to turn yellow: for this purpoſe they ſhould be ſpread an inch thick at the foot of the tree in autumn.

[Conſiderable quantities of valuable manure might be raiſed by thoſe who living near large commons keep great flocks of geeſe, if they were regularly houſed at night, and the place were littered with ſtraw, fern, ſaw-duſt, aſhes or ſand. The ſame advantage might be reaped by littering the places where other kinds of poultry rooſt. Every three or four weeks the places ſhould be cleaned out, and the dung laid in heaps to ferment, either alone or mixed with ſoil[c].

Human Ordure, *Night Soil* or *Privy Manure*, ſays Mortimer, is of all ſorts of dung the greateſt improver of land, eſpecially if mixed with other dung, ſtraw or earth to give it a fermentation, and to render it convenient for carriage. It ſells in foreign parts at a much greater rate than any other ſort of manure. In London it may be bought for 5s. a load.

Dr. Hunter affirms that it is the richeſt manure that can be introduced into the ſi-ld; that in Flanders they uſe it with great ſucceſs, either ſtrewed upon the land in the form of powder, or diſſolved in water and thrown on with a wooden ſcoop; but that it may be beſt prepared as a top-dreſſing by filling the pits of neceſſaries with earth or lime.

[a] Berks Survey. [b] North. tour 1. 129. Eaſtern tour 4. 341.
[c] Townley V. Ann. 1. 277.

In China and Japan wonderful attention is paid to faving this manure, which in thofe countries is preferred to all others, both on account of its richnefs, and its being free from weeds: infomuch that Chevalier Thunberg, the famous botanift, paffing through Japan with the Dutch embaffy, could fcarcely find any other plants in the corn fields but the corn itfelf. In thofe countries, the laws prohibit the wafte of human excrement, and every houfe has refervoirs for it, to the great annoyance of the traveller through their towns.

The illuftrious Swede's account of the procefs of manuring in Japan is worth tranfcribing. There is no part of the world, fays he, where manure is gathered with greater care than it is here, infomuch that nothing which can be converted to this ufe is loft. The cattle are fed at home the whole year round, fo that all their excrements are confined to the farm yards, and it is a common fpectacle to fee old men and children following horfes on the road with a fhell faftened to the end of a ftick, to collect the dung, which is carried home in a bafket. Urine is carefully collected in large earthen pots, which are funk in the earth here and there in different parts, not only in the towns but even befide the highways. The Japoncfe does not carry out his manure to be dried up in a fallow field by the fun, but gives himfelf the difguiting trouble of mixing up the various excrements of man and beaft, with water and urine, together with every kind of refufe from the kitchen: this he carries in two large pails into his field, and with a ladle pours it upon the plant, when it has attained the height of about fix inches, and receives the whole benefit of it, the liquor at the fame time penetrating immediately to the root. By this mode of manuring, and at the fame time by the farmer's indefatigable weeding, the fields are fo completely cleared of weeds, that the moft fharpfighted botanift would be fcarcely able to difcover a fingle plant of another fpecies among the corn*.

Mr. Young has found the effect of night-foil (from 160 to 320 bufhels on an acre) prodigious, trebling the produce on land unmanured: and he aflerts that in all the experiments he has made with this manure, he has found the refult almoft uniform. In a meadow lately laid down, and in very poor condition, two acres of the worft part being covered after hay-time with four waggon-loads of night-foil, unmixed with any thing and fpread directly, the herbage thickened furprifingly, and grew moft luxuriantly. The cattle, neglecting the reft of the field, were perpetually feeding on this part; fo that by autumn it was pared down like a fine green lawn, the other part being a dufky rough ragged pafture. The part of the field manured with night-foil continued excellent†.

How wonderful then does it feem that this manure has been fo neglected in moft parts of Europe, and particularly in England, where the greateft part of it is fuffered to run to wafte and poifon our rivers.

Lime thrown into the privy will make an excellent mixture with the excrement, and at the fame time take off the ill fmell and noxious vapours of it. Sawduft, peat-mofs, or any common earth will be highly ufeful in abforbing the urine. Lime will alfo render the excrement fo fhort and dry that it may be ufed as a top-dreffing.

Two cart-loads of ordure mixed with ten loads of earth and one of lime will be a fufficient top-dreffing for an acre, and is excellent upon light lands for wheat or barley: for the former of which it fhould be ufed early in the fpring; and for the latter it may be either fcattered upon the young crop, or harrowed in with the feed. It is particularly convenient for all drill crops.

Urine of every fort is found to be of great ufe when laid upon grafs or young crops early in the fpring. The moft convenient way of applying it feems to be in the form of a compoft, with earth and a fmall proportion of lime. In this fhape it is a good manure for moft foils, particularly fuch as are light, fandy or gravelly.

* Trav. vol. 4. † Annals, vol. 3 and 20.

Great quantities of this article might be faved, and judicioufly ufed would influre one or two good crops; about all farms and great towns it might be collected into refervoirs, with other excremental matters, without much trouble. In fome countries this is an object of police, efpecially in the towns, where refervoirs are eftablifhed for collecting it. The farmers carry it away in barrels, and either fpread it immediately upon their fields, or mix it into compoft*.

Mortimer obferves, that if Urine be deftructive to vegetables, it is the indifcreet ufe of it in too large a quantity; and that there is nothing which will improve land, or increafe the ftrength of manure, or help the fermentation of dung more than urine: for which reafon in Holland, they are as careful to preferve this as dung; and Mr. Hartlib in his legacy commends it as a great improver of land.

No ftable ought to be without a barrel or ciftern funk at the extremity of the paved channel into which the urine runs.

The rich juices of dunghills, fays Mr. Belcher, ought to be ftrictly attended to; for which purpofe layers of lime, chalk or its rubbifh, fhould be fpread under the litter in the farm-yard. Thefe are better than earth, which is apt to be poachy, unlefs of a very dry nature, fomething however fhould be laid to abforb the urine†.

The rich product, fays Mr. Young in one of his experiments, which attends the addition of urine to dung, affords a very important leffon; which is, to manage dunghills in fuch a manner, as to fave, if poffible, every drop: this is a point too much neglected, and indeed by moft common farmers very little attended to‡.

Bones, *Horns*, *Hair*, *Wool* and *Feathers*.

Bones are ufed as a manure, both by themfelves, and with other fubftances. The common way of treating them, is to break them with a mill, into pieces about the fize of a marble or nutmeg; they are afterwards laid upon the field in fmall heaps, at regular diftances, and covered with earth; after remaining in this ftate for fome time, they are fpread on fallows, on grafs, or on turnep land.

The conftituent parts of bones are oil, alkaline falts, and animal earth, united by fixed air. The oil is in much greater proportion than the alkali, which renders bones rather a heavy manure.

It does not appear that much pains is taken in adapting them to the foil for which they feem beft calculated, being laid indifcriminately upon lands of every defcription, and for the moft part unmixed with any other fubftance. But bones, being kept together by fixed air, unlefs they are either laid upon foils poffeffing principles that are capable of depriving them of this air, or have fomething of that kind previoufly mixed with them, the texture of their parts will remain unbroken, and they will be of little ufe. In Hertfordfhire however they are found to be an excellent manure for clay foils.

To render bones ufeful they fhould be ground as fmall as poffible. At Sheffield it is a trade to grind bones for the farmer, who will give 16d. a bufhel and fend fixteen miles for them. Some fubftance muft then be mixed with them that is capable of diflodging the fixed air, and diminifhing the principles contained in the bone. For this purpofe nothing will be found fo ufeful as quick-lime. Where there is no opportunity of grinding them, they may be mixed with lime in a heap, and will thus foon be reduced to powder. It is alfo a judicious practice to mix afhes with them; a cart-load to thirty or forty bufhels of bones, turning the whole when it has heated twenty-four hours, it may be laid on ten days afterwards.

Bones are fometimes burnt for the afhes, in this operation they are freed from the oil and mucilage, and are merely phofphoric acid united to lime or phoafate of lime: in this ftate they are merely a ftimulating manure. In their unburnt ftate they are both nutritive and ftimulating. Of all manures bone is

* Report on manures, 55. † Young's Ann. 2. 401.
‡ Ann. 9. 614.

perhaps the moſt permanent. What is here ſaid of bone in its recent and burnt ſtate, applies to horns, hoofs, wool, feathers and hair; like bone they conſiſt of phoſphate of lime, animal oil and mucilage.

When bones are uſed in their ſimple ſtate, without the addition of earth or lime, they ought never to be laid upon any but the ſharpeſt and moſt active ſoils; ſuch as limeſtone chalk or gravel: upon all theſe they will meet with more or leſs calcareous earth, which will in ſome degree diſengage their fixed air, and diſſolve the oil contained in them; but upon deep clays, tills or loams, they ſhould never be applied in that ſtate.

But when made into a compoſt, they may be applied with advantage upon ſoils of every deſcription, by laying it upon or near the ſurface, when the crop is in a growing ſtate. Upon wheat it ſhould be uſed early in the ſpring without harrowing; upon barley and oats it may be harrowed in along with the grain.

For drill crops, ſuch as turneps, beans, &c. they are particularly convenient, as they admit of being put into the drill at the ſame time with the ſeed, more readily than moſt other manures.

Dr. Hunter of York having laid down to graſs a large piece of very indifferent limeſtone land with a crop of corn, ſelected three roods, which he dreſſed with bones broken very ſmall, at the rate of ſixty buſhels to the acre. The crop of corn was greatly ſuperior to the reſt. The graſs next year was alſo ſuperior, and has preſerved the ſame ſuperiority ever ſince, inſomuch that in ſpring it is green three weeks before the reſt of the field.

He dreſſed two acres with bones in two different fields prepared for turneps, ſixty buſhels to the acre, and found the turneps greatly ſuperior to the others managed in the common way.

He dreſſed an acre of graſs ground, with bones, in october, and rolled them in. The ſucceeding crop of hay was an exceeding good one. However he has found from repeated experience, upon graſs ground, that this kind of manure exerts itſelf more powerfully the ſecond year than the firſt.

He recommends the bones to be bruiſed by putting them under a circular ſtone moved round upon its edge by means of a horſe, in the manner that tanners grind their bark.

To aſcertain the comparative merit of ground and unground bones, he dreſſed two acres of turneps with large bones in the ſame field where the ground ones were uſed. The reſult of the experiment was, that the unground materials did not perform the leaſt ſervice, whilſt thoſe parts of the field on which the ground bones were laid were greatly benefited.

All kinds of bones will anſwer the purpoſe of a rich dreſſing, but thoſe of fat cattle are the beſt. The London bones are frequently boiled, and muſt therefore be much inferior to ſuch as retain their oily parts.

Mr. Young however, in his experiments on manures, ſays that the effect of the London bones was ſo very great, that he bought all he could get at 10s. 6d. a waggon load of ninety-ſix buſhels in London. With a dreſſing of twenty-five cart loads the crop was ſuperior to that which had fifty. The land was a miſerable toil, which with a ſummer fallow yielded but thirty buſhels of wheat; but with a moderate manuring of bones yielded ſixty-three buſhels.

On barley he obſerves, that bones hold a moſt decided ſuperiority, and that expenſive as they are, they pay very amply.

Horns of every kind are an uſeful manure when cut into ſmall pieces; in their natural ſtate they produce little effect. The proportion proper to be employed varies with the ſize of the clips or ſhavings; fewer being neceſſary when ſmall, but the effect of the larger are longer felt. If they are of a middling ſize, about ſixty ſtones to an acre is a reaſonable quantity. It more be uſed, the grain is apt to be too luxuriant, and too long in ripening; it is alſo liable to be hurt by mildew.

The ſmall pieces are chiefly turner's ſhavings, are bought in London at 12s. or 15s. the quarter, and are much the moſt uſeful. The large ones are refuſe pieces of horn, coſt about 2s. leſs the quarter, and are generally ploughed in three months before ſowing wheat or barley. They both anſwer in moſt ſoils and ſeaſons, except very dry ones.

Hoofs are of the ſame nature with horn, and anſwer the ſame purpoſe.

Hair is likewiſe uſed with much the ſame effect. Hog's hair is ſometimes to be had in London at about 9s. the quarter.

Wool cannot well be applied as manure in its native ſtate; but very well after it has been wrought into cloth. See *Refuſe of Manufactures*.

Feathers would be a good manure, if they could be had in any quantity. A field being ready for ſowing wheat, one acre was manured with ten buſhels of old feathers procured from an upholſterer, ploughing them in as they were ſpread: the acre thus manured produced near forty-eight buſhels, and the other part of the field not twenty-eight buſhels on an average[a].

Fish, ſays Evelyn, is ſpread to great advantage on grounds, and for being quickly conſumed, may ſooneſt be applied. It is matter of ſurprize, ſays his annotator, that this hint given in 1675, ſhould have operated ſo little, that at this time (1778) the uſe of refuſe fiſh is hardly known. It is common however in Cornwall to manure with pilchards; about Leoſtoff with herring-ſcales; and whole barge-loads of ſticklebacks are ſometimes brought to Cambridge, and bought up by the farmers to lay upon their lands, as the whole neighbourhood can witneſs for a time from the intolerable ſtench with which they ſalute the noſtrils of the traveller.

The offal of fiſh would be worth attending to, eſpecially when they are cured in conſiderable quantities, as at Yarmouth, &c.

The proper way of uſing fiſh and its offal is to make it into a compoſt with other ſubſtances, particularly lime or chalk. Lay the fiſh in heaps for eight or ten days, till it begins to corrupt; then mix it with earth; in a fortnight turn the heap, and add one part of lime to three of fiſh; let this remain a month, turn it, and add as much earth as is equal in quantity to the whole heap of fiſh and lime.

Such a compoſt will be an excellent top-dreſſing for any crop. For wheat, early in the ſpring; for barley, either harrowed in with the ſeed, or applied upon the young crop. It is uſeful for drilled crops.

All *Recent Animal Subſtances*, as blood, and the whole refuſe of ſlaughter-houſes, ſhambles, &c. afford a very rich manure. Mixed with earth and freſh horſe-dung they make a very rich compoſt. Blood mixed with ſaw-duſt makes a good land-dreſſing to be ſown upon wheat in the ſpring. Blood is often recommended to be buried at the roots of fruit trees.

All *Putrid Animal Subſtances* are good manures if properly managed: when uſed alone they ſhould always be laid upon the moſt active ſoils, ſuch as chalk, limeſtone, &c. Upon ſtrong clays or deep loams they ſhould only be uſed in form of a compoſt.

The moſt proper way of preparing them for uſe, is to mix them with chalk or quick-lime, the mixture ſhould be laid in heaps of three or four cart-loads each, and covered with earth; after remaining in this ſtate for eight or ten days, the heap ſhould be turned over, and ten cart-loads of earth added to each cart-load of the mixture. It ſhould then remain for a month in the heap, and then may be applied as a top-dreſſing, or harrowed in with the ſeed.

All kinds of animal ſubſtances, when well digeſted and putrified, are the moſt powerful promoters of vegetation. In this ſtate almoſt the whole becomes volatile, and is ſo far attenuated, ſubtilized and refined, as to be rendered capable of entering the veſſels of the minuteſt plants. Inſomuch that it appears to ſome, that as the animal kingdom is ſupported by the vegetable, ſo the vegetable is by the animal; and that each is reciprocally the ſupport of, and is ſupported by the other[b].

[a] Bath papers, 1. 130. [b] Ibid. 3. 174.

REFUSE OF MANUFACTURES.

Under this head a variety of articles may be enumerated:

Fellmonger's cuttings or *Pooks*, uſed in Surry and Kent and about Dunſtable. Compoſed of ſheep's trotters, hair, ſcrapings of the pelts, lime, &c. There are two ſorts, the white and the brown; the white is much the beſt, having more oil, lime and hair in it, but they are both good, and go farther in dreſſing land than almoſt any manure, in the proportion of four to one. About Dunſtable the price is 6d. a buſhel, and they uſe from twenty to forty buſhels an acre.

Furrier's clippings, bought in London at 12s. or 13s. the quarter, weighing about two hundred weight and a half. They are ſown by hand from the feed-ſcuttle on land intended for wheat or barley, and immediately ploughed in; the pieces that are left above ground are pricked in by a ſtick, to prevent their being devoured by dogs or crows. From two to three quarters are uſed on a ſtatute acre. They anſwer well on light dry chalk or gravelly ſoils, where they hold moiſture, and help the crop greatly in dry ſeaſons.

Refuſe of Hair manufactures.

Horn ſhavings. Already mentioned.

Glue-maker's refuſe. A very ſtrong manure.

Rags. Woollen rags in London are from 3s. 6d. to 4s. 6d. the hundred weight (in Berkſhire about 5s.) or about 4l. 17s. the ton. Being generally in large pieces they are chopped ſmall, about an inch or two ſquare. They are ſown by hand, and ploughed in three months before ſowing wheat or barley, and the quantity uſed is from ſix to ten hundred weight on a ſtatute acre. If with dung, three hundred weight.

Mortimer ſays they are a great improvement of chalky binding lands; that in his time many loads were fetched from London to Dunſtable; that they coſt 4d. a buſhel in London; that they chopped them ſmall and ſowed them juſt after the ſowing of the corn, allowing four ſacks (of ſix buſhels each) to an acre.

Woollen rags hold moiſture, and are adapted to dry, gravelly and chalky ſoils; and ſucceed in dry ſeaſons better than moſt manures; but do little good on wet ſoils. London rags are beſt; but the danger of catching the ſmall-pox in chopping and ſowing them deters many farmers from their uſe.

In Berkſhire they are uſed for dreſſing wheat and clover-leys, and even upon light ſoils produce abundant crops. They are ſaid to produce very ſenſible effects five or ſix years after they are laid on, and to be better the ſecond or third year than the firſt.

In Northamptonſhire they are found to anſwer well as a preparation for barley.

Scrapings of oiled Leather.

Shoemaker's Chips.

Soaper's Aſhes, Soap-boiler's Waſte, or Aſhlep is much commended as a manure both for corn and graſs by Sir Hugh Plat. It contains fifty-ſeven in the hundred of mild calx, eleven of magneſia, ſix of argil, and twenty-one of ſilex.

The effect on cold ſward is ſaid to be very great. Mortimer ſays, he was told of one by Ware, who had a piece of land run over with broom and furze, which he manured with ſoap-aſhes, and ſowed ſix years together with wheat, and had incredible crops. An Eſſex farmer, in the Bath papers (1. 129.) informs us, that in april he top-dreſſed half a field of clover with ſixty buſhels to the acre of this manure, and that this half produced near double the quantity of hay that the other did. He alſo uſed it with great ſucceſs on cold wet ſpongy meadow-land. It apparently dried it, and made it produce much greater crops of graſs.

Sugar-baker's ſcum. To be had from 5s. to 7s. 6d. a load.

Tallow-chandler's refuſe, called *Graves*.

Refuſe of Potteries, as a top-dreſſing for graſs, on a clay ſoil. The riddlings of half-burnt coals and earth from the kilns: which would have nearly the ſame effect as common coal-aſhes. Worn-out moulds of plaiſter of Paris powdered, might anſwer as gypſum.

Refuſe of Alum-works; called *Slam* in Yorkſhire. Uſed with ſea-weed, lime, &c. to make a compoſt.

OIL, *Oil-cake* or *Rape-cake* and *Oil-Compoſt*.

Freſh oil alone, ſo far from being a manure, is a poiſon to vegetables. Mixed however with lime or alkaline ſalts it becomes the richeſt of manures, being thus made miſcible with water. Or made to putrify with animal or vegetable ſubſtances, it will become a manure.

Oil-cake or Rape-cake has long been uſed as a manure in Norfolk. Being ground, or broken into ſmall pieces, it is ſown by hand out of a common ſeed-box, upon the laſt ploughing but one of a ſummer-fallow for wheat. Alone it anſwers beſt on chalky and limeſtone ſoils; on heavy loams and clays, much of it will remain inactive, unleſs it be mixed with lime, &c. If it be intended for a hand-dreſſing, ſix parts of rape-duſt and one of lime will make an excellent compoſt, for ſoils of every deſcription. The lime ſhould be mixed with the rape-duſt at leaſt ten days before it is uſed, and turned every day. It may thus be applied to wheat as a top-dreſſing in the ſpring.

On calcareous ſoils it may be uſed without lime. On thin limeſtone at a diſtance from dung this is an invaluable manure, at the rate of three quarters an acre for barley, and four for wheat, ſown by hand, and harrowed in with the grain: if rain fall within a week or ten days after ſowing, the crop is generally good; but if no rain fall till long after, it is but little benefited by this expenſive dreſſing; nor is the crop of the ſucceeding year benefited by it.

The price of this manure advancing ſo much in price as to render it doubtful whether it will anſwer to the farmer, Dr. Hunter has invented an oil-compoſt that comes cheap, and is of eaſy carriage. It is made of American pot-aſh, twelve pounds broken into ſmall pieces, and put into a convenient veſſel with four gallons of water. When it has ſtood twenty four hours, add of coarſe train-oil fourteen gallons. In a few days the ſalt will be diſſolved, and the mixture upon ſtirring will become nearly uniform. Then take fourteen buſhels of ſand, or twenty of dry mould; upon theſe pour the liquid ingredients. Turn the compoſition frequently over, and in ſix months it will be fit for uſe. The above quantity is ſufficient for an acre.

For the convenience of carriage no more earth is here directed to be uſed than will effectually take up the liquid ingredients. But if the farmer chooſes to mix up the compoſt with the mould of his field, he may uſe a larger portion of earth, by which means he will be enabled to diſtribute it with more regularity upon the ſurface.

This oil-compoſt is only intended to ſupply the place of rape-duſt, ſoot, woollen rags, and other expenſive hand-dreſſings. It is in all reſpects inferior to rotten dung; where that can be obtained, every kind of manure muſt give place to it. For at the ſame time that dung affords nourithment, it opens the pores of the earth: whereas hand-dreſſings give food to plants, but contribute nothing towards loofening the ſoil. This is an uſeful and practical diſtinction.

How different is the language of the philoſopher from that of the empiric, whoſe noſtrum is adapted to all caſes and purpoſes, and is ſuperior to all others in every thing!

Dr. Hunter recommends it, but with the diffidence of a true philoſopher, who depends ultimately upon experience, to be ſown immediately after the grain, and both harrowed in together.

He thinks it will anſwer beſt for winter crops: for from the unctuouſneſs of its nature it is more than probable that it ſhould lie expoſed for a long time to the influence of the weather; which benefit it is deprived of when uſed for barley, and ſuch crops as are ſown late in the ſpring. For this reaſon the compoſt upon turneps has proved generally unſucceſsful: but then thoſe parts of the field on which it had been ſpread produced the beſt crops of grain the following year. From this ſlow manner of giving out its virtues, it ſeems to be an improper dreſſing for all plants that have a quick vegetation.

Georg. Eſſays. 2

All lands that have been exhauſted by frequent crops, are robbed of their oily particles, and thus become barren. The oil-compoſt, by plentifully reſtoring particles ſimilar to thoſe which have been carried off, ſhould ſeem to be a proper reſtorative. To lands under ſuch circumſtances, lime is the worſt manure that can be applied [x].

Dr. Hunter has followed up his theory with experiments. For corn and horizontal feeders he recommends it to be ſown upon the ſurface with the hand: for cabbages, hops, beans, carrots and all tap-rooted plants, it is beſt to be worked into the ſoil by the plough or ſpade. When diſtributed upon the ſurface it is ſoon meliorated by the action of the air, rains and dews: but when worked into the ſoil it is deprived of thoſe neceſſary influences.

Some injudicious enquirers have placed a handful of the compoſt cloſe to the roots of a cabbage plant: hence death or a feeble vegetation enſued; and an argument was raiſed againſt the nutritive power of the compoſt. Lime, the aſhes of burnt vegetables, ſtale urine, gooſe and hog dung, when improperly applied, are all poiſons [y].

Chriſtopher Baldwin, Eſq. of Clapham-park, Surry, purchaſed ſixty gallons of the bottoms or foots of oil, and a rich thick South Sea whale oil at 14d. the gallon; and having made a bottom of twenty loads of mould, with eight loads of dung on it, he carried on three loads of light ſandy mould, and one load of brick and mortar rubbiſh ground fine; having mixed theſe well, he made a kind of diſh of it about five feet wide and ten feet long; into this he put half the oil, in auguſt: the heat of the ſun ſoon made the thick oil ſink into the compoſt, when it was directly thrown up into a heap, broke down again, and by five or ſix turnings well mixed together, and left in a heap two days, when it was ſpread equally over the whole dunghill; twenty loads more of good mould were then carried on, eight loads of dung, and the remaining thirty gallons of oil were mixed as before in ſandy mould and mortar rubbiſh, and equally ſpread over, and the whole was covered by trimming the four ſides of the dunghill, and throwing it on the top.

Thus it lay more than two months, when it was cut down by mattocks, carefully broke, well mixed and turned over. The end of march it was carried on a five-acre field, ſpread and ploughed in: it lay a fortnight, the land was then ploughed again, and on the 22d of april the field was drilled with barley, two buſhels to an acre. The crop was ſixty buſhels on an acre, of the beſt quality: five quarters were ſent into Norfolk for ſeed-barley, under the denomination of fifteen coomb barley; and it weighed 220lb. the ſack, or 55lb. the buſhel, Winchester meaſure.

This barley followed oats upon a lay of ſix years old. The oats ſuffered much from the wire worm, which this manure completely deſtroyed; the barley not ſuffering from it in the leaſt.

Mr. Baldwin uſed this oil-compoſt with ſucceſs on ridges of ſummer cucumbers, and on cabbages [z].

Mr. Baldwin had not the ſame ſucceſs in Hampſhire on a ſix-acre piece of ſtrong land, with large ſtones, very poor, that had never been dunged. Five acres were chalked and the whole was ſown with oats. December following it was ploughed. In january the oil-compoſt was carried on that part of the field which had not been chalked, and over half an acre of the chalked part; the remainder was dunged. In february it was ploughed; and in march drilled with hog peaſe. The chalked part was the beſt; the unchalked part, where the oil manure was put, though good, was not to compare to the chalked part: and the half-acre chalked and oiled, appeared no better than the dunged part [a].

Dr. Wilkinſon of Enfield uſed Dr. Hunter's oil-compoſt, as a top-dreſſing, in ſpring, on two acres of wheat, the ſoil a pebbly loam on a gravelly ſubſoil, very poor, and never remembered to have borne a crop of wheat. The produce however was nearly three quarters to an acre. The ſtraw was ſhort and light, but the ear was full and heavy. The quantity of manure to an acre was 12lb. of pot-aſh diſſolved in four gallons of water, and mixed with twenty buſhels of dry mould, and fourteen gallons of train oil.

This gentleman tried the ſame quantity of this manure on two acres of turneps; the ſoil a wet loam on a clayey bottom. It was all dreſſed with twelve loads an acre of rotten dung. When the turneps were ſown, the two acres had an additional covering of the oil manure. The whole crop ſuffered from the fly, but the part where the oil had been laid recovered the ſooneſt. The two acres retained their ſuperiority, and the eye could eaſily trace where the oil had been laid by the more luxuriant vegetation [b].

A Norfolk gentleman farmer recommends an oil-compoſt of materials different from Dr. Hunter's. Of rape or train-oil ſix gallons. Sea-ſand ſix buſhels. Coarſe ſalt two buſhels. Malt-coombs twenty-four buſhels. Spread the coombs on the floor four inches thick; ſprinkle the ſalt level; throw on half the quantity of ſand, and half the quantity of oil out of a watering-pot; turn it and rake it well: add the reſt of the ſand and oil; turn it well till thoroughly mixed, and then throw it in a heap for uſe. The ſand and ſalt not only occaſion it to imbibe the oil more freely, but give it a better body for ſpreading on the land [c].

Sea Weed, *Ware* or *Ore*, is uſed as a manure upon almoſt every part of the coaſt where it can be obtained in ſufficient quantity. In ſeveral parts of the kingdom the value of land has increaſed ſix-fold from the circumſtance of the proprietor or occupier having eaſy acceſs to it. Upon lands ſituated on a dry lime-ſtone bottom, it has produced the moſt ſurpriſing effects.

The ſea-weed commonly uſed in Scotland is of three different ſorts. The beſt is that which is cut from the rocks, and of which kelp is made. The ſecond is called the peaſy ſort. The worſt is that with a long ſtalk. The common practice is to ſpread the weed immediately after it is brought from the ſhore, either upon the ſtubbles or graſs lands. When laid upon the ſtubbles it is generally ploughed in as ſoon as poſſible. Farmers who can uſe it freſh do not lay it in heaps to ferment, becauſe a load of freſh ware will be of more ſervice freſh than two loads laid in a heap to ferment.

In moſt caſes ſea-weed may be conveniently uſed in this way, for where a farm is under a proper rotation there will always be ground to lay it upon. During the winter months it may be put upon the ley and ſtubble fields, in the ſpring upon the bean and barley lands; during ſummer the fallows will require all that can be collected; and by the time theſe are ſufficiently manured, the clover fields after the firſt cutting will be ready to receive the remainder; through the autumn the ſtubble fields will require all that can be collected. Thus throughout the year this valuable manure may be uſed as ſoon as it is thrown upon the beach, and experience proves that its greateſt value is in that ſtate.

If however more weed is thrown out than can be conveniently uſed, it is an object of importance to preſerve its qualities as much as poſſible. This is beſt done by making it into a compoſt with earth and a ſmall proportion of lime. If the quantity of earth be great enough to abſorb and retain the juices and ſalts of the ſea-weed, the proportion of lime moderate, the whole well incorporated and protected from heavy rains, it will be found nearly as valuable as in a freſh ſtate.

After the compoſt is properly mixed lay it up in form of a ridge with a pretty ſharp angle at top, covered two or three inches with earth, well beat with the back of a ſpade, and defended from the rains with ſtraw.

This compoſt will be found a good dreſſing for young crops of every deſcription, and may be uſed either at the time of ſowing the grain, and harrowed in along with it, or after the plants have made ſome

[x] Georg. Eſſay, p. 32, 35, 36. [y] Ibid. p. 4.
[z] Young's Ann. 15. 502. [a] Ibid. 15. 350.
[b] Young's Ann. 15. 341. [c] Bath papers, 1. 149.

progreſs.

progreſs. Upon wheat it ſhould always be uſed to the young crop early in the ſpring. Upon rich deep land it is bad huſbandry to lay ſea-weed or indeed any heavy rich manure; lime, chalk, ſhells, &c. are the proper ſubſtances. This manure ſeems peculiarly adapted to lands that have been hurt by over-liming; the bad effects of which it will more readily correct than any other except oil and animal ſubſtances.

In the neighbourhood of Berwick ſea-weed is uſed in their compound dunghills, with fold-yard dung, ſtable-dung and earth; and thus an immenſe quantity of manure is produced by ſuch farmers as are ſituated near the ſea. Such as uſe the ſea-weed properly, have their lands in ſuch heat as ſeldom to have occaſion for a fallow. This ſpecies of manure is found to be excellent for gardens, as it not only enriches the ground, but alſo deſtroys all kinds of inſects [d].

Sea-weed is much uſed on the coaſt of Norfolk and the eaſtern coaſt of Kent. It is mixed with dung and mould, and after turning ſeveral times over, ſpread on corn land [e].

Much ſea-weed is collected in the Iſle of Thanet at a conſiderable expenſe for manure, which is generally put between layers of dry farm-yard dung and hedge-mould: the moiſture from the ſea-weed contributes to the well rotting of the mafs, and has been the means of making poor barren chalky lands produce excellent crops of barley, ſeeds and wheat. The farmers are ſo very attentive to get the weed the inſtant it comes on ſhore, that the men and carts go in the middle of the night to fetch it up the gate way; and ſometimes even leave off all hands in the height of harveſt to get it, when it comes aſhore at that time [f].

In Cornwall, ſays Mortimer, is a weed called *Ore-weed*, which grows upon rocks under high-water mark, and ſome is broken from the bottom of the ſea by rough weather, and caſt upon the ſhore by winds and floods, with which they improve their barley lands.

Sea-ore being laid on a field, which from its ſterility had obtained the appellation of Starve-lark, in the month of march, it was immediately ploughed and ſowed with oats: the produce exceeded five quarters on an acre. It was ſown again, and the crop of oats exceeded any thing that had ever been ſeen on the land [g].

Ore is probably the ſame word with *Ware*, which being pronounced as we commonly do the word *War*, is not very different from *Ore* or *Orr*.

River Weed. In ſummer great quantities might be gathered, in lakes, in rivers where the water is deep and has no current, and in all wet ditches. Its effects upon wheat and other grain, as well as upon turneps, cabbages, and other green crops are well aſcertained. It may be laid on the land green and ploughed in, or it may be mixed with earth and dung.

The beſt way of preparing it for manure is to let it lay in ſmall heaps for a day or two, to drain off the ſuperfluous moiſture. It may then be put into large heaps of three or four cart-loads each till the fermentation is over; each heap ſhould then have three times the quantity of earth or mud mixed with it. Incorporate them well, and let them remain for a week or ten days; turn them, adding at the ſame time a quantity of hot new-ſlacked lime. This compoſt will be ready for uſe in a month.

Mortimer ſays, that *Snad-ced* or *Snag-gret* lies frequently in deep rivers, and is full of little ſhells; one load of which is reckoned as good as three loads of dung.

I take this to be what botaniſts call *Chara*.

A conſiderable quantity of river-weed being laid on the bank to drain and ferment, ſhrunk to one-third of their firſt bulk, and underwent a high putrefaction, breeding an amazing variety and multitude of inſects. In this ſtate they were carted on two ſmall pieces, together about two acres and a half, that had been folded for wheat. The crop on that ground had evidently the ſuperiority in groſſneſs and colour. Cattle were fond of eating them [h].

[d] Georg. Fil. 4. 207. [e] Bath papers, 1. 209.
[f] Young's Ann. 19. 84. [g] Ibid. 7. 39. [h] Ibid. 8. 32.

River-weeds being put in to every furrow that was at the next turn filled up by the plough, on one acre of a piece deſigned for turneps; by the moiſture and fermentation of the weeds the ſeeds vegetated much ſooner than on the reſt of the field, which was manured in the common way. They alſo grew quicker, and were ſuperior both in the ſize of the roots and luxuriance of the leaves, ſo as to render the ſpot very conſpicuous in the field. But in the ſucceeding crop of barley there was a manifeſt inferiority in this piece to the reſt of the land.

River-weeds being ploughed in at the end of october on part of a peaſe ſtubble, and wheat ſet by hand upon it, the whole field was a good crop, and the part on which the weeds were laid not at all inferior to the reſt, on which ſtable-dung had been ſpread in the uſual mode [i].]

Other Weeds.

Rotten vegetables of moſt ſorts will enrich land. Not only the weeds of ponds, lakes, rivers or ditches, but any other ſorts of weeds, laid in heaps to rot, will make good manure: ſuch as the weeds that too frequently diſgrace the headlands and balks of arable lands, commons, &c. the refuſe of kitchen gardens, &c. Whenever any weeds are uſed for the purpoſe of manure, they ſhould be cut down as ſoon as they begin to flower; for if they are ſuffered to ſtand till their ſeeds are ripe, the land will be ſtored with weeds, which cannot eaſily be deſtroyed: nay ſome kinds of weeds, if they are permitted to ſtand ſo long as to form their ſeeds, will perfect them after they are cut down. The ſureſt method therefore is to cut them juſt as they begin to flower, when they are in the greateſt vigour, and fuller of juice than when they are farther advanced. In rotting theſe weeds, it will be proper to mix earth or mud with them, to prevent their taking fire, as they are apt to do when laid in large heaps. When they are well rotted, they form a ſolid mafs, which will cut like butter, and be very full of oil.

Fern mowed whilſt it is green and tender, and laid in heaps to rot, will make a good manure. [Or it may firſt ſerve the purpoſe of litter in the ſtable or yard, and thus increaſe the quantity of dung.

This, with thiſtles and other large weeds, may be laid in heaps and burnt to great advantage; the aſhes being an excellent top-dreſſing for any crops.

Mud whether from the ſea, rivers or ponds is an excellent manure on any ſoil, both alone, and with lime, &c. Its greateſt value is upon thin ſoils, the fertility of which it increaſes amazingly, at the ſame time adding to the ſtaple of the land.

All manner of Sea-Ouſe or Ouſe mud, ſays Mortimer, and the mud of rivers, lakes, or the bottom of ditches, the waſh of paſtures, fields, commons, roads, ſtreets, or back-ſides in any place where water meets with reſt, or that rain-water has a long time ſettled, or that links run into, are of very great advantage to all ſorts of land, eſpecially dry gravely or ſandy, and are mixed with dung.

The ſcouring of old ditches, the mud of ponds, and the ſediment of all ſtagnant waters are particularly excellent upon graſs land. Maiden earth, with one-ſeventh of lime, and another ſeventh of rotten dung, added to it, will make it very proper manure for moſt kinds of paſture [k].

Mud ſhould not be laid on freſh, or as ſoon as it is dry, but it ſhould be well turned over and fermented with dung, or mixed with lime, to make the ſeeds in it vegetate, or to deſtroy their vegetation. Innumerable ſeeds fall or are carried into the water, ſink to the bottom, and not being aquatics, if they have much oil in them, are embalmed in the mud for years or ages, to vegetate whenever they ſhall happen to come within reach of the atmoſphere in a proper matrix.

It may be dug between hay time and harveſt, and either made into a compoſt when dry, or being turned over and levelled, and expoſed to a winter's froſt, may be dug in ſpring and planted with potatoes.

[i] Bath papers, 3. 285, ſee 2. 328. and 3. 237.
[k] Kent's Hints, 77.

When

When this crop is cleared, it may be carted upon paſture, and will produce a luxuriant crop of graſs [1].

In Yorkſhire and Lincolnſhire they have what is called Warp land, or lands enriched with the ſediments of rivers or arms of the ſea, when the banks are overflowed. This generally takes place in the winter or early in the ſpring: they cannot therefore ſow wheat, but great crops of ſpring corn are raiſed.

In Cheſhire, the ſoil depoſited at the extremity of ſalt-marſhes, commonly known there under the name of *Sea-ſludge*, after it has been graſſed over for a few years, is ſaid to be the moſt productive and laſting of any ſort of manure, containing all the ſtrength of marl and the richneſs of black dung.

Many of our river's mouths would doubtleſs ſupply, in an inexhauſtible abundance, a ſaponaceous ſilt impregnated in ſome degree with ſalt, which would be an admirable manure [2].

Sweeping of Streets.

This is a mixture of moſt ſubſtances valuable in agriculture, and needs the aſſiſtance of fermentation leſs than any of them to render it fit for uſe; being made up principally of the offal of houſes, dung of horſes and cattle, aſhes, &c. It may be either ploughed in as dung, or uſed in the ſpring to invigorate wheat that is weak from not having been ſufficiently manured or from any other cauſe. It may be employed in general as a top dreſſing, or put into the furrow with drilled crops.

Sweepings of Roads.

The dung and ſand ſwept up, or dirt ſhovelled up on turnpike roads, would make an excellent manure, and at the ſame time remove a great annoyance to travellers. Where roads are made with limeſtone, this manure will be particularly valuable; and where they are made with flints it anſwers for graſs land.

Rubbiſh of Buildings, Walls, &c.

The backs of ditch-banks, the borders of fences in general, the ſides of lanes, and the nooks of yards, &c. &c. which are ſuffered to remain, from generation to generation, the nurſery of weeds, turned up into ridges, to rot the roots, &c. make an excellent manure. As does alſo the rubbiſh of old buildings, called in Norfolk *merryin*. Sea-ſtone walls afford a great quantity of this valuable article; which, from its immediate effect and duration jointly, is conſidered by ſome as ſuperior to marl, mould, or even dung itſelf, eſpecially upon ſcalds and hot burning ſoils. It is ſometimes mixed with dung, but more commonly ſet on alone [3].

The rubbiſh of old lath and plaſter buildings is incomparable manure for clover leys or graſs lands two loads to an acre. It is ſaid to laſt twenty years [4].

Lime-rubbiſh is uſed by gardeners to bottom gravel-walks, to mix with earth for tulips, &c. and to plant vines and figs.

Mud or earth walls acquire conſiderable fertility, and as they moulder, or fall away become uſeful in the compoſt dunghill.

Malt-Duſt, *Comb* or *Coombs*.

This is reckoned one of the moſt efficacious manures. It is the duſt that ſeparates from the malt in the act of drying; and is uſed as a top-dreſſing for barley, for clover, turneps, &c.

Mortimer ſays it is a great improver of barley, allowing forty buſhels to an acre, but that it laſts only one crop.

A piece of land being manured with malt-coombs, at the rate of four quarters to the acre, and ſowed with clover and barley; the barley produced near ſeven quarters on an acre, and the crop of clover was one of the fineſt that ever was ſeen [5].

About Dunſtable malt-duſt coſts 1s. a buſhel. It is ſown by hand, from twenty-four to thirty-two buſhels on an acre, at the ſame time with barley, and harrowed in with the ſeed. It ſuits moſt ſoils and ſeaſons; but quickly ſpends itſelf, and is therefore never ſown with wheat. As a top-dreſſing to wheat in march, about thirty buſhels to an acre, it probably would ſucceed. Black malt-duſt, or ſuch as falls through the kiln-plate in drying, is greatly preferred to the white, on account of the ſeeds of charlock, with which it abounds being deſtroyed by the heat [6].]

Mr. Miller ſays, it is a great enricher of barren ground, having a natural heat and ſweetneſs in it, which imparts to the ſoil a proper fermentation, eſpecially where grounds are a natural clay, and have contracted a fourneſs and auſterity, whether from having lain long untilled and unexpoſed to the air, or from water having ſtood long on them.

Oak Bark or *Tanner's Bark*.

Oak bark, after the tanners have uſed it for tanning leather, when laid in a heap and rotted, is an excellent manure, eſpecially for ſtiff cold land; in which one load of this manure will improve the ground more, and laſt longer, than two loads of the richeſt dungs; and yet it is very common to ſee large heaps of this remaining in the tanners yards for many years, in ſeveral parts of England, where manure of other kinds is very ſcarce, and often carried to a great diſtance. Of late years this has been much uſed for hot-beds in ſeveral parts of England, and is found greatly to exceed horſe-dung for that purpoſe, the fermentation being moderate and of long continuance; ſo that a bed of tan, when rightly made, will continue in a moderate temperature of heat for three or four months; and when the heat begins to decay, if it be ſtirred up with a dung fork, and ſome freſh tan added to it, the heat will renew again, and laſt for ſome months, ſo that theſe beds are by far the moſt kindly for exotic plants; and whatever plants are plunged into theſe beds, if they are permitted to root the bottom of the pots, they will thrive more in one month after, than they did in four months while they were confined to the pots. Many plants that root through the pots into the tan, ſend forth roots upwards of twelve feet each way in leſs than three months, and the plants advance in proportion.

After the tan is uſed for a hot-bed it may be ſpread on the ground for manure, and will greatly enrich it: but it is beſt for cold ſtrong land, becauſe it is of a warm nature, and will looſen and ſeparate the earth. When this manure is laid upon graſs, it ſhould be done ſoon after michaelmas, that the winter rains may waſh it into the ground; for if it be laid on in the ſpring, it will burn the graſs, and inſtead of improving will greatly injure it, at leaſt for that ſeaſon. Where it is uſed on corn land, it ſhould be ſpread on the ſurface before the laſt ploughing, that it may be turned down for the fibres of the corn to reach it in the ſpring: for if it lies too near the ſurface, it will forward the growth of the corn in winter; but in the ſpring, when the nouriſhment is chiefly wanted, it will be nearly conſumed, and the corn will receive little advantage from it. Nor will it be proper to have this manure lie too near the roots of any plants, for when this happens it is prejudicial to moſt of them, but eſpecially to bulbous and tuberous-rooted flowers. But when it is buried juſt deep enough for the fibres of the roots to reach it in the ſpring, the flowers have been exceedingly improved by it: and in ſome places, where this manure has been uſed in kitchen-gardens, it has greatly improved the vegetables.

[In proceſs of time tan is certainly converted into vegetable mould. When it becomes rotten and is ſpread pretty thick, it has been found of great uſe to graſs ground. But the moſt likely method of rendering it uſeful is to mix it with lime, or perhaps with ſalt. Or after it is taken out of the tan-pit, and waſhed, mix it with an equal quantity of freſh horſe-dung, including the litter, and cover it from rain, but let the whole be kept moiſt. When the heat is gone off, mix it with a freſh quantity of horſe-dring, to renew the heat: when that is gone off, the whole being made into a compoſt with chalk, will form a very enriching manure.

[1] Farey in Young's Ann. 25. 75.

[1] Walford in Young's Ann. 19. 190.
[2] See Young's Eaſtern tour, p. 413.
[3] Marſhall's Norf. 1. 29.
[4] Young's Ann. 5. 360. and 18. 433.
[5] Bedford in Bath papers, 3. 300.

Two waggon loads of tan from the tanners, with one waggon load of unſlaked lime, mixed together, and lying for a week, being uſed as a top-dreſſing for turneps and graſs, was found to be excellent for both.

Mortimer mentions a piece of land in Cumberland of two acres and a half, let for 11l. annual rent. What improved it to that value was the emptying of the town tan-pits on it.

Soot is uſed as a manure in almoſt every part of our iſland, where it can be procured in ſufficient quantities, and is applied in every different ſhape, and to all crops. In the language of the chemiſts, it is a ſublimate, conſiſting principally of carbon in a moſt ſubtile powdery ſtate, and ammoniac or volatile alkali. Whether the carbon can be obſerved, is an undecided queſtion; but the volatile alkali operates as a ſtimulant, and it may even prove nutritious; for it conſiſts of hydrogen and azote.

Uſed in its ſimple ſtate, it anſwers beſt upon light gravel, chalk or limeſtone ſoils: if in a compoſt, the proper proportions are, two loads of ſoot, the ſame quantity of lime, and ten loads of earth. The ſoot and earth ſhould be well incorporated, and remain in a heap a week or ten days, then turned, and the lime added in ſtratums as it is turned over; in this ſtate it may remain a month or ſix weeks, and be again turned, taking care to break every part of it as ſmall as poſſible, by working it well with the ſpade: in a week or two more it will be ready for uſe. This compoſt may be employed upon every ſort of grain, eſpecially wheat or barley; and if rain fall ſoon after it is laid on, it will immediately begin to operate.

Soot, ſays Mortimer, is very good both for corn and graſs, eſpecially on cold clays or lands much overrun with moſs: but ſea-coal ſoot is the beſt by much: forty buſhels are commonly allowed to an acre, but ſome lands require more. A hundred buſhels have produced an extraordinary crop; but it was a dry ſeaſon: if much rain had followed, being laid on ſo thick, it might probably have diſſolved the roots and ſtalks of the plants entirely. If the weather prove dry, a ſmall quantity has little effect, being evaporated or diſperſed by the ſun and winds.

About Baldock, they bring ſoot from London, three hundred buſhels to a waggon load. The price is from 7d. to 9d. a buſhel, very ſhort meaſure, which makes the price from 9d. to 11d. the Winchеſter buſhel ſtruck. It is laid on a heap on the lands. From this a common feed-ſcuttle is filled, and a man walking the length of the lands ſows the ſoot as they do corn. The quantity uſed on a ſtatute acre is from twenty to forty Winchеſter buſhels. In general, thirty buſhels are reckoned a complete dreſſing, when dung or other manure has not been uſed: but when the land has been dunged, half the quantity of ſoot is ſufficient. Soot is found to anſwer beſt on wheat in april. It likewiſe ſucceeds on peas or clover in the ſame month; and has a good effect ſown with barley in the beginning of april, and harrowed in. A ſlight dreſſing of ſoot is uſed at any time in the ſpring, when grubs or worms appear to injure the young corn. Thinly diſtributed on newly ſown turneps, juſt before they come up, it prevents the fly or grub from injuring them, provided no rain falls to waſh it into the ſoil; but if ſown after the plants come up, it greatly injures them, particularly if the ſeaſon comes dry.

Soot anſwers beſt on light dry chalk ſoils, and in moderately wet ſeaſons: it does little good on ſtrong or wet land, or in very dry ſeaſons, unleſs ſown earlier than uſual. The London coal-ſoot, is generally mixed with cork-duſt, coal-aſhes, or ſweepings of the ſtreets; yet even in this adulterated ſtate, it is found to anſwer much better than country ſoot from wood[*].

In Norfolk, near towns, ſoot is uſed as a top-dreſſing for wheat in february or march. If it be ſown early, and the froſt catch it, the ſtrength is thereby lowered: if late, and no rain fall to waſh it in, it is thought rather injurious than beneficial. And it is not, in any caſe, found of much, if any, ſervice, to the ſucceeding crop of barley. The quantity ſet on is forty buſhels an acre.

Their manner of ſowing it is this. A favourable opportunity being embraced, when the wind blows gently in the direction of the lands or ridges; the waggon, which is kept under cover till wanted, is drawn in a furrow againſt the wind; while a man, ſtanding on the outſide of the waggon, ſpreads the ſoot with a ſhovel, ſeveral yards wide, on either ſide of him; the height of his ſituation at once enabling him to ſpread it wide and even. As he reaches the windward end of the lands, the team wheels round under the hedges, and takes a freſh width'.

Soot is an excellent manure for paſture land, in the quantity of forty buſhels to an acre. Mortimer ſays, it produces a mighty fine ſweet graſs, and deſtroys weeds and trumpery.

Lucerne is much improved by it. It is the favourite manure for Sainfoin on the downs of Wiltſhire; only ten buſhels on an acre: and is in general reputed good for this graſs.

It is commonly reputed to deſtroy clover, while it encourages the growth of ray-graſs. Dr. Anderſon informs us that this opinion is erroneous. He ſays however, that although it does not deſtroy clover, yet it promotes not in any ſenſible degree the growth of it; and that he has uſed ſoot as a top-dreſſing for clover and ray-graſs in all proportions, from one hundred to ſix hundred buſhels on an acre, without perceiving the clover to be in the leaſt degree more luxuriant than in the places where no ſoot had been applied.

But the effects of this manure upon ray-graſs is amazing, and increaſes in proportion to the quantity. Hence in fields dreſſed with ſoot, the ray-graſs ſo far overtops the clover, that the latter is not ſeen, and the whole crop ſeems to be ray-graſs; although in fact there is as much clover as if it had not been manured at all.

Soot ſeems particularly favourable to the growth of graſs; for where a heap of it has lain ſo long on the ground as to deſtroy all the plants upon its ſurface, the firſt plant that appears afterwards is the common quich or couch-graſs: as the firſt plant that appears where ſtable-dung has lain is the common knot-graſs or hog-weed'.

Peat-Moss containing an acid nearly in proportion of one-fourth of its weight, its other valuable parts, oil, alkaline ſalts, and vegetable earth, are not only locked up, but the whole maſs is prevented from fermenting, by which proceſs alone it can be rendered uſeful.

To bring on the deſired fermentation, dry the peat-moſs well, break it into ſmall pieces, and lay it on the ground to the thickneſs of three or four inches. Let the whole of the dung from the ſtables be laid over it. The moiſture of the dung will ſink down, and not only correct the acidity, but ſaturate the peat-moſs completely with the valuable properties of the dung. Turn the dunghill over, and mix the dung and peat-moſs carefully together, throwing them up lightly, and a gentle fermentation will come on. After a few weeks turn it over again; adding one load of lime to five loads of moſs; the whole being well broken and accurately mixed. The addition of the lime will haſten the putrefaction of the moſs, diſſolve the oil contained in it, and give a due degree of activity to the whole.

Another way of effecting this is, to pour the urine of cattle, the moiſture of the dunghill, ſoap-leys, and offal of the houſe upon the peat-moſs; and afterwards to mix it with ſtable-dung and lime.

A third way of rendering peat-moſs uſeful as a manure, is to mix it with pot-aſh, kelp, lime or aſhes. In diſtant parts of the country, in the neighbourhood of bogs where peat-moſs abounds, and other manures are ſcarcely to be obtained, it may be highly important to know, that eighty or one hundred pounds weight of pot-aſh is ſufficient to ſaturate a quantity of peat-moſs that will manure an acre of land, and

[*] Farey in Young's Ann. 25. 67.

[*] Marſh. Norf. 1. 62.

[*] Anderſ. Eſſays, 1. 308.

that if it be well dried, a much ſmaller quantity of pot-aſh will ſuffice.

For this purpoſe diſſolve the pot-aſh in boiling water, half a pound to a gallon, and ſprinkle it over the peat-moſs, broken ſmall, and laid a foot thick, till it is ſaturated with the ley: then lay on a freſh ſtratum, treating it in the ſame manner. Leave the heap to itſelf ſome weeks, and then turn it, adding a quantity of the freſheſt and moſt active lime, worked well into the moſs with the ſpade: after ſome time it ſhould be again turned, and every part of it broken as ſmall as poſſible. In a month or ſix weeks, the whole will be ready for uſe.

Upon thin gravels or ſharp active ſoils, ſuch as chalk or limeſtone, this compoſt will be highly beneficial, not only as a manure, but alſo for thickening the ſtaple. *See Peat-aſhes.*

Decayed Vegetable Subſtances, are all uſeful as a manure. Some probably are little more than common earth or mould; but others have oily and other particles in them of conſiderable value. Mortimer reckons the rotten wood of hedges and coppices to be a great improver of the ſoil, and inſtances the earth where piles of faggots ſtand.] Miller remarks, that rotten wood, and ſaw-duſt when rotted, are a very good manure for ſtrong land, becauſe they looſen the earth and render it light. [Saw-duſt freſh from the pit, is not worth the carriage, although in a well rotted ſtate it becomes an excellent manure. All theſe ſubſtances may be added to ſtrong heating dunghills. As may alſo the graſs mown from lawns.

Leaves of trees may be collected at the fall and formed into a heating dunghill. They have been found to anſwer as a manure for potatoes.

The ſurface earth of woods, coppices and plantations, being formed chiefly of rotten ſticks and leaves, is very uſeful to the gardener for his flowers, mixed with land, loam and rotten dung.

CHARCOAL

Has been ſucceſsfully uſed as a manure. It is one of the ſubſtances which Mr. Arthur Young has employed in his experiments, and found to do good. See *Annals*, vol. 1. 151, &c.]

PLOUGHING IN GREEN CROPS.

Many ſorts of vegetables may be ſown, in order to be ploughed in when they are in full growth, to enrich the land. The ancients ploughed in Lupines for this purpoſe, and that practice is ſtill continued in Italy and the South of France; but they are too tender for our climate, and we have better plants for the purpoſe, as Peas, Beans, Buckwheat, Turneps, Vetches, Clover, Spurrey, and other moiſt and juicy plants, as Muſtard, Colefeed and other large-growing plants, cut before they form their ſeeds; when they are in full bloom, and abound moſt in ſap.

When we conſider at what ſmall expenſe of prime coſt, carriage, and other charges this manure is obtained; and how it completely ſmothers the weeds; it is wonderful that it has not more generally been adopted. It might no doubt be uſed on many occaſions, in place of a complete ſummer fallow, as a preparation for wheat: in which caſe the price of the ſeeds, which is almoſt the only expenſe, would be amply repaid by the ſaving in the article of labour.

Their value might be much improved, by laying on a certain quantity of lime, chalk or marl, according to the nature of the ſoil; which would tend greatly to haſten the fermentation, and bring the land ſooner into a proper ſtate for affording nouriſhment to the ſucceeding crop of wheat.

EARTH.

Maiden or untried earth, ſuch as is found ſix or ſeven inches deep under turf on commons, headlands, and by the ſides of roads in many places, when it is of a good quality, is of ineſtimable value as a manure for fruit-trees, raiſing ſhrubs and trees in nurſeries, all ſorts of crops in kitchen-gardens, and ornamental flowers, as well as corn and graſs. The nurſery-men near London ſend many miles for a loamy maiden earth, as abſolutely neceſſary for their purpoſe. Mr. Lawrence recommends it in preference to dung for both fruit and kitchen-garden, particularly for Aſparagus, laid a foot and half deep, without any dung whatſoever.

Mixed with dung or lime it makes excellent manure for corn or turneps. *See Compoſt.*

Fuller's earth, being of a very fat nature; though not much uſed for the improvement of land, on account of the profit it yields for cleanſing and ſcouring woollens, &c. is recommended as a great improver of ſome ſorts of land, by Sir Hugh Plat, Markham, Mortimer, and others.

Doubtleſs there are many ſorts of Earth that might be employed with ſucceſs beſides thoſe in common uſe, if they were examined by men ſkilled in their reſpective properties, and applied by thoſe who are verſed in their operations.

LIMESTONE.

In remote parts of the country, where limeſtone abounds, without fuel to burn it, if means can be found to break it ſmall at no great expenſe, it will be found uſeful as a manure. Attempts have been made in Scotland by Lord Kaimes to pulverize it. Where quarries of limeſtone or marble are worked, the duſt and chippings may be collected; but the only means of employing it on an extenſive ſcale is to pulverize it by a machine going by water or ſteam, upon a principle ſimilar to the large hammers uſed at iron mills. Chalk, other ſorts of ſtone, marl, crag and ſea ſhells, may be pounded in the ſame manner. Monſ. Duhamel found by accident that the powder of marble is a good manure for graſs.

The ill-burnt unſlakeable lime-ſtones, thrown out from the ſifted lime in building, upon part of a field in a mooriſh ſoil, the whole of which had been pared and burnt for turneps, and the other part manured for dung: the lime-ſtoned part had much the beſt produce; and afterwards when tilled for oats and ſown with clover, and even after that for ſeveral years, had always a manifeſt ſuperiority over the dunged part[a].

Limeſtone is calcareous earth indurated, with a ſmall quantity of quartz and argillaceous earth. Not only the common limeſtones, but Portland, Purbeck, &c. belong to this claſs. They all effervеſce with acids, fixed air entering largely into their compoſition: they will not give fire with ſteel: and contain a ſmall quantity of iron. They are all reducible to lime by the application of heat[b].

Limeſtone gravel is a marl mixed with large lumps of limeſtone, which when ſpread upon the ground, gradually fall into ſmaller pieces. If the pieces are large, and diſſolve ſlowly, the quantity applied ought to be great, and the effects will be ſlow and laſting; but if they are ſmall, it will operate more quickly, and laſt a ſhorter time. This is a conſiderable article of manure in Ireland, but is little known in England[c].

CHALK

In its native ſtate is uſeful as a manure upon the ſame principle as Limeſtone; but it is more eaſily pulverized, and lighter or more porous. Nearly the whole of it is calcareous earth; whereas no marl contains more than a fourth part of that ſubſtance.

Chalk is in high eſteem in the ſouthern counties of England, where it abounds. Its beſt effects are upon deep ſoils, which contain no calcareous earth. It is obſerved to have very little effect upon lands where the ſubſtratum is chalk; and if the ſoil be thin, it does miſchief. When uſed upon light ſoils, it is made into compoſt with earth and dung. When this is well mixed and duly proportioned, it produces valuable crops, and its influence continues many years.

The common method of uſing this compoſt, is either to lay it upon fallows for wheat, and mix it intimately with the ſoil, or upon graſs as a top-dreſſing: in both caſes it anſwers well; in the latter it deſtroys moſs rulhes and all coarſe aquatic plants that grow in four or wet lands; in the former it opens and pulverizes the ſoil, and never fails to produce good crops.

Chalk ſhould be broken as ſmall as poſſible. It ſhould be dug near the end of autumn, and laid

[a] Gutler in Y. Mag. 4. 492.
[b] Wilkinſon in Y. Mag. 21. 102.
[c] Abbott. Hiſtor. vol. 1.

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on immediately; at that ſeaſon the air is generally moiſt, the moiſture will be abſorbed by the chalk, this will occaſion it to ſwell and break in pieces, and if froſt come on, it will accelerate the buſineſs: but when it is dug in ſummer, it loſes its moiſture, and acquires a hardneſs, which in a great meaſure prevents it from being of any uſe.

Chalk ſhould in no caſe be ploughed in till its parts are properly ſeparated, and then it ſhould be completely harrowed in, and well mixed with the ſoil.

If the ſoil be thin and light, a certain proportion of dung will be uſeful; but if it be heavy, the dung will only leſſen the operation of the chalk. It is generally thought that lands which have been completely chalked, will not bear a repetition of it. A compoſt of it however may be uſed to great advantage. In the ſouthern counties a field has been chalked and dreſſed with chalk and dung mixed in pieces alternately, and the former has produced a very bad crop, and the latter a very good one.

Chalk beyond a certain quantity will not only ceaſe to operate as a manure, but even prove hurtful. It ought therefore be uſed with caution, and due pains taken not only to aſcertain the ſtrength of the chalk, but the quality of the ſoil upon which it is laid.

In ſome parts of Eſſex they lay from five to eight waggon loads of chalk on an acre, either upon a clover ley while feeding, or on a ſummer fallow: a very thin dreſſing of it is ſeen immediately to an inch, like rotten dung, and laſts twenty years, fifteen in good heart. The ſoil is loam; they have little clay and no ſand: on gravels the effect is but ſlight.

They bring the chalk from Malden, whither it is brought by ſea from Kent, and a waggon load coſts 10s. at the quay. It is rather hard; the ſharpeſt froſts leave many lumps unbroken; theſe they break with pickaxes. The effervescence with vinegar is pretty conſiderable; but in water it ſcarcely falls at all.

It is a general opinion in that country, that land which has been once chalked will not take it again; they acknowledge however that mixed with earth and dung it is even then excellent. They obſerve, that laying a ſlight dreſſing of chalk and earth or dung on a field never chalked, will take ſo much effect, that the ſame field will not anſwer to chalk completely. They obſerve alſo, that the chalk preſently gives the land a red colour. They are of opinion that chalk is a great enemy to good graſs; and affirm that a field which before chalking will run of itſelf to a fine head of white clover, no longer does it after chalking.

There is no ſaying any thing againſt experience: only we ſhould not draw general concluſions from partial experiments. Much of the effect of manures depends upon the ſoil on which they are laid. About Enfield the ſame chalk does wonders, which at North Mims has very little effect: the one is a rich loam, the other a poor gravel [a].

Near Sandwich in Kent chalk has been found in a very high degree to improve a ſandy ſoil, giving it tenacity, and totally exterminating that pernicious weed the Corn Marigold, provincially called Yellow bottle or buddle, or Golds, ſo abundant in ſandy ſoils. They lay on forty loads of forty buſhels each to an acre. Upon paſture land it does nothing [b].

In Hertfordſhire it is thought that chalk makes the land plough much better, and renders all manures much more effectual. If a field be divided in parts, one chalked, a ſecond chalked and manured with dung or ſoot, aſhes, &c., and a third dunged or aſhed without chalk; although chalk alone has no effect, yet the other manure on the chalked part, will have a much greater effect than on the part where no chalk is laid [c].

The action of chalk on the ſoil is either chemical or mechanical. It acts chemically as an abſorbent, contributing to preſerve dry thoſe lands which are poachy and wet; and by its attraction for acids, it may haſten the putrefaction of vegetables. It acts mechanically, by entering into the compoſition, and totally altering the nature of clay, converting it by proper pulverization into a ſpecies of marl: by inſinuating itſelf between the particles of clay, it deſtroys their adheſion; thus preventing it from becoming too hard in ſummer, and too wet in winter [d].

LIME

Is calcareous earth deprived of its fixed air and water, but which has acquired in calcination a conſiderable proportion of fire. Quick lime, like ſalts and earths, perhaps is not itſelf nutritive, but like alkaline ſalt, ſtimulates the vegetable, and thereby accelerates its growth, applied in due quantity and at a certain period of vegetation. If it be applied in larger quantity, it kills animals in the ſoil, and alſo ſmall vegetables; and from the deſtroyed and decayed animals and vegetables a ſoil is rendered fertile, becauſe impregnated with mucilage. The ſuperabundant lime does not prove hurtful, becauſe it becomes mild calcareous earth, by attracting carbonic acid from the atmoſphere. A moſt ſatisfactory example of the effect of lime is to be found in Derbyſhire, about Buxton, &c. where by throwing lime upon the heath, that ſhrub has been deſtroyed, and excellent graſſes, particularly white clover, have ſprung up in its room [e].

It is a common notion that lime enriches land, by ſupplying a ſalt fit for the nouriſhment of plants; but it contains no ſalt. By the fermentation it brings on, the earth is opened and divided, and by its abſorbent and alkaline quality, it unites the oily and watery parts of the ſoil. It alſo readily forms the acid which it collects from the air into a neutral ſalt, of great uſe in vegetation. Viewing lime in this light, it probably may tend to rob the ſoil of its oily particles, and in time to render it barren, unleſs it be ſupported with rotten dung, or other manures of an oily nature. Light ſandy lands containing only a ſmall portion of oil, ſhould not be overdone with lime, unleſs we can aſſiſt them liberally with animal manures. Its great excellence on a ſandy ſoil, is its mechanically binding the looſe particles, and preventing the liquid parts of the manure from eſcaping out of the reach of the crop. On clay, by means of the gentle fermentation which lime produces, the ſtubborn ſoil is opened; the manure readily comes into contact with every part of it, and the fibres of the plants have full liberty to ſpread. It is often ſaid that lime anſwers better upon ſand than clay; but let the farmer treble the quantity, and he will be convinced that lime is better for clay than ſand. Clay well limed becomes a marl, falling in water and fermenting with acids: the air, rain and dews are freely admitted, and the ſoil retains the nouriſhment of each. In conſequence of a fermentation raiſed in the ſoil, the fixed air is ſet at liberty, which in a wonderful manner promotes vegetation. It is the nature of lime to attract oils and diſſolve vegetable bodies. Upon theſe principles we may account for the wonderful effects of lime in the improvement of black moor land, which conſiſts of diſſolved and half diſſolved vegetable ſubſtances, and is full of oil. Lime aſſimilates the one, and diſſolves the other [f].

Reſpecting the proper quantity of lime, it may be obſerved in general, that the greateſt ſhould be uſed upon the deepeſt and richeſt ſoils, and the leaſt upon thoſe that are thin and light. Upon ſtrong clays and deep loams there is a ſubſtantial body for the lime to operate upon, containing abundance of rich ſubſtances, and conſequently a conſiderable quantity will be required to pervade and give due activity to the whole; but as the ſoil is lighter, the quantity muſt be leſs, and the after-management with regard to crops, extremely cautious. In liming a ſingle field, an attention to the quantity will often be found neceſſary; the ſoil of the higher parts being for the moſt part more light and free, and that of the lower more deep and compact, where the ground is unequal. On ſome ſoils, particularly where the bottom is chalk, limeſtone or marl, lime will be pernicious, eſpecially if the ſoil be thin.

[a] Young's Ann. 2. 39.
[b] Legrand in Y. Ann. 4. 411.
[c] Young's Ann. 19. 284. and Walker's agric. ſurvey of Herts, p. 31.
[d] Wilkinſon in Y. Ann. 21. 191.
[e] Pearſon, rep. on Man. 299. 2. 25.
[f] Hunter.

Application of Lime.

First upon Fallows. It is found to produce the beſt effects in this caſe when laid on early in the ſeaſon, and well incorporated with the ſoil.

Secondly for Turneps. By the aſſiſtance of lime whole diſtricts, formerly uſeleſs, have been made to produce not only good crops of turneps, but alſo valuable crops of corn and broad clover. Its greateſt value however ſeems to be upon light ſoils for theſe crops, inſomuch that where lime is the principal manure, they ſeldom ſow turneps, clovers, peas or beans, except upon lands that have been previouſly limed. Inſtances of this are often met with on the uplands, where if any of the broad-leaved crops are ſown, where a part has been limed, and a part not, the parts where the lime has been laid will produce a valuable return, while that which has been dunged only will hardly repay the expenſe of ſeed and labour.

Farmers differ in their methods of uſing lime upon turnep-lands. Some lay it on only before the laſt ploughing, and plough it in without harrowing: they alſo lay it in heaps, hot from the kiln, without being ſlaked. But the ſooner it is laid upon the land, and the more ploughings and harrowings it receives before the ſeed is ſown, the better it will be incorporated with the ſoil, and the more certain and valuable will be its effects.

Thirdly, upon Clover-ley for Oats. This is perhaps the worſt way in which lime can be uſed. It is generally laid on in the autumn, and ploughed down in the ſpring, and the returns are inadequate to the expenſe.

Fourthly, as a top-dreſſing in ſpring, upon graſs, or wheat and other grain. Upon the latter it is dangerous, unleſs the lime be made into a compoſt with dung or earth: in this form it will not only be ſafe but profitable. Upon the former it is no better, except upon coarſe meadows, abounding with ruſhes and other trumpery, which it deſtroys.

Upon light ſoils, if ſeveral white crops be taken in ſucceſſion after liming, the land will be worn out. A white and a green crop ſhould be taken alternately. Upon clay lands a ſummer fallow is ſometimes indiſpenſible, in that caſe the lime ſhould be laid on in July or auguſt, and completely harrowed in before ploughing; two or three ploughings at leaſt are required to incorporate it well with the ſoil, and a ſuitable harrowing with each.

Conſidering lime as a ſubſtance operating upon the living ſubſtances in the ſoil, as well as mechanically upon the ſoil itſelf, we perceive the neceſſity of applying a ſufficient quantity at once, in order to produce theſe effects: for if the quantity employed be ſmall, and the ſoil deep, its effects will be ſcarcely perceived. Many farmers imagine that lime will not anſwer upon their lands, becauſe they have laid it on in ſmall quantities, whereas in all probability they would have found a larger doſe highly beneficial. On clay four or five hundred buſhels are laid on for wheat, but it can ſcarcely be expected to anſwer the expenſe. On moſs, bogs, moor, &c. to be reclaimed from a ſtate of nature, the more is laid on, the better it is.

The beneficial effect of lime on ſandy land may be explained from its binding quality. But when ſuch lands are firſt broke up from their ſtate of heath, the vegetable matter is acted upon, and reduced to manure by the corroſive power of the lime. On ſuch lands, the firſt crops of rie has more than paid the expenſes. By attracting water lime lays land dry.

By inſinuating itſelf between the particles of clay, it deſtroys their adheſion, breaks the ſtiffneſs of the ſoil, and gives readier acceſs to the operation of manures, and to the extenſion of the growing roots of plants.

By attracting fixed air, water and acids, and by its corroſive properties, it deſtroys the texture of bodies, and reduces vegetable matter to a ſtate of manure. It unites ſtrongly with oils, and renders them miſcible with water.

By being deſtructive to inſects and vermin, it may contribute to preſerve the ſpringing corn from their ravages.

If the lime is to lie in a heap for any length of time, it ſhould be covered with earth, to preſerve it from the air and rain.

It is obſerved that the benefit of lime is not apparent in a dry ſummer, and that it does not act as a manure till it has been thoroughly ſlaked in the ſoil, by continued rains.

In Eſſex an excellent practice prevails, of forming a compoſt of lime, turf and ditch earth, at the gate of every field, ready to be applied as a manure when wanted.

Twenty buſhels of lime mixed with forty buſhels of ſand, form an excellent top-dreſſing for an acre of wheat, if laid on early in the ſpring.

Lime is apt to ſubſide beyond the depth of the common furrow: deep-ploughing in this caſe is the only remedy applicable[1].

In ſome midland counties a fallow is ſeldom made without being dreſſed with lime, under an idea that it mellows the ſoil, and makes it work well, while in ſtillage, and ſweetens or improves the quality of the herbage, when laid down to graſs. For this purpoſe it is fetched eighteen or twenty miles.

Two ſorts of lime are in uſe. The Breedon lime, burnt from a very hard ſtone, and of ſingular ſtrength as a manure; and the common lime burnt from common ſtones, and called Ticknall or Walſal lime.

The load heaps are generally watered as they are thrown down from the waggon; and always turned over to complete the ſlalling more effectually.

If a quantity of lime be fetched in autumn or early in winter, to be uſed in the ſpring, when team-labour is more valuable, it is thrown up into a regular roof-like heap or mound, and thatched as a ſtack, a ſmall trench being cut round the ſkirts to catch, with an outlet to convey away, rain water. Thus the heap is prevented from running to a mortar-like conſiſtence by the ſnows and rains of winter, and thereby rendered uſeleſs as manure.

A turnep fallow was manured with Breedon lime in general five quarters to an acre; part had double that quantity, and part had none. The turnep crop received no obvious advantage, but its effects on the barley were evident. The part not limed was the worſt crop, nearly in the proportion of four to three. But the part limed with ten quarters to an acre was the beſt crop. Whence the common notion that more than five quarters of Breedon lime to an acre is ruinous to crops, ſeems to be ill founded[2].

Lime is in good repute, though not in general uſe in Norfolk, as a manure; different opinions being entertained reſpecting the value of it. This difference of opinion will ever remain, while general concluſions are drawn from particular incidents. It is uſed by many judicious farmers even after marl, with ſucceſs. Upon hot burning ſoils it is generally found of the greateſt efficacy, and is perhaps the moſt effectual cure of ſcabs or burning patches of land that has yet been diſcovered; from theſe and other circumſtances lime is here conſidered as a cold manure.

The general method of applying lime is to let it fall in large heaps, and to ſpread it out of carts upon fallowed ground either for wheat or barley. The quantity ſet on is about three chaldrons an acre: the price 9s. or 10s. a chaldron. From experiments made on turneps, barley and wheat, it appears that lime does not act as a manure until it has been thoroughly ſlaked in the ſoil; and it ſeems as if the rains of ſummer were neceſſary to promote its operation[3].

In ſome parts of Yorkſhire Lime is uſed invariably on every ſpecies of ſoil, and in moſt caſes with great ſucceſs.

On the higher drier lands its utility is evident. At Malton, it is laid on the calcareous quarry ſoil with ſucceſs. Its uſe to the looſe ſandy ſoils is fully eſtabliſhed.

The prevailing crop is wheat on fallow. It is alſo pretty generally ſet on for rape, turneps or other crop.

[1] Wilkinſon in Y. Ann. 21. 105.
[2] Marſhall's Midl. 1. 198, and 2. 229.
[3] Marſh. Norf. 1. 30, 161. and 2. 55.

after ſod-burning, and ſpread among the aſhes. It is alſo ſometimes ſet on for barley. But its effect to the firſt crop, except of wheat or rape, is ſeldom perceptible.

The benefit of lime to graſs is a matter of diſpute; it is even thought by ſome to be detrimental. It ſeems however to be a generally received idea, that lime laid on graſs is not thrown away; for whenever the land is turned up again, its benefit to corn will have full effect.

Their methods of liming are various. The worſt is, laying it in large heaps, and ſuffering it to run to a jelly before it is ſpread.

Next to this, is ſetting it about the land in ſmall hillocks: for although they are ſpread before they approach to a ſtate of mortar, yet this method is injudicious. Lime falling in the open air, breaks into ſmall cubical maſſes, which being once buried in the ſoil, remain in it for ages, without being mixed intimately with it. Lime ought therefore to be ſpread in a ſtate of perfect powder.

It is therefore the practice of judicious huſbandmen to ſet lime upon the land in load-heaps, and ſpread it over the ſoil out of carts, as ſoon as it is ſufficiently fallen. Or the load-heaps are turned over, not ſo much to finiſh the falling, as to gain an opportunity of burying the granulous ſurface of the heaps; by which means the fragments are at leaſt leſſened, if not reduced to powder.

In the Moorlands the heaps are interlayed and covered up with moiſt turf or peat-mould, which bringing on a rapid fall, the whole is ſet on fire, and the ſurface kept free from granules by a covering of dry aſhes.

The heaps, therefore, whether great or ſmall, ſhould be covered up with ſoil, either of the field they are ſet in, or that of lanes or ditches carried to them for the purpoſe; and if a ſpeedy fall be required, throw water over this covering.

If lime be uſed on fallow for wheat, it is generally ſpread in July, harrowed in as faſt as it is ſpread, and ploughed under with a ſhallow furrow as ſoon as convenient. The uſual quantity is three or four chaldrons to an acre[1].

Mr. Young, from various minutes made in his Eaſtern tour, concludes, that lime agrees with almoſt all ſoils: that it fails however on a thin loam on lime-ſtone; that it ſeems inefficacious on old paſture; that it has a ſtrong effect in killing weeds; and that the greateſt effect is on heath and moor-lands; where, as in the Peak of Derbyſhire, it converts waſte ſoils into fine paſtures, without tillage; but the ſort is a ſtrong ſtone lime, burning ſoft and ſoapy, and the quantity laid on is very great, riſing to three hundred and ſixty or even one thouſand buſhels; but the common quantity is about four hundred buſhels. There is great reaſon to attribute much of the benefit to quantity: in waſtes eſpecially, too much can hardly be laid on, becauſe diſſolving the roots of heath, and other ſpontaneous growth requires a powerful agent. Of their ſtrong lime three hundred and ſixty buſhels are probably equal to five hundred or ſix hundred buſhels of chalk lime. What then are five or ſix quarters, which is no uncommon quantity, laid upon an acre.

The Derbyſhire mode of uſing lime in improving their heaths or moors, is firſt to pare the ground in the beginning of march about an inch and half thick, to turn it about in dry weather, when dry to gather it into heaps, and burn it into aſhes, to ſpread them even over the ground, to ſet their lime, to ſpread it and harrow it all together, to plough the ground very thin, and to ſow it with turneps or rape: then the ſpring following to ſow with oats or barley, and good graſs ſeeds; another good dreſſing with lime after the firſt crop of ſeeds is got; and then it may lay for paſture. Spreading the lime in a ſlaked ſtate, is by far the beſt method. The ſummer months are preferred, becauſe fewer coals are neceſſary for burning; in other reſpects the winter months are juſt as good for laying the lime upon the ground.

[1] *Marſh. Yorkſh.* 1. 347.

Dr. Anderſon is very copious upon the ſubject of Lime, both as a cement and a manure, in his Eſſays relating to Agriculture. It is remarkable that Mr. Miller has not mentioned Lime as an article of Manure; though Mortimer and other old authors on huſbandry have written ſenſibly about it.

MARL.

Has been long celebrated as a manure. Our writers on huſbandry of the laſt century treat largely on it. Gervaſe Markham has a treatiſe expreſsly on the ſubject, entitled, The Inrichment of the Weald of Kent; in which he ſays, that Marling was the practice of our forefathers many centuries back, even in the time of Edward II. He enumerates four ſorts, "grey, blew, "yellow and red; all which be profitable, if they be "earthy and fat, or ſlippery as ſope: and moſt times "little worth, if they be mixed with ſand, gravel or "ſtone."

Walter Bligh has ſhown the nature and uſe of Marl, with experiments of his own upon it, in his Engliſh Improver Improved, 1653.

Mortimer alſo has a long and good chapter on the ſubject, in which he mentions that there are five ſorts of Marl in Cheſhire.

Few ſubſtances appear under a greater diverſity of forms than this, and writers on Agriculture enumerate the ſeveral varieties as diſtinct manures; they may all however be reduced to two ſorts, Earth or Stone Marls, and Shell Marls.

The firſt, when they are ſoft and of an uniform texture are called Clay Marls; when firm and hard, Stone Marls; when they aſſume a thin foliaceous appearance, Slate Marls. They all agree in this, that if they be expoſed for a ſufficient time to the action of the air, they crumble into ſmaller parts, and fertilize the earth to which they are properly applied. Dr. Ainſlie has ſhown that they all contain a conſiderable proportion of clay, united with calcareous matter, not differing in any reſpect from that in limeſtone.

When marl is expoſed to the air, the clay in its compoſition abſorbs the moiſture of the air and rains, ſwells, become ſoft, and gradually crumbles to pieces.

When ſand is mixed with the clay, it becomes a ſtone, more or leſs firm according to the quantity of ſand, or other circumſtances. But where there is any clay in the compoſition, it will be gradually ſoftened by water: and it is owing to this circumſtance alone, that ſtone-marls fall to pieces in time, when expoſed to the air.

But if marl be expoſed to the action of a moderate fire, the clay becomes hard, and no longer capable of abſorbing water; ſo that the marl, if not of a very pure ſort, or ſuch as contains only a very ſmall proportion of clay mixed with the ſand, will become firmer after burning, and be in this ſtate with more difficulty reduced to powder. Marl therefore is fit to act as a manure without any other preparation than digging it from the pit, and ſpreading it upon the ground; whereas lime-ſtone requires to be reduced to a powder by burning or otherwiſe, before it can be uſed in this way. As lime-ſtone is at once reduced into much ſmaller parts by calcination than marl can be brought to at firſt, a much ſmaller proportion of lime may be equally ſpread over a piece of ground than of marl, and will produce, in equal quantities a much more ſenſible effect. Hence a much larger quantity of marl than of lime is applied at one dreſſing: from one to two hundred cart-loads being a common dreſſing for an acre, that is from three thouſand to ſix thouſand buſhels, whereas three or four hundred buſhels is a very great dreſſing of lime upon an acre.

In ſo large a quantity it is reaſonable to think, that the effects of the marl will be longer felt than thoſe of the lime: for the marl being gradually broken into ſmaller pieces every year, will ſucceſſively mix with the ſoil, and produce an effect ſimilar to an annual dreſſing with lime.

It may likewiſe be expected that a full dreſſing of marl, will produce more improvement upon light ſpongy grounds, than an ordinary dreſſing of lime; becauſe, independent of the calcareous matter, the large proportion of clay applied in this manner, may

produce some alteration on the quality of the soil. This alteration however will be different, according to the nature of the extraneous matter contained in the marl.

But all marls containing clay, it is natural to think that clay-lands will not be benefited by this circumstance; the calcareous matter alone in these cases being an useful addition to such soils. Hence light land will be in general more highly benefited than clay-land; according to the old rhyming saying—

"He that marls Sand, may buy land,
"He that marls Moss, shall suffer no loss,
"But he that marls Clay, flings all away."

Clay however is as much benefited by the calcareous matter in marl as sand is: so that a rich marl may be nearly equally beneficial in both cases.

Some clays however, free from any mixture of sand, assume the appearance of marl, and are so called, although they contain little or no calcareous matter. These may perhaps be a useful addition to light soils, but cannot be of any service to clays.

Whether lime or marl should be preferred as a manure, must depend upon the situation of the place, the purity of either respectively, the price, expense of carriage, &c. If marl be rich, and near at hand, it is in general more advantageous to him who has a prospect of enjoying his farm for a long time than lime. But when it must be brought from a distance, lime will be the cheaper manure [a].

Shell Marl is a whitish powder formed by the gradual decomposition of shells. It is therefore a calcareous substance, and is mixed with mud or parts of the mossy stratum, under which it is generally found, fragments of rotten wood, &c. From this extraneous admixture it is more or less pure. It is usually a light spongy substance, very slightly coherent. Since it admits of being spread as equally as lime, it may in general be carried with profit nearly as far, except that shell-lime of the best sort wants a great proportion of its moisture, air, &c. which greatly diminishes its weight.

Shell-lime is however a great treasure wherever it is discovered; and where fuel is scarce and dear, is of much greater value than even the best limestone, since it produces the same effect upon the soil with lime, can be as equally spread, and can be obtained at a much smaller expense [b].

Dr. Hunter has an elaborate essay on the nature and properties of Marl. From his analysis and experiments it appears that marl consists of clay, or a mixture of clay and sand, and of a real calcareous earth, differing in no respect from that of limestone and the shells of animals. According to him, the essence of marl consists in this calcareous earth. All bodies however which have calcareous earth are not marl. To entitle them to this name, they must fall into powder upon being exposed to the air. Hence the purity of marls will be in proportion to the quantity of calcareous earth in their composition.

The different proportions of the constituent parts of marl in the several varieties of it, making a choice of marls for particular soils a matter of consequence; it is desirable to know the process for discovering this proportion.

Having dried and powdered the marl to be examined, pour upon any given weight of it a small quantity of water. To this mixture well shaken add a little acid of sea salt, or any other mineral acid, except the vitriolic; and when the effervescence is over add a little more. Repeat this addition at proper intervals, till no more effervescence entues. Then put the whole, with an equal or greater proportion of water, into a filter of gray paper, the weight of which is known. When all the fluid parts have passed through, fill up the filter again and again with warm water. Thus the dissolved particles of calcareous earth, adhering to the residue, or entangled in the pores of the paper, will be washed away, and nothing but what is really insoluble will remain in the filter. This residue, with the filtre must be dried and then weighed. The difference between its weight, and the original weight of the filtre, gives the weight of insoluble parts. This being known, the proportion of calcareous earth in the same marl is evident. The proportions of clay and sand in it are discovered by subjecting the residue to a proper elutriation or washing, which is thus performed.

Having weighed the dry residue, mix and shake it well with a sufficient quantity of water. After allowing a little time for the subsiding of the grosser parts, let the water with the finest particles of clay suspended in it, be gently poured off. Add more water to the remainder, and after sufficient mixture and subsidence, pour that off likewise. In the same manner repeat the operation again and again till the water comes off perfectly pure. The substance which then remains is sand, mixed perhaps with some flakes of talc; and whatever this substance wants of the weight of the residue, is the weight of pure clay, carried away by the water in the washing.

The effervescence ensuing upon the application of acids to marl, although it shows the existence of calcareous earth, yet is no indication of the quantity of it: for the effervescence varies, according to the strength of the acid employed; but still more according to the penetrability and other more latent qualities of calcareous bodies.

The calcareous earth of marl is equally calcinable to quick-lime, whether it is exposed to the action of fire before or after its separation from the other earths which it contains.

Marl indeed has a very intimate affinity to limestone. A gentle gradation from one to the other may be easily traced out; and it will be difficult to establish the precise limits of either. Both are found in continued strata; both dissolve in part with considerable effervescence in acids, and both yield by calcination a quick-lime. There are however two remarkable differences: marl, by being exposed to air, falls into powder; limestone retains its original stability. On the contrary, limestone, after undergoing the action of fire, is reduced to powder by the application of water; marl suffers no change [c].

In Norfolk it is well known, that through the fertilizing quality of marl judiciously applied, lands which were a scanty maintenance for sheep and rabbets, have been rendered capable of fattening bullocks, and bearing great crops of corn.

The principal marls used in this county are the Chalk-Marl, such as that of Thorp-Market in the hundred of North Erpingham: and the Clay-Marl, such as that of *Hemby*, in the hundred of East Flegg. The soft Chalk also of Thorp next Norwich, commonly called Norwich Marl, and the hard Chalk of Swaffham, are used as marls.

1. The Chalk-Marls or White Marls are not found in strata, but in nodules or distinct masses, irregular, of different forms and sizes, having the appearance of a dirty, rough, friable chalk. One hundred grains contain eighty-five of chalk, ten of sand, and five of clay.

2. Clay-Marl is found in extensive beds of considerable depth. Its colour, when dry, somewhat lighter than fuller's-earth. Its contexture that of gritty fuller's-earth, interspersed with granules of white chalk. One hundred grains contain fifty of clay, forty-three of impure chalk, and seven of sand. They both fall in water, without dissolving in it; they both break readily in the open air, and mix freely with the soil: in the fire, the first burns to lime, the second to brick. In acid of sea-salt, part of the first is dissolved, but the greater part is indissoluble; of the second almost the whole is dissolved.

3. The soft Chalk, forming a bank of the river Yare, is a pure calcareous earth, ninety-eight grains out of a hundred being soluble in acid of sea-salt. The celebrated chalk of Betchworth-hill, which is fetched twelve or fourteen miles as a manure by the Sussex farmers has a residue of more than one-tenth of its weight, whereas this affords only one-fiftieth.

[a] Anderson, Essays i. 415. [b] Ibid. i. 426. [c] Essay 16.

4. The

4. The hard chalk of Swaffham is nearly a pure calcareous earth. They neither fall nor diſſolve in water, and burn to lime in the fire. They are not marls, but are uſed for manure as ſuch.

The name of Marl is in ſome places applied to all white unctuous earths, whether they contain any calcareous matter or not. Clay-Marls are commonly called Clays; and the operation of marling with theſe is called Claying. Hence one ſeeing the good effect of Clay-marl, ſuppoſes that all clays are fertile; and uſing a bed of ſtrong brick-earth for manure, which he finds of no ſervice, concludes that all clay-marls are unprofitable. Another ſeeing this, fetches marl from a great diſtance, while he has perhaps, on his own land, an earth of a quality equally good with that which he is at the expenſe of fetching.

In Norfolk the quantity of marl ſet on an acre, where it is fetched from a great diſtance, is ten or twelve loads; but where it is on the farm, twenty to thirty loads, or tons, and ſometimes forty, are allowed to an acre.

When it is known or ſuppoſed, that land, from having been recently marled, or from ſome other cauſe, is not improveable by marl alone, it is made into a compoſt with dung; and this has been found to anſwer.

They judge that land requires marling, by its producing Buddle or Corn-Marigold, and Smart-weed (Polygonum perſylvanicum). Marl certainly extirpates theſe weeds, and checks quicks, quich or couch (Triticum repens).

Marl is ſet on for turneps, for barley, and frequently upon the ſecond year's lay for wheat.

The expenſe of marling muſt vary with the quantity, diſtance and ſtate of the pit. Suppoſing twenty-five loads an acre to be ſet on, the diſtance from a quarter to half a mile, the expenſe of caſting 3d. a load, and that a team draws out and ſets on the twenty-five loads in two days, the whole expenſe of marling an acre will be 40s.*

Mr. Young concludes from the minutes made in his Eaſtern tour, that marl agrees with both ſtiff and light ſoils. The great ſucceſs attending it in Norfolk ſhows how well it anſwers on ſands and light ſandy loams: but numerous experiments on heavy and light land, prove it beſt on the former. It has a ſtrong effect in mellowing the land, and making it work better; by which we are to underſtand that it renders wet lands drier, and ſtiff ones more friable; ſo that both may be ploughed earlier in the ſpring, and one earth have the effect in pulverization of ſeveral. It alſo appears to clean the ſoil of weeds; though whence this ariſes is difficult to conjecture, ſince it is a weak ſolvent in compariſon with lime.

From experience of marl on various poor ſands in Norfolk, it appears not merely to improve by giving them tenacity, but to be a great fertilizer: it is difficult to comprehend how mere adheſion of parts, naturally poor, can produce ſuch great crops; but the quantity of rich ſoil carried on is ſo great, that it creates in a manner a new ſtaple. The duration of the effect indeed ſeems to depend much on quantity. On ſand in Norfolk it laſts twice as long as on loam in Surry, &c. The ſame quantity will laſt longer on a ſtiff ſoil than on a looſe one; as a dreſſing of yard dung laſts longeſt on a ſtiff true tile clay.

The expenſe of marl at ſome places is very great. About Yarmouth, in Norfolk it is 7s. 4d. a cart-load. About Colcheſter they have it from Kent, it coſts them from 7s. to 9s. a waggon-load, they carry it ten miles, and lay ſeven waggon-loads on an acre.

Marl has been much uſed in Staffordſhire for ages back. In many places, they ſay, the land has been over-marled and is rendered harſh; this is reſtored by fallowing and liming. It is in general only in loamy ſoils that a true marl is found; in mixed gravelly ſoils they have a friable brick clay, which is uſed on ſuch ſoils with good effect: the quantity laid on is generally one hundred and twenty-eight cubic yards on an acre, which adds nearly an inch to the ſtaple of the ſoil; the expenſe is about 25s. an acre, beſides carting out, which is worth 30s. an acre more. It is thought to be much more adapted to tillage than paſture, and its good effects on corn-lands are long viſible: in thin light lands it endures for ever, as it not only conſolidates the ſoil, but gives it ſtaple*.

Marl is the foundation of improvements in agriculture in Lancaſhire and Cheſhire. They have ſeveral varieties of it, valuable in proportion to the calcareous matter which they contain, or the nature of the ſoil to which they are to be applied. To ſtiff clay-lands the blue or reddiſh ſtare-marl, or ſhell-marl, containing much calcareous earth with ſome ſand, are more beneficial, but to light ſands ſtrong clay-marl is more genial.

Barren ſands and poor heaths have been rendered productive by marl, but at a great expenſe: indeed there is reaſon to believe that the greateſt part of the ſouthern diſtrict of Lancaſhire has been reclaimed by it.

The general cuſtom is to lay upon the great Cheſhire acre of eight yards to the rood, from three to ſeven roods of ſixty-four ſquare yards each. From four to five roods may be conſidered as the average quantity; but it ought to be in proportion to the quality of the ſoil and of the marl. A Cheſhire acre contains two acres, eighteen perches and a half ſtatute meaſure. They lay it upon graſs-land, which is intended to be broken up the enſuing ſpring. Sometimes a coat of marl is ſpread upon the green-ſward, and left unploughed many years; in this caſe the graſs ſometimes receives conſiderable detriment, the marl ſinking down in a body without incorporating with the ſoil: though when marl has lain ſeveral years in this ſtate, the ſubſequent crops of corn have been enormous.

The general rule is to begin marling in May or June, in ſhort when ſpring ſeedings are over, continuing as opportunity ſerves during the ſummer months: it is not however unuſual to take a crop of hay firſt. In either inſtance, the effects of the marl become ſpeedily viſible by the rich verdure of the graſs. Marl is ſpread immediately, but left in a rough lumpy form, that it may be expoſed as much as poſſible to the weather: if it contains much clay, it will remain many weeks or months; but in general the rains of autumn and the froſts of winter reduce it to an unctuous but friable material, the diſperſion of which is eaſily effected with cloſing beetles, ſpades or harrows, a week or a fortnight before ploughing. By this long expoſure it is more than probable that the marl may acquire by attraction its moſt nutritive qualities. The turf, when ploughed under, anſwers the purpoſe of a rich vegetable manure.

Many of the Lancaſhire farmers ruin the land thus manured, by taking repeated crops of oats, with the interval of one ſummer fallow for wheat, by way of cleanſing the land; after which barley and oats again, ſo long as the land will produce any thing; and then laid down again with weeds and couch-graſs. Whereas their land would be kept in heart, if they would take one crop of oats, plough the ſtubble immediately to expoſe the marl to the influence of the froſt, fallow with manure for turneps; then barley, clover, wheat, turneps fed off with ſheep, and barley again with well-dreſſed hay-ſeeds and white clover and trefoil for a perennial hay, or at leaſt for ſome years. The land thus huſbanded will produce in a moſt exuberant degree, and at the ſame time is rendered perfectly clean from all weeds, without being in the leaſt harraſſed. Even poor ſandy ſoils are thus rendered capable of producing the beſt herbage, and under proper management may be depended upon in all ſeaſons.

Leiceſterſhire farmers object to marling, becauſe it is unfavourable to graſs. In Lancaſhire they can have no good graſs without it. This difference ariſes from the application. If marl, according to the Leiceſterſhire ſyſtem, be put upon a turneep fallow, and immediately ploughed under in its crude ſtate, no wonder it produces no graſs and little corn. In Lancaſhire it is expoſed at leaſt five months, and always to a winter's froſt; hence ariſes its bench to graſs.

* Marſh. Norfolk.

* Pitt, Survey of Staff. 127.

The original marlers in Norfolk, and their ſucceſſors grew rich: at preſent we are told, that the land will not bear marling twice; an idea utterly diſcountenanced by the Lancaſhire practice. And from this idea it ariſes that Norfolk is ſaid to require another ſyſtem of cropping; that turneps and clover come round too often, &c. What are we to infer from this? Probably that the ſame material, properly applied, that cauſed the original improvement will reſtore the land to its former fertility: at any rate the experiment is worth trying.

In Lancaſhire they think it a much better practice to have the marlings repeated, with a gentle covering, than to lay it ſtrong thick coat to laſt many years.

Marl does not produce its full effects upon the ſoil, till it is incorporated with it by ſeveral ploughings, and ſome or other oily manure mixed with it.

One hundred grains of Lancaſhire marl contains from forty, and a half to thirty-two ſeven-tenths of ſtony land, from thirty-nine to forty-ſeven three-tenths of clay and ſilicous earth, and from nineteen and a half to twenty-two calcareous earth[7].

Mr. Kirby, near Ipſwich, manured an old ſheep-walk with clay-marl, eighty loads an acre of thirty-ſix to forty buſhels each. It is left a year on the walk before breaking up, and then ploughed for peas.

Mr. Coke, of Holkam in Norfolk, who has marled many hundred acres, always ſpreads the marl on the new lay, that is on the ſeeds after the barley harveſt, from eighty to one hundred loads an acre, and on theſe dry ſoils it does little injury to the graſſes. By this mode, the marl is on the ground at leaſt three years before the plough enters, which is far better and more durable than ploughing it directly[8].

Mr. Macro, of Barrow in Suffolk, is convinced, that about ſeventy ſquare yards or loads of marl is the propereſt quantity to be laid on an acre, pole meaſure. If more be laid on, it will be longer before it incorporates with the ſoil, and therefore before any benefit can be received from it. The effect however of a larger quantity will continue longer.

In open fields marling ſeldom anſwers the expenſe, for this is only a beginning of improvement: by going on directly with a courſe of ploughing, which cannot well be avoided in ſhiftable fields, the marl is often buried and loſt, before it mixes properly with the ſoil, eſpecially if turned in too deep the firſt earth, of which great care ſhould be taken. Marling therefore can only or chiefly anſwer on incloſed land, that can be managed as the occupier pleaſes. In that caſe, it ſhould be laid down with clover, ray-graſs and treſoil, the ſpring twelve-month before laying on the marl, and remain at leaſt ſix months after, that it may have time to ſink into the flag, before it is ploughed up, and then there will be little danger of loſing it, as it will be in ſome meaſure incorporated with the ſoil.

No pains ſhould be ſpared to break all the lumps, and to get it fine by repeated harrowings and rollings, and to have the ſtones picked and carried away, that the graſs may get through, for ſtock to be grazing upon it, which is the great and finiſhing improvement.

After the land has been got fine, and laid ſix or eight months or longer; in February or the beginning of march, break it up, and ſow it with peas. Then fallow for turneps, giving it four or five earths, with harrowings, &c. After feeding off the turneps upon the land, ſow barley, and lay it down again with clover, treſoil and ray-graſs.

Let it lay two ſummers, after which, by either folding or dunging it, if not too poor a land, there will be a good chance for a crop of wheat: after which fallow again for turneps and barley, or rape-ſeed and oats; and ſo on, always bearing in mind, that taking two following crops of corn, without a fallow or ſummer grazing, will ſoon bring new improved land to its former unpoveriſhed ſtate[9].

Let us not ſuppoſe either that Marl is of modern application in agriculture, or that no one before our times could make an experiment. That good old practical writer Walter Blith calls it a gallant manure. Obſerves that ſlipperineſs or greaſineſs is no infallible ſign of its goodneſs; but that the trueſt ſign is its *incompoundneſs*; "and if it flack alſo immediately after "a ſhower, and ſhortly after turn to duſt after it is "dry again, and doth not congeal and conglutinate like "to tough clay, but diſſolve, fear not the operation, "adventure the experimenting of it, the fruit will be "anſwerable to thy hopes."

He then relates an experiment of his own upon a miſerably poor gravelly paſture with ſome red marl, which he found in an old clay pool. On part he laid the mud from the pool, ſome he dunged, ſome he folded, the reſt he marled except one land which he did not manure at all. He brought the whole into good tillage, and ſowed it with wheat and rie mixed. The folded land produced the beſt crop, the next that which was dunged, the muddied land came in third, and the marled land laſt, though the crop on that was reaſonably good: but on that he laid nothing, he reaped nothing, not ſo much as ſtraw. The next year he ſowed barley, and upon his marled land was moſt gallant corn, ſo was his muddied land, the muckied land was the worſt by far; on the unmanured land he ſowed oats, and reaped nothing. Then he marled the lands that had been muckied, and the land which had not ſoil laid upon it; which brought forth as gallant corn as England yielded. After three or four crops the mud decayed alſo; he then marled it, and had the ſame fruit as afore ſaid. The marled land he kept in tillage nine years, without any addition of compoſt or ſoil, and had as goodly corn as ever grew; and ever ſince, with ſome ſmall addition of ſold or manure, that has out-ſtripped all the reſt[1].

It has been ſhown above that true Marl conſiſts of calcareous earth, clay and ſand in different proportions in the ſeveral varieties. The calcareous earth is involved as it were in coatings of the clay. May not this covering, by defending it from the ſudden action of the acids contained in the ground, and preventing the too rapid effects of the calcareous earth itſelf on the putreſcent and oily matter of the ſoil, account for the greater permanency of this compound than of calcareous earth alone either in a cauſtic or mild ſtate? For although it appears that marl does not form any ſalt with the acid of the air, even from long expoſure to the atmoſphere, yet it is probable that when powdered and mixed with the ſoil, it will not only unite with the acid which it may find there, but alſo attract it from the air.

This ſuggeſted to Dr. Hunter an idea that where natural marl could not be obtained, an artificial compoſition might be made, that ſhould anſwer nearly the ſame purpoſes in agriculture.

Many countries which contain no marl, have plenty of clay, where lime or chalk may be procured at an eaſy expenſe; and ſand, which is of leſs importance, and not always found in marls, is to be met with in moſt diſtricts. Clay, by the addition of water, becomes ſoft and ductile; in this ſtate it may eaſily be mixed with any portion of chalk or ſlaked lime, and a due quantity of ſand. The proportions may be different, according to the nature of the land to which the marl is to be applied. For light lands a greater quantity of clay will be proper: for ſtiff ſtrong land more calcareous earth and ſand; and for very ſtrong clay it may be ſufficient to apply a mixture of calcareous earth and ſand, with little or no clay.

The lime ſhould not only be ſlaked, but expoſed to the air, and often turned for ſeveral months.

The quantity of clay and ſand together in good marls is not great; in ſome one-third, in ſome one-fifth, in others not above one-ſixth or one-ſeventh of the whole maſs.

This artificial marl may be made, either by incorporating the chalk or lime with the moiſtened clay by kneading or beating; or elſe by throwing layers of lime or chalk and clay alternately, and then expoſing the heap during the winter to the weather, by which

[7] Holt's Reports, 112 to 125.
[8] Young's ann. 2. 117. 370.
[9] Ibid. 1. 266.
[1] England's Improvements, p. 137.

means it will moulder down, and become a ſufficiently uniform maſs.

When we conſider the ſolvent power of quick-lime, this mode of producing an union between the calcareous and argillaceous earths will appear very feaſible [1].

CRAG

Is a ſort of Shell-Marl, being chiefly ſhells whole or in a decaying ſtate mixed with calcareous earth, which probably is nothing but the ſhells perfectly decayed. The benefit of it, in Suffolk, for turneps, on a poor ſand, has been found equal to that of dung; yet the greateſt effect was on a moory bottom. The Sandlings, a tract of ground in that county near Woodbridge, ſeems to be upon a foundation of this red ſhell-marl or crag. There are very large deep pits on every farm in this diſtrict, whence immenſe quantities were dug for its improvement, when firſt broken up from its waſte ſtate of heaths at 4d. an acre, to fields covered with fine crops of turneps, carrots and corn, at 5l. 10s. and 15l. an acre. The uſe of crag is however dropped here, except for taking in walk land, as they call it, or ſheep-walks. On old improved lands they never lay it on alone, but mix it with dung, earth or ouze; thinking that it makes light lands blow more [2].

Mr. Young, in his Eaſtern tour, ſays that Crag is dry and not in the leaſt ſoapy, that it does not effervesce in acids, and does not fall in water; that notwithſtanding this, all the effects and even more produced in Norfolk by ſixty, eighty and one hundred loads of Marl, are gained in Suffolk by ten or twelve of this; and that it laſts even longer, which they have diſcovered from an idea, probably a falſe one, that land once cragged, will not bear a repetition of it, except in a compoſt with dung; and accordingly they have many fields, in which it has laſted with ſuch additions, fifty, ſixty and even one hundred years. The nature of the poor ſands in that country is quite changed with it, and they gain an adheſion, which they retain for ever. It is alſo a great fertilizer, as appears from the great and ſudden increaſe in the crops after it.]

SHELLS and SHELL-SAND.

Sea-ſand and ſhells are in ſeveral parts of England uſed to great advantage, eſpecially in Devonſhire, where they are at the expenſe of fetching the ſand and ſhells on horſes backs, twelve or fourteen miles. The land on which they lay this manure, is a ſtrong loam inclining to clay.

Coral, and ſuch kind of ſtony plants which grow on the rocks, are very beneficial to land; but as theſe bodies are hard, the improvement is not the firſt or ſecond year after they are laid on the ground, becauſe they require time to pulverize them before they can mix with the earth to impregnate it. Therefore dreſſings of this kind are ſeldom uſed by tenants, who want to reap the fruit of their labour as ſoon as poſſible. But theſe manures are much better for cold ſtrong land, than for that which is light and ſandy. In ſome countries, at a great diſtance from the ſea, have been diſcovered great quantities of foſſil ſhells, which have been dug out of the earth, and uſed as manure, which have improved the ground a little, eſpecially ſtrong land.

Where the land lies near the ſea, ſo that either ſand, ſhells, corals, wrecks, or ſea-weeds can be obtained at an eaſy expenſe, they are by far the beſt kinds of manure, becauſe they enrich the land for ſeveral years; for as their ſalts are cloſely locked up, they are communicated by degrees to the land, as the heat and cold cauſes the bodies to pulverize, and fall into ſmall parts; ſo that where land and ſmaller kinds of ſea-weeds are uſed, if they are laid on land in proper quantities it will enrich it for ſix or ſeven years; but ſhells, corals, and other hard bodies, will continue many years longer.

[Mortimer mentions three ſorts of ſea-ſand uſed in the Weſt of England for manure. That about Plymouth and the ſouthern coaſts is blue, or gray like aſhes. Weſtward, near the Land's-end it is very white, and in Scilly gliſtering. On the north ſea, from about Pariſtow, and eaſtward to Lundy, it is of a brown, reddiſh, yellowiſh colour. In Falmouth, near St. Maw's there is a ſand or rather coral, that lies under the Ouſe: the red is reckoned the beſt, the blue next, and the white worſt. All theſe ſands are compoſed chiefly of ſhells. When they lie near they put on about ſixteen tons upon an acre, and leſs, as low as one ton, as the diſtance is greater. They ſpread it as ſoon as it is got home, commonly take four crops of corn from it, and then lay the land down for paſture, for ſix or ſeven years, before they plough it up again [3].

Shell-ſand is very common on the eaſt coaſt of Scotland. All along the coaſt of Fife, eſpecially about St. Andrew's. On the north coaſt of Aberdeenſhire. In Banff-ſhire, and all along the coaſt of Sutherland and Caithneſs, the ſands upon the ſhore conſiſt almoſt entirely of ſhells [4].

Cockle-ſhells are laid on ſtiff clays in the Iſle of Sheppey thirty cart-loads to the acre.

All ſhells are principally calcareous earth, and when burnt afford the beſt of lime. In a recent ſtate they are of little value as a manure, unleſs they are broken very ſmall; but in a decayed ſtate they reſemble ſhell-marl.

Upon deep loams and ſtrong clays their operation is ſimilar to chalk or marl; but upon light gravels or ſands, little benefit is to be expected from them, unleſs they are previouſly made into a compoſt with dung, clay or loam. When ſuch lands are in graſs, top-dreſſings of ſuch a compoſt will produce great effects; and if judiciouſly treated afterwards with dreſſing of any of the different earths, their value will be much improved; and the thinner the ſoil, the greater will be the profit ariſing from this management. On clay paſtures, ſhells in their ſimple ſtate will correct acidity, deſtroy ruſhes, and render the ſoil leſs retentive of moiſture.

When ſhells are burnt they are in the ſtate of lime, and muſt be uſed as ſuch.

Sea-ſand is an excellent manure on a ſummer fallow for wheat: but being repeated two or three times loſes much of its good effects, without a change of tillage [5].

Straw being ſcarce at Yarmouth, they litter their ſtables with ſea-ſand; as the bed becomes ſoiled or wet, freſh ſand is ſcattered on, until the whole is in a manner ſaturated with dung and urine; the ſtall is then cleared, and a freſh bed of ſand laid in. Thus muck of a quality ſingularly excellent is produced [6].

Sea-ſand is much uſed by florifts in Holland, where they draw their parterres into ridges before winter, and ſpread it on the tops of them.

SAND

Can ſcarcely be conſidered as a manure; it is however beneficial upon all clays, and other tenacious ſtiff lands, by ſeparating their parts, and deſtroying their coheſive quality; by which means the ſun, air, and froſt penetrate them the better.

Sand is likewiſe of great uſe upon rough coarſe meadows; nothing fines the ſurface more, or produces a thicker ſward of Dutch clover [7].

The beſt ſand is that which is waſhed out of highways, or from hills by the rains, or that which lies in rivers.

Mr. Bligh adviſes, for the increaſing of ſoil in winter, where ſheep cannot be folded, to have a ſheep-houſe to feed them in, into which he would have brought twice a week ſeveral loads of ſand out of the highways, ſtreets, or ſand-pits, which by the farmers of the ſheep's dung and urine will make an excellent manure for cold clay-lands [8].

One hundred and ſixty loads of ſand upon mooriſh paſture land, and forty upon clay land, wrought wonderful effects, and produced white clover in great abundance [9].

[1] Geor. Eſſay. 1. 449.
[2] Young's Ann. 2. 119. 139.
[3] Huſbandry, ch. 10. p. 85.
[4] Jenkinſon in Y. ann. 6. 247.
[5] Kent's hints, 78.
[6] Mortimer, ch. 9. p. 83.
[7] Legrand, Y. ann. 4. 413.
[8] And. Eſſ. 1. 431.
[9] Marſh. Norf.

In a converſation which I had with Kliyog, the Swiſs rural Socrates, as he is called by Dr. Hirzel, I found that the mixture of ſand with his ſtubborn clay land was one of his principal improvements. I examined the ſand, and could not find that it had any fertilizing qualities in the ſmalleſt degree; it acted therefore merely by ſeparating the parts of the clay.

CLAY.

As Sands are an improvement to Clays, ſo on the contrary Clays are an improvement to gravelly and ſandy lands, by making them more ſolid and tenacious. I have frequently remarked clayey and ſandy grounds lying almoſt contiguous, without any attempt having ever been made to make an experiment on this obvious interchange of ſoils.

Mr. Legrand of Guiſton-houſe near Sandwich has uſed clay with aſtoniſhing ſucceſs upon a ſoil almoſt entirely ſand: but it is not a ſingle or ſlight dreſſing that will do any good: one hundred and ſixty loads an acre make a wonderful improvement [a].

It muſt be remembered that Marl and Clay are often confounded, and that marling is frequently called claying.

The extent to which claying has been carried in the land diſtricts of Suffolk is very conſiderable. An excellent cultivator near Bury, though not on a very large farm, has carried 140,000 loads. But when this clay is not of a good ſort, that is, when it has very little clay in it, but is rather an imperfect hard chalk, there are great doubts how far it anſwers, and in many caſes it has been certainly ſpread to little or no profit. The uſual quantity is from ſixty to eighty, and ſometimes one hundred loads, of thirty-two buſhels, to an acre. The duration, and indeed the whole effect, depends much on the courſe of crops. If the plough be too freely uſed, and corn ſown too often, it anſwers badly, and the effect is ſoon loſt; but with good management it laſts twenty years. In many caſes, a courſe of fallow and rie or light oats is converted to fine barley, clover and wheat, and the produce multiplied twenty fold: but the caſes in which the return has been inadequate are not a few: and on ſoils that will yield ſainfoin, it is more profitable to cultivate that, than to clay the land for corn [b]. Probably this clay was more properly a clay-marl.

In ſtiff deep clays, where manure is not to be had in ſufficient quantities, and fuel is cheap, it may be no bad proceſs to burn ſome of the clay, which will not only break the coheſion of the ſoil and make it more eaſily cultivated, but will alſo render it leſs retentive of moiſture, and thus more friendly to vegetation. Upon thin ſoils, it is evident, any attempt at burning would be highly improper.

Mr. Belcher informs me that he has found a ſurpriſing effect in half-baking earth, which renders dead barren earth immediately productive. It muſt be only half-baked; for if fully baked, it in a great degree reverts to its priſtine ſterility. He does not mention whether it was clay or vegetable earth that he baked: the nature of the latter we know from paring and burning, but we have not had experiments enough to aſcertain the effects of burning clay.

GYPSUM, Pliſter or Pliſter of Paris

Is calcareous earth united with the vitriolic acid. It does not effervesce with acids, and is not without difficulty ſoluble in any. When heated a little below ignition, it undergoes a motion ſimilar to that of ebulliſion, from the diſſipation of its aqueous parts, and falls into powder. If taken up, when this motion ceaſes, and ſprinkled over with water, it ſoon concretes, and hardens by reaſon of its ſudden cryſtallization. It is entirely ſoluble in a large quantity of water, and may be compoſed by ſaturating the vitriolic acid with calcareous earth. What we commonly call hardneſs in water is owing to gypſeous ſelenites diſſolved in it.

Gypſum has lately been extolled in ſeveral foreign publications, as a manure of the higheſt value in Germany and particularly in America, where, according to Mr. Chancellor Livingſton, of New-York, it has produced a new era in agriculture [c].

This gentleman, after having continued his experiments three years, concludes, 1. That Gypſum in ſmall quantities has no viſible effect on wheat or rie.

2. That it is uniformly beneficial to Indian corn, unleſs in very rich or wet ſoils.

3. That it is beneficial to flax, on dry poor ſandy land.

4. That it is peculiarly adapted to the growth of clover on all dry ſoils, or even on wet ſoils in a dry ſeaſon.

5. That limeſtone pulverized has ſimilar effects with gypſum.

6. That the effects of gypſum as a manure are hardly perceptible in the vicinity of the ſea.

In the experiments of George Logan, Eſq. it appears that gypſum was uſeful even to crops of wheat and rie. This gentleman remarks, 1. That there is no difference between the American gypſum, and that which he had from Europe. 2. That it acts as an immediate manure to graſs, and afterwards in an equal degree to grain. 3. That one dreſſing will continue in force ſeveral ſucceeding crops.

He adds, that its not producing any remarkably beneficial effects, when uſed as a top-dreſſing to grain, may ariſe from two cauſes; firſt from the ſmall quantity made uſe of, which is loſt in the rough ground; and ſecondly, from the ſhort time of its application. That it has been found of advantage to Indian corn, but that it is neceſſary to apply it immediately to the corn, as it appears above ground, and that in a conſiderable quantity. That early in april is preferable to any other ſeaſon for applying it to paſture, for the graſs being juſt ſhooting at this ſeaſon, the ſmall particles of the gypſum are retained about the roots, and prevented from waſhing away. On ſtiff clay ſoils it will produce an increaſe of vegetation, but not ſufficient to pay the expenſe of the manure [d].

In general it is ſaid to have had great effects on what they call their worn out lands in America.

After having broken the plaſter into ſmall pieces by a hammer or ſtamping-mill, they reduce it to powder in a common griſt mill, and in this ſtate ſpread it upon the ground in a calm day. In miſty weather it will ſpread to moſt advantage [e].

The moſt approved quantity for graſs is ſix buſhels to the acre. It has been uſed in the ſtate of Penſylvania ever ſince the year 1778, if not ſooner, and laſts from ſeven to ten years, but its continuance very much depends on the nature of the ſoil to which it is applied [f].

By a letter to Capel Loffft, Eſq. it appears that Plaſter was come into general uſe as a manure in Penſylvania, in the year 1789; and that the grounds within ten miles of New-York, which were deemed old worn out fields, have by the uſe of this manure been ſo recovered as to ſupport fifty head of cattle, where in its former ſtate one could not live [g].

When I was in Switzerland in the year 1778, I found it in common uſe on their artificial paſtures of lucerne, &c. at leaſt in the neighbourhood of Geneva.

It is ſaid to have been diſcovered as a manure in Europe by Mr. Meyer, a clergyman of uncommon merit in Franconia, in the year 1768. It has been applied with ſignal ſucceſs in Germany, Switzerland, France, &c. and if it has not met with the ſame ſucceſs in England, it muſt probably be, becauſe the calcareous principle prevails here ſo generally [h].

Sir Richard Sutton and others who have tried gypſum here, have not been able to trace any effects from it. Mr. Proctor Anderdon of Henlade, Somerſetſhire, concludes from ſome experiments, that on many plants, or in many ſoils, gypſum powder will have no effect; but that it has ſome effect on old clover in a loamy ſoil; and that a greater effect may reaſonably be ex-

[a] Y. Ann. 2. 211.
[b] Young's Surrey, 28.
[c] Wilkinſon in Y. ann. 21. 200.
[d] Young's ann. 20. 89. American Muſeum, vol. 6.
[e] Y. ann. 10. 316, 319.
[f] Ibid. 17. 89.
[g] Ibid. 16. 300.
[h] Kirwan, Mem. Iriſh Acad. and Y. ann. 23. 146.

pected from it, when applied to younger plants of the ſame ſort or nature.

This agrees with the American accounts, Clover there being the crop more benefited by gypſum than any other. Calcareous earth indeed is generally acknowledged to be favourable to the growth of clover; but the addition of the vitriolic acid, a ſuſpected poiſon in agriculture, would naturally have induced the agricultural chemiſt to have rejected gypſum as a manure[a].

According to Kirwan, the rationale of its effects may be deduced from its extraordinary ſeptic power, for it is found to accelerate putrefaction in a higher degree than any other ſubſtance.

Mr. Smith, of Woodſtock near Sittingbourne in Kent, affirms (in the year 1795) that from the trials he has made of it for three years paſt on chalky and dry calcareous ſoils, laid down with ſainfoin or clover, the effects have been aſtoniſhing, and entirely correſpond with the American accounts[b].

He applied ſix buſhels to an acre; the Americans ſeem to have been uſing ſmaller quantities, even ſo low as one buſhel to an acre.

Mr. Belcher recommends ſix buſhels of gypſum powder to be ſown on an acre, from the middle of april to the middle of may, and affirms that it has aſtoniſhing effects on clover, ſainfoin and other leguminous plants, commonly called artificial graſſes.

In the few inſtances where gypſum has hitherto been uſed in England, it is ſaid to have produced aſtoniſhing effects in ſome, in others no viſible advantage has been derived from it, and in ſeveral it ſeems to have done miſchief.

Upon lands where no ſtimulating ſubſtance has been applied, and which contain little or no calcareous earth, gypſum will be a good manure: accordingly in America, where the ſoil in moſt places is compoſed almoſt entirely of vegetable earth, from decayed herbs, leaves and branches, and where ſcarcely a particle of calcareous earth is to be met with, gypſum will produce good effects: but upon lands which have been long in a ſtate of cultivation, which have been frequently manured with ſubſtances containing much alkaline matter, its effects will not be perceptible: but where acid prevails, its bad effects will be viſible at once. Gypſum therefore is a manure that can ſeldom be uſed with advantage in this country upon arable lands; there being few ſituations in which the ſoil does not either contain calcareous matter in itſelf, or has received it as a manure.

Ashes,

Of all kinds of vegetables, are an excellent manure or top-dreſſing for land.

Pot-aſh, or *fixed Vegetable Alkali*.

In places far removed from the means of improvement, a ſubſtitute for common manures, that is of eaſy carriage, and can be had at a moderate expenſe, muſt be valuable.

From experiments that have been made it appears that 2000lb. of pot-aſh are ſufficient for an acre of ſtrong land; for lighter ſoils much leſs is required, if laid on by itſelf; on theſe however a compoſt of this and oil, incorporated with mould, will be the beſt way of employing it. Upon ſtrong clays and deep loams however, it ought always to be applied by itſelf. When the expenſe of carriage is conſidered, pot-aſh will often be found a cheaper manure than lime. In one reſpect it is ſuperior, for the union of pot-aſh with all the different acids forms a neutral, which is in ſome degree uſeful in vegetation; whereas when lime meets with the vitriolic acid, it is almoſt entirely loſt.

A conſiderable part, if not the whole of what is uſed in manufactures, glaſs excepted, will be uſeful as a manure, after the purpoſe of the manufacture is ſerved; particularly in bleaching, the alkali of which will be found improved, in conſequence of the mucilage or oil which it has imbibed from the cloth.

Kelp is a mixture of foſſil alkali or ſoda, and ſea-ſalt, beſides earth or ſtones. All marine plants abound with this alkali.

[a] Wilkinſon in V. ann. 21. 202.
[b] Young's Ann. 24. 359. and 25. 334.

The operation of kelp depends upon the ſame principles as lime, pot-aſh, &c. Like them, it produces the beſt effects upon deep loams or clays; and the benefit will be ſtill farther increaſed, if lime be made uſe of along with it. Kelp ſhould be broken very ſmall with large hammers, or by paſſing it through a mill.

Bleacher's aſhes or refuſe, conſiſt principally of the hard undiſſolved parts of pot-aſh, kelp, weed-aſh and barilla. Alone they are too ſtimulating, and ought never to be uſed but with earth or earth and dung; they anſwer well with blood, garbage, and putrid animal ſubſtances. They are generally laid upon fallows for wheat. The greateſt advantage derived from them is upon clay or deep loams. Upon ruſhy grounds, or coarſe wet meadows they will be found particularly uſeful.

Soap-aſhes are in ſome meaſure the ſame as the refuſe of bleach-fields. They principally conſiſt of lime, which is uſed by ſoap-makers to deprive the alkaline ſalts of their fixed air: the addition of lime to ſoap-aſhes is therefore unneceſſary. They are generally made into compoſts with earth and well fermented dung, in the proportion of two loads of dung to one of earth; the aſhes are then added, in the quantity of one load to ten of this mixture, turning and incorporating the whole completely.

The quantity neceſſary for ſtrong clays or deep loams is ten cart-loads to an acre. If the dung has been well fermented, perhaps the moſt profitable way of uſing this compoſt will be as a top-dreſſing harrowed in with the grain; taking care however that the cauſtic quality of the aſhes is properly blunted by a ſufficient mixture of dung and earth.

Theſe aſhes, when beat ſmall, may be made into a rich compoſt with oil and earth, and uſed as a top-dreſſing for young crops. They will deſtroy flugs and vermin of every deſcription: and are therefore highly valuable on lands where the early wheat is injured by the worm. Laid upon graſs-lands in the end of autumn, this manure produces a deep verdure during the winter, and an early vigorous vegetation in the ſpring; it is therefore particularly calculated for cold wet paſtures.

Soap-ley conſiſts of alkaline ſalts and oil, and is produced by the ſolution of ſoap in water. The quantity of this that is daily waſted is immenſe, and forms a contraſt to the ſtrict economy of the Chineſe, where even the ſoap-ſuds of the barbers are ſaid to be carefully preſerved. It ſhould all go to enrich the compoſt dunghill.

Fern-aſhes. No vegetable affords ſo much pot-aſh as Fern, but it is better to uſe it as litter for manure, than to burn it for the aſhes.

Fern-aſhes ought not to be uſed by themſelves, unleſs upon the heavieſt and deepeſt ſoils, for corn-crops, or upon wet ſour meadows, upon other lands they ſhould be mixed with dung and earth.

Fern ought to be cut before it decays, either for litter or the aſhes; for all plants that contain much fixed alkali, when withered, are liable to be robbed of it by every ſhower that falls[a].

Peat-aſhes are principally employed as a top-dreſſing upon clover or clay-lands, and when rain falls immediately, the crop is benefited by the uſe of them: but upon thin ſoils, when dry weather ſucceeds, they produce no effect, or even do harm, eſpecially if they have been prepared from the richeſt ſort of peat.

The peat of ſome moſſes contains a conſiderable quantity of fixed alkaline ſalts, whilſt that of others contains ſcarcely any. All peats however agree in affording more or leſs alkali when burnt, and the value of their aſhes depends entirely upon the quantity of fixed alkali which they contain; for the burning of peat, like every other vegetable ſubſtance, is utter deſtruction to its other component parts: the oil being diſſipated in ſmoke, and the vegetable earth rendered entirely uſeleſs.

The fixed alkali contained in peat is from a twenty-ſecond to a thirty-ſecond part of its weight. Where

[a] Bath papers, 1. 153.

the peat is so rich as to afford a twenty-second part, it is an object to burn it for the ashes; but less trouble and very small expense will subject it to the process of fermentation, by which the oil and vegetable earth will be saved. This however can be done only in the neighbourhood of a moss, the carriage of the peat in substance to any considerable distance being too heavy an expense.

Eight or ten bushels of rich peat-ashes are sufficient to dress an acre. They should be laid on in the spring, before the plants have attained any great size, in wet or at least cloudy weather. Or they may be sown and harrowed in with the grain; in which case a greater quantity will be requisite than when they are used as a top-dressing[1].

Ashes burnt from fat black peat, such as is dug about Newbury in Berkshire, and in some parts of the Isle of Ely, are so rich, that farmers are afraid to lay them on barley, nor do they dress their wheat with them till late in the spring. If sown too thick, and a dry season should ensue, they are apt to burn the tender fibres of the corn. They destroy slugs on peas, &c. better than any thing[2].

Pease-ashes are an excellent improver of grass lands, particularly of clover and sainfoin: the quantity from fifteen to twenty-five bushels, according to the condition of the land. They are bought on the spot from 2d. to 4d. a bushel, according to their goodness.

This manure has been known in Berkshire near a century; they fell into disuse from having been laid on in quantities too great, but are now generally adopted by every farmer within a reasonable distance of the Berkshire peat-mosses[3].

Peat-ashes are delivered on the land, about Dunstable, at 4d. the bushel, struck: forty bushels is a complete dressing for an acre, and costs about 16s. They greatly improve dry chalk soils, but do little good on wet land or cold sward, or on hot sandy lands.

Peat-dust, or peat ground to powder, answers equally well with the ashes, in the same quantity. It is esteemed the best manure for asparagus, onion beds, and flowers, mixed with dung; and destroys thistles, if laid on in sufficient quantity, or repeated[4].

Wood Ashes are useful as a manure, principally on account of the pot-ash which they contain. The ashes of fir, pine, &c. have very little of it; but oak, ash, and most of the hard woods abound in pot-ash.

Except upon the strongest and most tenacious soils, the rich kinds of wood ashes are too stimulating, and are best used in a compost with earth and dung or any animal substances.

They effectually correct sour soils: consequently upon poor meadows or ruthy grounds, they produce effects similar to lime; and if mixed with quick-lime, their beneficial effects will be heightened.

Coal Ashes are well adapted to clays and deep loams, by breaking the tenacity of the soil. On light soils they should never be used but in form of compost with earth, or earth and dung. Where much sea-weed, or the refuse of mustard manufactures can be obtained, an excellent top-dressing may be made with these, the shells of the mustard-seed and lime[5].

Coal-ashes cost in London from 6s. to 14s. the waggon-load. They are distributed on the land about Dunstable with a shovel from a cart or wheelbarrow; but the common way is to sow them by hand.

From fifty to sixty bushels is a complete dressing for a statute acre. They succeed well sown on clover in march or april, on dry chalk lands; and do much good to sward, applied during any part of the winter or spring. They are never used, about Dunstable, on wheat. In very dry seasons they do little good except on cold sward, which they always improve. They require rain after being sown to set them to work[6].

Coal-ashes are of great use in the kitchen garden, where the natural soil is too strong and stubborn.

Mortimer and Bradley both agree that they are one of the best and most lasting manures for cold lands; and the surest to kill worms, &c.

Even so early as Worlidge's time they were brought to form an excellent compost with horse-dung, and to kill moss and rushes in wet grounds.

Ashes from kilns of any sorts, but particularly where wood, straw or furze are burnt, are a good manure for most kinds of soil[7]. In short the ashes of all vegetables are an excellent manure; so that where ground is overrun with bushes, brambles, heath, &c. if these be grubbed up in summer, and spread abroad to dry, then gently consumed to ashes, and these ashes spread on the land, they will greatly improve it. [See more of this under *Paring and Burning*.

Sea-Salt.

It is a subject of dispute whether this, or any other neutral salt be of any use as a manure. We have many experiments and conclusions on both sides: in those which are favourable, it was observed, that it, the part most loaded with bittern, that was used.

From Sir John Pringle's experiments, it appears that sea-salt, if below, or exceeding a certain proportion, is a powerful septic. How whatever promotes putrefaction must be a manure. But the septic quality of sea-salt is far inferior to that which the bittern or muriate of magnesia, and the muriate of lime, both which abound in the refuse of sea-salt, possess. These are perhaps the most septic of any bodies with which we are acquainted, and from their extreme attraction for water, have a tendency to keep land perpetually moist. Reasoning then from the qualities of bodies, we should esteem the *refuse* of salt as itself, a powerful manure. But applied in such quantity as to saturate the soil, it would kill every plant, and continue to prevent vegetation, until its excess be washed away.

However this may be, so much is certain, that sown upon pastures, salt or its refuse, if it did not increase the herbage, would at least render it highly palatable to cattle.

Nitre or *Saltpetre*, as appears from Dr. Home's experiments, mixed in the proportion of one ounce to six pounds of earth, rather retards than promotes vegetation; yet when added in small quantities diffused in water, it promoted vegetation considerably.

When a plant is so situated, that it is compelled to draw up any salt into its substance; or when the roots cannot extend themselves without coming in contact with saline particles, it soon languishes and dies: yet every process by which the saline ingredients in a soil are made to decompose, and assume new arrangements, contributes highly to its fertility. Of these no process is more beneficial than that by which nitre is formed. Although therefore this salt should not of itself greatly promote vegetation, yet the putrefactive process excited in the soil, and which generates nitre, is the real cause of its fertility.

Any salt whatever that is capable of exciting putrefaction, and that powerfully attracts and retains moisture, may be usefully applied as a manure. No salt promotes vegetation by entering into the substance of plants, but acts upon the soil itself. Many other salts possess the properties of nitre in a greater degree, and the most beneficial of them may be procured at small expense. All salts with metallic bases, being of a caustic nature, must be excepted[8].

Refuse salt may be had in London for 3l. 10s. the ton. It is therefore much cheaper than oil-cake. Would it not answer better? Might it not be sown and harrowed in march or april on land intended for turneips? but certainly never with the seed, as oil-cake is. There can

[1] Report on manures. Young's ann. 8. 81.
[2] Bath papers. 2. 73.
[3] Pearce's survey of Berks.
[4] Farey in Young's ann. 25. 69.
[5] Agric. report on manures. 82.
[6] Farey in Young's ann. 25. 68.
[7] Bath papers. 2. 70.
[8] Hendrick on manures; agric. repert. 4. 317, 321.—Scandella ibid. addit. to c.

be no doubt of the propriety of throwing ſalt into all dung-hills, when they are turned over; or when the yard-dung is ſhovelled on to heaps. Suppoſe ten loads to be the quantity of dung for an acre; five, with a quarter of a ton of ſalt, would probably be better; but great attention would be neceſſary in mixing and ſpreading [a].

The reſult of ſome experiments made by Mr. Young were highly in favour of ſalt when diſſolved in water, and added to dung: and ſuggeſt an important leſſon for the addition of ſalt water to dung-hills [b].

Mr. Legrand, of Guilton-houſe, near Sandwich, having tried ſoul ſalt upon a ſandy ſoil, found ſixteen buſhels to be a proper quantity for an acre. He uſed it upon a barley tilth; ſowing the ſalt immediately after the barley. The event was perfectly ſatisfactory. It is noxious both to weeds and vermin [c].

Salt remaining after it has been uſed for preſerving pilchards, has been employed with great ſucceſs in Cornwall, in the cultivation of turneps [d].]

COMPOSTS

In huſbandry and gardening ſignify ſeveral ſorts of ſoils or earthy matter, lime, dung, &c. mixed together, in order to make a manure for aſſiſting the natural earth in the work of vegetation.

Compoſts are various, and ought to be different, according to the different nature or quality of the ſoils which they are deſigned to meliorate: and according as the land is either light, ſandy, looſe, heavy, clayey, or cloudy. A light looſe land requires a compoſt of a heavy nature, as the ſcouring of deep ditches, ponds, &c. A land that is heavy requires a compoſt of a more ſprightly nature, that will inſinuate itſelf into the lumpiſh clods.

For Gardens.

The great uſe of compoſts in gardening is for ſuch plants as are preſerved in pots or tubs; or in ſmall beds or borders of flower-gardens. As ſome plants delight in a rich light ſoil, others in a poor ſandy ſoil, and ſome in a loamy ſoil; there ſhould be different compoſts prepared, in all thoſe gardens, where a great variety of plants are cultivated: and this is much more neceſſary in countries at a great diſtance from London, than in the neighbourhood of it, becauſe there is ſo great variety of lands, within ten miles round London, which have been ſo long dreſſed and cultivated, that a ſupply of earth fit for all ſorts of plants, may be eaſily procured; but in ſome places which are at a diſtance from large towns, it is very difficult to procure a quantity of earth proper for the choicer ſorts of flowers and plants; therefore the compoſts will require more care, and ſhould be mixed a conſiderable time longer before they are uſed; that they may have the advantage of heat and cold, to meliorate and improve them; and ſhould be frequently turned over, that the parts may be well mixed and incorporated, and the clods well broken and divided.

Almoſt every one who has written on this ſubject, has directed the procuring the upper ſurface of earth from a paſture ground, as one of the principal ingredients, in moſt compoſts for plants, which is certainly a very good one, provided it has time to meliorate before it is uſed: for if this is mixed up haſtily, and put into pots or tubs, before it has had a winter's froſt, and ſummer's heat, to looſen the parts effectually; it will unite and cake together, ſo hard, as to ſtarve the plants that are put into it. For all earth when put into pots or tubs, is much more apt to bind, than when it is in beds; therefore ſhould be in proportion made looſer, according to the nature of the plants for which it is deſigned, than when it is intended for beds or borders. So that if this earth from a paſture, cannot be prepared and mixed at leaſt one year before it is uſed, it will be much better to take the earth of a kitchen-garden which has been well wrought and dunged; but this ſhould be clear from all roots of trees and bad weeds. If this earth is well mixed with the other compoſts ſix months, and often turned over, it will be fitter for pots and tubs, than the other will in twice that time, as I have frequently experienced. This earth being the principal ingredient in thoſe compoſts deſigned for ſuch plants as require a rich ſoil; the next is to have a quantity of very rotten dung, from old hot-beds; or for thoſe plants which delight in a cool ſoil, a quantity of rotten neats-dung is preferable. The proportion of this muſt be according to the quality of the earth; for if that is poor, there ſhould be one-third part of dung, but if it be rich, a fourth part or leſs will be ſufficient. Theſe, when well incorporated and the parts divided, will require no other mixture, unleſs the earth is inclinable to bind, in which caſe it will be proper to add ſome ſand or ſea-coal-aſhes to it; if ſea-ſand can be eaſily procured, that is the beſt, the next to that is drift-ſand; but that from pits is by no means proper. The proportion of this muſt be according to the nature of the earth, for if that is ſtiff, there muſt be a greater proportion uſed, but this ſhould not exceed a fifth part, unleſs it is very ſtrong, in which caſe it will require more, and a longer time to lie, and muſt be often turned over before it is uſed.

The next compoſt, which is deſigned for plants which do not require ſo good earth, and naturally grow on looſe ſoils, ſhould be half of the before-mentioned earth from a paſture, or that from a kitchen-garden; and if theſe are inclinable to bind, there ſhould be a third part ſand, and the other part rotten tan, which will be of great uſe to keep the parts divided, and let the moiſture paſs off.

The compoſition for moſt of the ſucculent plants, is prepared with the following materials; the earth from a common, where it is light, taken on the ſurface, one half, the other half ſea or drift-ſand, and old lime-rubbiſh ſcreened of equal parts; theſe, well mixed and often turned over, I have found to anſwer better than any other compoſt, for moſt of the very ſucculent plants.

The other ſort of compoſt, which is deſigned for plants that delight in a very looſe, light, rich earth; ſhould be made of light earth taken from a kitchen-garden, which has been well dunged, and thoroughly wrought, like thoſe near London, one half; of rotten tanners-bark one third, and the other part mud from the ſcouring of ditches, or from the bottoms of ponds, where the ſoil is fat: but this mud ſhould lie expoſed in ſmall heaps a whole year, and be often turned over before it is mixed with the other, and afterwards frequently turned and mixed, for eight months or a year before it is uſed.

In all mixtures, where rotten wood may be required, if the rotten tanners bark, which is taken from old hot-beds is uſed, that will anſwer every purpoſe of the other; and wherever ſand is neceſſary in any compoſt, the ſea ſand ſhould always be preferred to all other; but this ſhould not be uſed freſh, becauſe the ſalts ſhould be expoſed to the air, which will looſen the particles, and thereby render them better adapted for the nutriment of vegetables.

There are ſome who have directed the uſe of rotten leaves of vegetables, as an excellent ingredient in moſt compoſts; but from many years experience, I can affirm, they are of little uſe, and contain the leaſt quantity of vegetable paſture, of any dreſſing which is uſed. Others, who never have had any experience in the culture of plants, have directed different compoſts for almoſt every plant: and theſe compoſts conſiſt of ſuch a variety of ingredients, as greatly to reſemble the preſcriptions of a quack doctor; no perſon who has been converſant in the buſineſs of gardening, could be guilty of ſuch groſs abſurdities: for it is well known, that a few different compoſts will be ſufficient for all the known plants in the world. But thoſe who pretend to give direction for the culture of plants from theory only, begin at the wrong end, for the true knowledge of gardening or agriculture, muſt be from experience.

In making any compoſt, great care ſhould be had, that the ſeveral parts are properly mixed together, and not to have too much of any one ſort thrown together; therefore, when three or four ſeveral ſorts are to be mixed together, there ſhould be a man or two placed to each ſort, in proportion to the quantity of each,

[a] Young's Ann. v. 378.
[b] Idem, v. 143.
[c] Idem. v. 144.
[d] Idem. 27. 200.

for if two parts of any one ſort are requiſite to be added, there ſhould be two men put to that, and but one to each of the other: and theſe men muſt be careful to ſpread each ſort in ſuch a manner over each other, as that they may be exactly mixed together. Another thing which ſhould be obſerved is, never to lay theſe compoſts in too large heaps, but rather continue them in length, laying them up in a ridge, ſo that the ſun and air may more eaſily penetrate through it: and, as theſe compoſts ſhould (if poſſible) be made a year before they are uſed, they ſhould be frequently turned over, which will prevent the growth of weeds, and expoſe every part of the heap equally to the ſun and air; and the more they are expoſed to the influence of theſe, the better will they be prepared for vegetation.

[*For Fields.*

Something has been already ſaid under ſeveral of the preceding articles, on the application of various compoſts in agriculture, but more muſt be added on a ſubject of ſo much importance, ſo little underſtood, and even yet ſo partially practiſed, though it is gaining ground every day.

Compoſts are uſually made by mixing various ſubſtances with ſtable or yard dung; and hence in ſome countries are called Mixens. The moſt common materials for this purpoſe are turf pared from waſte places, virgin earth, peat earth, lime, the ſcourings of brooks, ponds, and ditches, weeds, rubbiſh of buildings, coal-aſhes, &c.

That dung alone, properly managed and applied, is a moſt valuable manure is beyond all doubt, but it certainly is not equally uſeful in all ſoils and ſituations. It is much better calculated for active than inactive ſoils. On limeſtone, chalk, &c. it meets with abundance of active materials, but upon clays, deep loams, &c. it operates beſt in conjunction with lime or ſome other ſtimulating ſubſtance.

When dung is intended for a compoſt, no attempt ſhould be made to add a large quantity of lime, earth, &c. till it is properly fermented, every addition of this kind checking the fermentation. The lime, earth, &c. ſhould be added after the fermentation is finiſhed, and the whole then carefully mixed and laid up together. In a few days a ſecond fermentation will come on, and if the mixture has been properly turned over and thoroughly incorporated, it will be fit for uſe in a month or ſix weeks.

Some judgment and attention will be requiſite, with regard to the quantity of lime and other active principles employed: for if the quantity be ſmall, their action upon the rich ſubſtances in the dung will be partial and imperfect; and if too great, a conſiderable loſs may be ſuſtained by their over action. If the quantity of earth alſo be ſuch as to preſs the dung too hard, the air will be excluded and the ſecond fermentation be impeded or prevented. It is certainly a right method to lay a good coat of earth as a foundation for the dunghill, into which the moiſture of the dung may ſoak down: and it is no bad way to make a heap of ſuch ſubſtances as can be readily obtained, apart from the dung, and to throw the moiſture of the dunghill and the urine of cattle over it[a].

Compoſts are formed in various ways. In ſome places, where there is a head or foot ridge, too high to admit the water to be rapidly diſcharged from the field, they plough it, then fill it full of lime, dung, or both, and after frequent ploughings, ſpread it upon the field. After the lime is ſufficiently mixed, the earth may be gathered into a heap with the ſpade, and mixed with dung; or the whole operation may be performed with the ſpade, which is ſtill better.

The earth or mud gathered from the bottom of ditches is excellent for compoſts. It is uſually the lighteſt part of the ſoil carried thither by water, and frequently contains a portion of vegetable matter. To this may be added the cleanings of roads, eſpecially where they are laid with limeſtone. One of the beſt materials for compoſts is Peat. This fills up the pores of a ſandy or gravelly ſoil, without diminiſhing its fruitility. Even when applied by itſelf to ſuch ſoil, peat increaſes its fertility. But in a hard clay ſoil, it ſhould be fermented with lime, or dung, or both, and frequently turned to make it mix properly. Without this precaution it dries, hardens, and cannot be properly mixed afterwards.

In making compoſts, if only one ſort of manure be uſed, it is only neceſſary to put the manure and earth in alternate layers in a long ridge; and top it ſo that rain may not waſh through it. When both lime and dung are uſed, a layer of earth ſhould be interpoſed between every two beds of lime and dung: for lime, if mixed with dung in the firſt ſtage of its putrefaction corrodes and diſſipates its effluvia. After the firſt fermentation of the dung is completed, the whole ſhould be turned to mix the ingredients; and this operation ſhould be repeated until the maſs be ſufficiently pulverized; which is done by cutting the compoſt with a ſpade in perpendicular ſlices.

All the weeds ſhould be collected from the neighbouring fields, before they run to ſeed, and mixed with the compoſt. The weeds alſo that grow upon it, ſhould be buried down in it.

Such compoſts may be uſed for any crop; and when ſufficiently pulverized are excellent for a top-dreſſing to paſture; the parts being gradually crumbled down, and beaten into the ſoil by the feet of cattle or waſhed in by rains[b].

Some are of opinion that no advantage reſults from mixing dung with earth: a bottom of earth however muſt always be uſeful to detain the moiſture that flows from the dung. Quick-lime mixed with the dung is uſeful, by keeping the mucilage in a proper ſtate, and preventing the putrefaction from proceeding too far.

The following is a good method of making a Compoſt. In a field conveniently ſituated, plough and harrow a headland, till the ſoil is well divided and in fine tilth; then take a cart-load or forty buſhels of lime freſh from the kiln, and place it in little heaps, about a buſhel in each, along the middle of the headland, at four feet diſtance from each other. Cover the heaps with four or five times their quantity of pulverized earth, and pat it down cloſe with the back of a ſhovel, ſo as to exclude both rain and air. In a few days the moiſture of the earth will have diſſolved the lime, and reduced it to a powder. If the heaps have any fiſſures in them, they ſhould from time to time be filled up, by having more earth thrown upon them, and patted down cloſe. When the lime is perfectly reduced to a powder, that and the earth muſt be chopped down with a ſpade, and intimately blended together. This is moſt conveniently done in form of a long bank or ridge, in the middle of which a large furrow or opening muſt be made ſufficient to receive five cart-loads (forty buſhels each) of good ſpit dung; when the earth and lime muſt be thrown over the dung ſo as to cover the whole. In this manner it muſt lie ſome months, or till the dung is in a ſtate of diſſolution. When arrived at this ſtate, it muſt be turned over again, well mixed, and formed into a heap or clamp to be kept for uſe. Earth, lime and dung thus managed, conſtitute an unctuous maſs of great fertility[c].

In Eſſex they are particularly induſtrious in this practice, where, as the ſkirts of incloſures ſeldom produce any corn on account of the ſhade and dripping of the hedges, and what it does produce is of little value, becauſe the birds prey upon it, they generally ſink theſe borders at leaſt a foot deep, and mix them into compoſt, for the benefit of the reſt of the land, which is more expoſed to the ſun, and leſs liable to be preyed upon by birds.

Next to theſe borders of incloſures or banks of roads, the ſcouring of old ditches, the mud of ponds, and ſediments of ſtagnant waters are valuable, eſpecially on graſs land; and a ſmall mixture of lime is well beſtowed upon it. Any maiden earth, with one ſeventh part of lime, and another ſeventh of rotten dung is good manure for moſt kinds of paſture[d].

[a] Report on manures.

[b] Hendrick in app. to report on Manures, n. 4-34.

[c] Wimpey in Bath papers, 3. 182.

[d] Kent's hints, 76.

In

In Norfolk the making compoſt dunghills is a general practice. The principal ſource of them is the ſhovelling of ditches, which is found there to be ſingularly fertile. It is not the ſediment of water from the incloſures, but conſiſts entirely of dead weeds, leaves of the hedge, and the mouldering of the bank and ſides of the ditch. The moſt barren ſubſtratum expoſed a few years in the face of a ditch bank, is changed into a rich black mould. Perhaps the ſea air, acting upon a looſe porous ſoil, may aſſiſt in producing this change. Other ſources of manure are uſeleſs turf, the backs of ditch-banks, the borders of fences in general, the ſides of lanes, the nooks of yards, &c. which in many places are ſuffered to remain the nurſery of weeds. Theſe are turned up into ridges, to rot the roots of the graſs and weeds, and to receive the melioration of the air; which done, it is carted in the ſeaſon to the dung-heap to be incorporated with it[1].

An effectual mode of raiſing a large quantity of compoſt manure, is to bed the farm yard about two feet deep with earth, and on this to cleanſe the ſtables, cow-houſes, hog-ſties, &c. and to move the cribs in which looſe cattle are fed with ſtraw about it. This bed of earth will retain the urine, ſo that when the whole is mixed together, it will all be nearly of equal goodneſs, and admirably adapted to gravelly and looſe ſoils in general, through which the eſſence of dung alone will be waſhed in one ſeaſon; a top-dreſſing of ſoot, pigeon's dung, &c. will laſt but one crop, and very rotten pure dung is little better.

On binding pebbly loams, having ſo ſtrong an adheſion, as to be what farmers juſtly call unkindly land, having the tenacity of clay without any of its excellencies, ſmall quantities of dreſſings however rich, are of little benefit; a pound of the eſſence of dung might be ſo faſt locked up in a large clod as to be rendered totally uſeleſs for a whole ſeaſon: a rich top-dreſſing of ſoot, &c. is often quite loſt on ſuch land. Nothing does ſo well with it as compoſts not kept long, carried on in very large quantities. Perhaps twenty loads on an acre may do little good, when forty loads may be effectual: for there muſt be quantity enough to keep the clods and looſe earth from uniting, or elſe the manuring is of little ſervice. Small quantities alſo raiſe no fermentation, and it is obvious of what conſequence a ſtrong fermentation completed in the ſoil muſt be to ſuch land.

Another method of raiſing compoſt dunghills is by making them into clamps. Make a layer of hedge earth from a grubbed border, two feet deep and about twelve feet ſquare, in the beginning of november; the quantity of earth will be about twenty-ſix loads of ſixteen buſhels each: on this clean all the yards and ſheds. The yard, not being bedded with earth, ſhould be well littered to ſoak up the urine, and to be made into dung by the hogs and looſe cattle; this may be cleaned once a fortnight, and the ſheds once a week; and piled regularly on the foundation of earth, until the heap is about ſeven feet high; and when one clamp is thus filled up, another foundation of earth may be laid adjoining to it. In order to drench the compoſt, the ſlowings of the heap ſhould be prevented from running off, and thrown up occaſionally on the heap.

By thus piling the compoſt in clamps, it will be in very good order for arable land early in the ſpring; which will not be the caſe, if it be left to be trodden flat over the whole yard, and every particle to be waſhed by the rain. Fermentation goes on much quicker in this method, and it would be better ſtill if the heap were made under a roof, to keep off all water but what is thrown up.

Another advantage of this method is, that any part of the compoſt may be uſed, by taking a diviſion of the ſtill that has been the longeſt finiſhed[2].

All ſorts of animal ſubſtances mixed with earth, litter, or any vegetables, make a rich compoſt. Sawduſt mixed in layers with the blood and offal of a ſlaughter-houſe, and incorporated till the whole becomes a moiſt ſeed mals is a rich compoſt. Two loads of it, with three loads of earth will be ſufficient for an acre of wheat or ſpring-corn. Being a kind of top-dreſſing, it ſhould be put on at the time of ſowing, and harrowed in with the grain.

This manure is beſt adapted to lands of an open texture. Tough clays require lime and plenty of dung to break the coheſion of their parts. As this compoſt takes up little room, it is very convenient for the uſe of ſuch farmers as are obliged to bring manures from a diſtance. It is alſo extremely rich, and will probably continue longer in the land than yard or ſtable dung.

All animal ſubſtances being of the ſame nature, the refuſe of whale-fat, after the oil is boiled out, will make a rich compoſt with freſh dung, which will reduce the blubber ſpeedily into a putrid ſtate, or with earth and dung. Having marked out the length and breadth of your intended dunghill, make a layer of earth (as moor-earth, or that of ant-hills) about a foot in thickneſs; over this put a layer of yard or ſtable dung of the ſame thickneſs; then a layer of blubber; and over that another layer of dung. Repeat the operations till the heap be raiſed about ſix feet, then give it a thick covering of earth, and coat the heap with lath. In about a month turn the whole in the uſual manner; and when turned, coat with earth as before to confine the putrid effluvia. In a month or two the heat will be conſiderably laſſen, when it ſhould have a ſecond turning. This operation muſt be repeated at proper intervals, till the whole becomes a uniform putrid maſs. In general this compoſt ſhould not be uſed till it is a year old. The heap muſt be guarded from dogs, ſwine, &c.

This compoſt may with great advantage be applied to all purpoſes where good rotten dung is required. It is excellent for cabbages and for meadow ground. One hogſhead of whale refuſe will make eight loads of dung; and muſt be of importance to thoſe farmers as lie at a diſtance from manure, but within reach of thoſe places where train-oil is prepared. We ſhall hope therefore not to hear any more of this precious oil being thrown into the ſea[3].

It is obvious that the refuſe of all ſorts of fiſh, and fiſh itſelf when in ſhoals too great for conſumption may advantageouſly be made into a compoſt in the ways above deſcribed.

Theſe are local advantages, and are mentioned principally with a view to put farmers upon ſearching diligently for ſuch ſubſtances as may be within their reach, that are capable of aſſiſting the finer and more common dung hill, upon which in many places they rely wholly, however inadequate to their wants. Abundance of good manure, properly managed, being the life and ſoul of huſbandry.

Where there is a deficiency of materials for making good compoſts proper for the ſoil, in many caſes a mixture of different ſoils may anſwer the purpoſe. Thus where clay predominates, the addition of ſand, where it is happily within reach, is often ſufficient to cultivate fertility; and where ſand prevails, the addition of clay or chalk will anſwer the ſame purpoſe. Gravel enriches peat moſs, and that in return improves gravel. The farmer therefore ſhould ſearch every where, above ground and below for ſuch ſubſtances as may improve his ſeveral ſoils by a due mixture.

Top-Dreſſings.

Much has been already ſaid about theſe under ſeveral of the foregoing articles. They are pounded ſoot, rape cake, pigeon's dung, peat aſhes, and the like, but well-rotted dung, and compoſts in general when ſufficiently mixed and pulverized by ſeaſons, turning, may be uſed in the ſame way.

Top-dreſſings anſwer particularly well on crops that tiller, as wheat and barley; and when theſe are beat and backward in the ſpring, in conſequence of a bad ſeed-time, immoderate wet, ſevere froſts, and other cauſes, help them prodigiouſly by quickening their vegetation, and thus enabling them to cover the ſoil

[1] Houlton's Eſſays, p. 150, 154.

from

from the enſuing drought of ſummer. They are peculiarly applicable to poor, light, ſandy and gravelly or limeſtone lands.

The advocates for top-dreſſings in preference to ploughing in manure affirm, that when a conſiderable quantity of dung is laid upon land, and mixed with the whole ſoil, a great proportion of its richeſt ſalts will be carried down by rains, and not only be loſt to the preſent crop, but if the ſub-ſoil be of a looſe and porous nature, will very ſoon eſcape beneath the reach of the plough. Whereas if ſtable-dung and other enriching manures were mixed with lime or other active ſubſtances into a compoſt, and thus employed as a top-dreſſing, a much ſmaller quantity than is uſually applied might probably be found ſufficient. By thus laying manures upon or near the ſurface, they ſink by ſlow degrees, their beneficial effects are exerted upon the crop in their paſſage downwards, and very little, if any, of the fertilizing parts penetrate beyond where they are uſeful.

Top-dreſſings however are frequently attended with great expenſe; their effects are not permanent, and in very dry ſeaſons they d. little or no good[a].

When top-dreſſings are applied, the nouriſhment of the plants only is conſidered, no regard being had to looſening the earth; they are not therefore ſufficient for heavy lands. Stiff loams and clay require lime and dung to break the coheſion of their parts.

Beans alſo, and tap-rooted plants in general require ſuch manures as are worked into the land by the plough; for top-dreſſings operate but a little way within the ſurface, except on thin ſoils, where they are certainly of great uſe. They are very beneficial on turneps, by puſhing the young plant haſtily into rough leaf, and thereby ſecuring it againſt the fly, but no farther[b]. See the articles *Soot*, *Aſhes*, &c. &c.

PARING and BURNING, BURN-BAKING, or DENSHIRING,

Is not only a very great, but a very ancient way of improvement, according to Mortimer, who treats largely on the ſubject. It is not proper, ſays he, for rich ſoils, or dry ſtony lands, or chalky clays; nor is it a thing too often to be repeated on any ſoil, eſpecially where the ſoil is ſhallow; nor muſt corn be ſown too long on ſuch lands. It is moſt proper for thoſe lands that have lain long untilled, and have contracted a ſour juice, which cauſes it to run to unprofitable trumpery, as ſour graſs, quitch, ruſhes, heath, gors (furze), fern, broom, &c. and land that runs too much to ſtraw, and yields but a lank ſhort ear, is much improved by burning.

Whether this operation be right upon the whole has been a ſubject of much diſpute, which I preſume not to determine. According to Mr. Kirwan it reduces the roots of vegetables to coal and aſhes, and thus prepares both a ſtimulant and nutriment for plants. It is commonly objected to the practice that it diminiſhes and conſumes the ſoil, repeated experience however has ſhown the contrary, at leaſt where the operation is judiciouſly managed[c].

Mr. Young relates that Colonel St. Leger has practiſed paring and burning for ſeveral years in Yorkſhire; and that he alſo breaks up old turf in that manner, however thin the ſoil may be. He pares it as thin as poſſible, becauſe the roots make the good aſhes, not the earth. He is clear that it does not diminiſh the ſoil, for on various lime-ſtone lands, where the ſoil is not four inches thick, paring and burning has been regularly practiſed for ſeveral ages; and had it been attended by ſuch an effect, the whole ſtaple of the ſoil muſt long ſince have totally diſappeared: whereas he has conſtantly found that with good management it enſures very great crops. The farmers indeed generally take four or five crops of corn after it, and with the laſt ſow any vile rubbiſh called hay-ſeeds: many do not ſow any thing, but leave the ſoil to turf itſelf. Then it lies for a ſheep-walk twenty or twenty-one years, and then they pare and burn again with the ſame ſyſtem.

To condemn paring and burning from ſuch miſmanagement, is to argue againſt the uſe of a good thing from the abuſe, which is a mode of reaſoning by no means uncommon. Or if we ſhould allow the poſſibility of paring and burning being hurtful to the ſoil, yet the evils ariſing from the miſmanagement of common farmers are by no means to be received as proofs of ſuch ſuppoſed prejudice: they are effects of bad huſbandry, not of paring and burning.

Colonel St. Leger recommends the pared and burnt land always to be ſown with turneps; to be kept in tillage ſeven years, in a good courſe of crops; and then to be laid down again to graſs, with plenty of good ſeeds; and ſoon after to be well manured[d].

Skirting and *beat-burning* have been practiſed ſeveral centuries in Cornwall and Devonſhire: and whether it is intended to ſow wheat or turneps, this is the uniform mode of breaking up graſs lands. *Skirting* is a ſort of half ploughing; as two or three inches of ſurface of the ley is left untumed, and is covered by the furrow, cut very thin, with the graſſy ſide downwards; ſo that the graſs ſide of the furrow, and the narrow balk which is left untumed, being in contact, ſoon rot by the fermentation of the ſward. If for turneps it is turned thin about midſummer, and is immediately worked: if to lay to rot for wheat, in the fall of the year it is turned a little deeper. The operation is performed by a wing turned up the furrow ſide of the plough-ſhare, which cuts the furrow any breadth that is choſen, generally about four inches and a half. This operation is ſometimes performed by ſpading, or paring with a breaſt-plough; ſometimes alſo with a mattock: but ſkirting with the plough is generally practiſed. The beſt time for this operation is before Chriſtmas, if the graſs can be ſpared: the winter froſts bring it into fine order, but in general it is done in ſummer. After laying ſome time, it is croſs-cut with the plough and well worked with harrows, and then either left to rot, or again harrowed and rolled with much care and labour, until the broken ſward is made very light, and the earth ſhaken from the graſſy roots and weeds, which are then raked together by hand into heaps and burnt; which proceſs is called *beat burning*[e].

Whatever ill effects paring and burning may produce in bad hands, and with ſuch great miſchief has certainly been done, where a ſyſtem of corn crops is the object in view; there is no doubt of its expediency in ſituations that are elevated or remote from markets, where the great object of the cultivator ought to be to get the land as quickly as poſſible into good paſture. Where the ſurface is covered with very coarſe herbage or heath, reſt-harrow, fern, &c. or if the ſoil conſiſts of moſs to a conſiderable depth, this operation is very properly employed to deſtroy the rubbiſh, and render the land workable. It may then be reduced by fallow, and ſown with graſs and white clover, either with or without a crop. Lime harrowed in with the graſs ſeeds, will much increaſe the richneſs and ſweetneſs of the paſture. But a ſeries of white crops will exhauſt the land, and ſhould always be guarded againſt by the landlord, where paring and burning is practiſed.

FOLDING

Is reſorted to by all open-field farmers as the preparation for wheat, and their chief dependence is upon this ſpecies of top-dreſſing, where the quantity of farm-yard dung is inſufficient for their purpoſe. This mode of manuring is peculiarly adapted to farms where there is a conſiderable extent of hill or common paſture, or graſs lands that never come under the plough. In ſuch farms, by bringing the ſheep in the evening to the fold, a conſiderable quantity of manure will be made, that would otherwiſe be loſt. If the paſture upon which the ſheep feed through the day be good, they may be fulded without much detriment to the animal for a great part of the year; but where the paſture is ſcanty this cannot well be done, for the ſheep will not be able to pick up a ſufficiency of food

[a] Agric. Report on Manures, 12. 15.
[b] Hunter's Eſſays, 63. 112. and 4. 307.
[c] Young's Ann. 23. 93. and 145.
[d] Eaſtern tour, 1. 282. See Annals, 24. 321.
[e] Fraſer's Agric. Report of Devon. 21.

through the day to enable them to bear the fatigue of travelling to and from the fold, and fasting all night. And unless the sheep have turneps or hay during the winter, their dung will be of small value.

It is a bad practice to crowd more sheep into a fold than can lie down at their ease, and it is equally bad to confine young and old, strong and weak in the same fold. It is far better to afford them room enough, and to let them remain on the same spot two or three nights till it is sufficiently manured.

Feeding sheep in a fold can only be practised upon light dry soils. Here it is still more necessary neither to crowd the flock, nor to put in the weak with the strong; for they will tread down and waste the food, and in the contention for it the strong will deprive the weak of their proper share.

On light dry soils sheep will do good by giving it cohesion with much treading; but on clays or strong loams this does much injury to the land; turneps, &c. cannot therefore be fed off in such soils, except in dry seasons, but must be pulled and eaten upon a dry stubble or pasture.

Upon farms entirely arable, where artificial grasses make a part of the rotation, to bring the flock from the pasture, to fold it upon a fallow, is only enriching one part of the farm at the expense of another[1]. Or, as Mr. Bakewell always called folding, *robbing Peter to pay Paul*. It is well known that heaths and sheep-walks that have been fed time out of mind, but the sheep constantly folded on other lands, continue as miserably poor as they ever were at any former period.

But besides this, lambs and ewes are damaged by folding, to the amount probably of at least 1s. a head. Now the benefit arising from their dung is estimated at about 1s. 2d. a head; which leaves only 6d. each for the advantage of this practice. But there is still another deduction to be made on the number kept and loffes on ſtock. Divide one thouſand ſheep into ten flocks of one hundred each, by means of inclo-ſures, and twelve hundred would be kept eaſier than a thouſand were before; and as to many of the diſtem-pers and accidents to which flocks are liable, ſome of which are contagious, they reſult very much from this practice of folding[2].

If folding be ſuppoſed neceſſary on account of the manure, where farm-yard dung is not made in a ſuf-ficient quantity, and other manure is not readily to be obtained; might not a greater ſtock of muck be raiſed, by littering a dry part of the yard, or a warm corner of ſome paſture with ſtraw, fern, or whatever litter could be had in greateſt plenty, penning them and feeding them there in hard weather, and letting them run into the adjoining paſture only during the day in fine weather. A great quantity of manure might thus be raiſed in winter from a flock, and pro-vided they had ample room in the pen, and were to be well ſupplied with dry litter, the ſheep might ſuſ-tain leſs injury in thus lying warm and dry, than from being folded on naked land, often wet, and in an open expoſure.

If indeed we expect other good effects on land be-ſides the dung and urine of the ſheep, as their tread-ing, and a certain warmth communicated to the ſoil by their breath, their perſpiration, and the natural heat of their bodies, then folding may be adviſeable.

WATER.

May fairly be conſidered as a manure, if we attend to the effects of ſtagnant and putrid water, and the watering of meadow lands.

Water, if allowed to remain ſtagnant is diſpoſed to putrefy, from the animal or vegetable matters con-tained in it; and when it has undergone a putrefac-tion, it depoſits a mucilaginous ſubſtance. Water therefore may be rendered an excellent manure, by making a pond or reſervoir near a houſe and farm-yard the common receptacle of the drains from the kitchen, ſcullery, and waſh-houſe, or of the yard, ſtables, &c. or elſe by throwing into it weeds and all offal of the garden. By either of theſe means there may always be a large ſupply of putrid water, with which, particularly in dry ſeaſons, meadow and paſture land may be watered with great effect, by means of water-carts, ſuch as are uſed on the roads near London[3].

The water in which flax or hemp is ſteeped might be uſed advantageouſly in the ſame manner; and in general, where there are any pits or pools, the water might ſoon be rendered putrid and fit for manuring paſture or even arable lands, by throwing into them a large quantity of green vegetable ſubſtances. In Devonſhire it is a practice to enrich ponds by the drain of an adjoining yard, with the addition of a bag of lime at different times.

Watering of meadows is a moſt important improve-ment, where it can be accompliſhed, and is well un-derſtood. A well-watered meadow is in ſpring a hot-bed for graſs. The practice of this valuable improve-ment may be learnt from Mr. Davis's Agricultural Survey of Wiltſhire, copied in the article MEADOW.

This, together with Fallowing, Draining, &c. is in ſome degree connected with the preſent ſubject as im-provements of land, but not being properly manures, are here omitted.

The baſis of the preceding diſſertation on Manures is the outlines of the propoſed general Report from the Board of Agriculture on the ſubject of Manures, together with the Appendix. To this is added a va-riety of practical information from Dr. Hunter's Geor-gical Eſſays, Mr. Arthur Young's Annals of Agricul-ture, Mr. Marſhall's Rural Economy of Norfolk, the Midland Counties, &c. The Papers of the Bath Agricultural Society. The Surveys of Counties printed by direction of the Board of Agriculture, &c.

MAPPA. See *Ricinus*.

MAPPIA. (*From Marcus Mappus, Profeſſor of Medi-cine at Straſburg. He publiſhed* Catal. plantarum horti acad. Argentinenſis, 1691, 12mo. Hiſt. plant. Altati-carum, *a poſthumous work by Ehrmann*, 1742, 4°.)

Linn. gen. Schreb. n. 1755. Soramia. *Aubl. guian.* 552. *t.* 219.

Claſſ. 13. 1. Polyandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted, permanent: *parts* roundiſh, concave, coloured within.

COR. *Petals* five, roundiſh, having claws, ſpreading, ſcarcely larger than the calyx.

STAM. *Filaments* numerous (ſixty) capillary, broader at the tip, the length of the corolla, inſerted into the re-ceptacle. *Anthers* ovate.

PIST. *Germ* globular, ſuperior. *Style* columnar, incurved, permanent. *Stigma* capitate.

PER. *Berry* ovate, one-celled.

SEED ſingle, ovate, large, involved in a thick, viſcid *aril*.

ESSENTIAL CHARACTER.

Cal. five-parted. *Cor.* five-petalled. *Germ* ſuperior. *Berry* one-ſeeded. *Seed* ariled.

SPECIES.

1. Mappia guianenſis.
   Soramia guianenſis. *Aubl. guian.* 552. *t.* 219.

DESCRIPTION, *&c.*

This is a ſhrub, with branches full of little tuber-cles, rambling over trees, to their very tops, and di-viding into many alternate branchlets, which are long and hang down. Upon theſe are leaves, which are alternate, ſmooth, thick, narrowing at the bale, where they terminate in a petiole, an inch in length, thick, convex underneath and channelled above: the largeſt are ſix inches long, and three inches and a half wide: they are divided by a longitudinal nerve, prominent beneath, with ſeveral lateral nerves ſpringing from it. Flowers in little bunches from the axils of the leaves, or on the tubercles of the branches and branchlets. Pedunckles long, reddiſh, ſlender. Calyx alſo reddiſh within. Corolla white. Berry red, the ſize of a

[1] Agric. Report, p. 50.
[2] Young's Ann. 19. 300. 22. 131.
[3] Bath papers, v. 168.

Cherry; *the* fruit fleshy, firm, slightly acid.—Native of Guiana, on the banks of the river of Sinemari, flowering and fruiting in may *.

MARJORUM. See *Amaracus*.

MARANTA. *(So named by Plumier from Bartolommeo Maranta, fellow of Pallopius, pupil of Luca Ghini. He wrote three books in simple medicines, chiefly with a view of illustrating Dioscorides. He was eſteemed a man of ſingular parts and obſervation; and died in 1554.)* *Linn. gen. n. 5. Reich. n. 5. Schreb. n. 7. Plum. t. 36. Juſſ. 63.*

Claſs. 1. 1. Monandria Monogynia.

Nat. order of *Scitamineæ*. *Coronæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* three-leaved, lanceolate, ſmall, ſuperior.

COR. one-petalled, ringent. *Tube* oblong, compreſſed, oblique, bent in. *Border* ſix-cleft: *alternate outer ſegments* ovate, equal, ſmaller; one of theſe the loweſt, two the uppermoſt: *two alternate lateral* very large, roundiſh, repreſenting the lower lip: *uppermoſt* ſmall, two-parted.

STAM. *Filament* membranaceous, reſembling a ſegment of the corolla. *Anther* linear, faſtened to one edge of the filament.

PIST. *Germ* roundiſh, inferior. *Style* ſimple, the length of the corolla. *Stigma* obſoletely three-cornered, bent in.

PER. *Capſule* roundiſh, obſoletely three-cornered, three-celled, three-valved.

SEED ſingle, ovate, wrinkled, hard.

ESSENTIAL CHARACTER.

Cal. three-leaved. *Cor.* trifid. *Nect.* three-parted, the third part bearing the antlier on its upper ſide.

SPECIES.

1. Maranta arundinacea. *Indian Arrow-root.*
Lin. ſpec. 2. Reich. 1. 4. Willd. 1. 13. hort. cliff. 2. Swartz obſ. 8. Fabric. helmſt. 2. Brown. jam. 112.
M. arund. cannacori folio. *Plum. gen. 16. Mart. exot. 1. 39.*
Canna indica radice alba alexipharmaca. *Sloan. jam. 1. 253. t. 149. f. 2. Rail ſuppl. 573.*
C. ind. anguſtifolia pediculis longis, &c. *Pluk. alm. 79.*
Culm branched herbaceous, leaves ovate-lanceolate ſomewhat hairy underneath. *

2. Maranta Galanga.
Lin. ſpec. 3. ſuſſ. 51. Reich. 4. mat. med. 35. Mill. dict. n. 2.
Alpinia Galanga. *Lin. ſpec. Willd. 12.*
Amomum Galanga. *Lour. cochinch. 5. Diſſ. noſtr. n. 11.*
Culm ſimple, racème terminating looſe with alternate flowers; ſcg. of the nectary emarginate, leaves lanceolate.

3. Maranta Touchat.
Adult guian. 3. Lin. ſpec. Willd. 13.
Donax Arundaſtrum. *Lour. cochinch. 15.*
Arundaſtrum. Touchat leytam. *Rumph. amb. 4. 22. t. 7.*
Culm branched ſtrutted, leaves ovate ſmooth.

4. Maranta? malaccenſis.
Burm. ind. 2. Lin. ſpec. Willd. 14.
Galanga malaccenſis. *Rumph. amb. 5. 177. t. 71. f. 1.*
Culm ſimple, leaves oblong petioled ſilky-pubeſcent underneath.

5. Maranta cornuta.
Lin. ſuppl. Ecc. ſuſſ. 51. Willd. 14.
Stemleſs, ſcape ſcaled cornſe, leaflets of the coma reflex.

DESCRIPTIONS, *&c.*

The generic of natural character of Maranta is given differently from Schreber's as above, by Swartz in his obſervations.

CAL. *Perianth* three-leaved, ſuperior. *Leaflets* lanceolate, longer than the tube of the corolla, contiguous.

COR. one-petalled, ringent. *Tube* cylindric, compreſſed, oblique, gibbous. *Border* trifid. *Segments* equal, lanceolate ovate; one loweſt, two lateral.

NECT. *Nectary* three-parted, connate with the tube: two lower diviſions oblong, lateral, larger, repreſenting a lower lip: the third upper larger, vaulted, ſerving for a filament.

STAM. *Filament* none. *Anther* linear, faſtened to the upper edge of one of the ſegments of the nectary.

The reſt as before, except that the ſtyle is crooked in the middle.]

1. This has a thick, fleſhy, creeping root which is very full of knots, from which ariſe many ſmooth leaves, ſix or ſeven inches long, and three broad towards their baſe, leſſening towards each end, terminating in points. They are of the conſiſtence and colour of thoſe of the Reed, and ſtand upon reed-like foot-ſtalks, which ariſe immediately from the root, between theſe come out the ſtalks, which riſe near two feet high; theſe divide upward into two or three ſmaller, and have at each joint one leaf of the ſame ſhape with the lower, but ſmaller. The ends of the ſtalks are terminated by a looſe bunch of ſmall white flowers, ſtanding upon pedunckes near two inches long. The flowers are cut into ſix narrow ſegments, which are indented on their edges; theſe ſit upon the embryo, which afterwards turns to a roundiſh three-cornered capſule, incloſing one hard rough ſeed. It flowers here in june and july.

[Browne ſays that it grows from a thick fleſhy root, and ſhoots by a ſimple foliated ſtalk to the height of two or three feet, terminating in a looſe and ſomewhat branched flower-ſpike. It is called Indian Arrow-root, becauſe it was thought to extract the poiſon from wounds inflicted by the poiſoned arrows of the Indians.

It is conſidered in the Weſt Indies as a warm alexipharmic, and is thought to reſiſt the force of poiſons very powerfully; but its chief effects ſeem to depend on its abſorbent and lenient nature, having few warm particles in its compoſition.

The root waſhed, pounded fine and bleached, makes a fine powder and ſtarch. It has been ſometimes uſed as food when other proviſions were ſcarce, and is frequently adminiſtered in infuſions to the ſick [a]. The flower in milk is recommended as a proper food for infants, and is gelatinous like Salep. It has lately been introduced into England.

It is a native of South America, and is cultivated in the Weſt Indies.] It was firſt diſcovered by Plumier. Dr. Houſtoun found it in great plenty near La Vera Cruz, and ſent the ſeeds to England [before 1732.]

2. Miller ſays, this is very like the firſt, but has a ſingle ſtalk: the flowers are ſmaller, and the ſegments of the petals are entire.

This plant, not agreeing in character with Maranta, as deſcribed by Linnæus, Loureiro removed it into the genus Amomum; where it is alſo placed in this work. Swartz ſuggeſted that it is an Alpinia, and Willdenow has placed it in that genus. See the deſcription, &c. under Amomum.

3. Culm round, ſolid, very regular, ſhining, without knots at bottom, divided at top into ſpreading branches, eight feet high. Root creeping, horizontal, tubercled, woody. Leaves broad-ovate, ſubacuminate, quite entire, alternate, obliquely ſtriated. Petioles round, ſlender, lengthy. Flowers white, ſubterminating, in large, ſcattered, nodding panicles [b].

Native of the Eaſt Indies, Cochinchina, the Iſland of Cayenne and Guiana; where it is uſed for making baſkets [c].

It ſeems doubtful whether it belongs properly to this genus.

4. This is a doubtful plant. Coſtus malaccenſis, deſcribed by Koenig, in Retz. faſc. 3. 71. ſeems to be allied to it.

5. Leaves radical, petioled, even, like thoſe of Canna. Scape leafleſs, round, even, the thickneſs of a ſwan's quill, three feet high. Coma terminating: leaflets cluſtered, numerous, ſeſſile, ovate, reflex; the lower gradually ſmaller. Flowers among the lower leaflets of the coma, ſeſſile, each with bifarious bractes,

* Aublet.

[a] Browne jam. [b] Loureiro. [c] Aublet.

in

in three pairs: the upper valves two-keeled, the lower equal. Florets in threes. Perianth caducous; leaflets petaloid, the length of the corolla: the tube of which is almoſt the length of the calyx; the border five-parted, four ſegments lanceolate, the fifth biſid. Filament ſhort, placed on the tube. Anther erect, oblong. Germ ſhort. Style filiform, club-ſhaped, faſtened to the tube below. Stigma narrow, ſimple. Seeds very many.

Native of Surinam, where it was found by Dalberg. Perhaps it may conſtitute a new genus; the appearance is certainly very different from that of the others*.

Aublet has ſeveral other ſpecies of Maranta, but his deſcriptions of them are too ſhort to enable us to form any judgment concerning them. Probably ſome do not belong to this genus.]

PROPAGATION AND CULTURE.

Theſe plants being natives of a warm country, are very tender, and therefore will not live in this climate, unleſs they are preſerved in ſtoves. They may be propagated by their creeping roots, which ſhould be parted in the middle of march, juſt before they begin to puſh out new leaves. Theſe roots ſhould be planted in pots filled with light rich earth, and plunged into a moderate hot-bed of tanners bark, obſerving now and then to refreſh them with water; but it muſt not be given to them in large quantities, for too much moiſture will ſoon rot the roots, when they are in an unactive ſtate. When the green leaves appear above ground, the plants will require more frequently to be watered, and they ſhould have free air admitted to them every day, in proportion to the warmth of the ſeaſon, and the heat of the bed in which they are placed. As the plants advance in ſtrength, they ſhould have a greater ſhare of air, but they muſt conſtantly remain in the ſtove plunged in the tan, otherwiſe they will not thrive; for when the pots are placed on ſhelves in the ſtove, the moiſture paſſes too ſoon from the fibres, which generally ſpread on the ſides and bottoms of the pots, ſo that the plants do not receive much nouriſhment from the water. But where they are conſtantly kept in the tanners bark, and have proper air and moiſture, they will thrive, ſo as from a ſmall root to fill the pot in which they were planted, in one ſummer. About michaelmas the firſt ſort will begin to decay, and in a ſhort time after the leaves will die to the ground, but the pots muſt be continued all the winter in the bark-bed, otherwiſe the roots will periſh; for although they are in an inactive ſtate, yet they will not keep very long from ſhrinking, when taken out of the ground; and if the pots are taken out of the tan, and placed in any dry part of the ſtove, the roots often ſhrivel and decay; but when they are continued in the tan-bed they ſhould have but little water given to them when their leaves are decayed, leſt it rot them. The firſt ſort flowers conſtantly in july or auguſt, and will often produce ripe ſeeds in England, but the ſecond ſort does not flower ſo conſtant, nor do the flowers appear ſo conſpicuous, being very ſmall and of a ſhort duration. This ſort never has produced any ſeeds in England, nor could I ever obſerve any rudiment of a ſeed-veſſel ſucceeding the flower. The green leaves abide on this ſort moſt part of the winter, ſeldom decaying till february; and ſometimes will continue green until freſh leaves come up, and thruſt the old ones off.

[MARASAKKI. See *Baſella*.

MARATTIA. (*So named by Swartz, in honour of Giovanni Francesco Maratti, an Italian Botaniſt, author of ſeveral treatiſes on cryptogamous plants, and eſpecially of the exiſtence of flowers in Ferns.*)

Lin. gen. Schreb. n. 1623. *Swartz prodr.* 128. *Smith ic. ined.* 2. 46, 47, 48. Myriotheca. *Juſſ.* 15. (excluſo Cænopteride Bergii).

Claſſ. 24. 2. Cryptogamia Filices.

Nat. order of *Filices* or *Ferns*.

ESSENTIAL CHARACTER.

Capſules oval, gaping longitudinally at top, with ſeveral cells on each ſide.

* Linn. ſuppl.

SPECIES.

1. Marattia alata.

Swartz. prodr. 128. *Smith ic. ined.* 2. 46.

Rachiſes ſcaly, the partial ones winged, leaflets ſharply ſerrate.

2. Marattia levis.

Smith ic. ined. 2. 47.

Rachiſes even, the partial ones winged; leaflets bluntly ſerrate at top, the uppermoſt confluent.

3. Marattia ſraxinea.

Smith ic. ined. 2. 48.

Rachiſes even ſimple; leaflets lanceolate ſerrate all diſtinct.

DESCRIPTIONS, &c.

1. Frond bipinnate, with the pinnas generally oppoſite. Rachis almoſt four-cornered: ſcales ſcattered, lineal, acute, membranaceous, duſky. Partial rachiſes with more frequent ſcales: wings narrow, the ſame ſubſtance with the leaflets, but veinleſs and quite entire, contracted and evaneſcent at the inſertion of the leaflets. Pinnules generally oppoſite, ſeſſile, ovate-lanceolate, acutely ſerrate, eſpecially towards the top, veined, the veinlets almoſt always biſid near the outſide, ending in the tips of the ſerratures, ſometimes, like the central nerve, minutely ſcaly. The lower pinnules are lobed, the upper ones entire: the terminating one elongated, acuminate, ſerrate-lobed. Capſules ſolitary, placed on the partial veins beyond the middle, before they open roundiſh or oval, the ſize of Poppy ſeeds, even, with a longitudinal cleft above, which afterwards gapes, and diſcovers a double row of little holes, about five on each ſide, communicating with the cells of the capſule. Finally the rim of the capſule becomes cloven and ſublobed.

Native of Jamaica, where this Fern has been remarked by Roger Shakeſpear, Everard Home, and Olaus Swartz.

2. Frond ſubtripinnate, with the lower pinnas alternate. Rachis roundiſh. Partial rachiſes flatted, winged above: wings the ſubſtance of the leaflets, veinleſs, quite entire, contracted at the inſertion of the leaflets, towards the top of the pinna much wider than in M. alata. Pinnules alternate, very ſeldom oppoſite, lanceolate, ſmooth, ſerrate-lobed, moſt frequently alſo pinnate at the baſe, ſerrate at the tip, ſerratures ſomewhat bent in, blunt not acuminate, veined; veins ſmooth, uſually ſimple except in the partial leaflets; the upper ones oval, bluntly ſerrate not lobed: the end one elongated, acute, bluntly ſerrate, lobed at the baſe, with the lobes confluent in the uppermoſt pinnules. Capſules uſually ſolitary, often two on a lobe of the pinnules, each placed on its proper vein, roundiſh or oval, little more than half the ſize of the preceding, even, opening longitudinally, with four (ſeldom five) little holes on each ſide, the rim always entire, never cloven or lobed.

Native of St. Domingo, where it was found by Thierry.

3. This is a very large Fern, with a handſome leaf like that of the Aſh. Frond unequally bipinnate, with the pinnas alternate. Rachis half-round, channelled, ſmooth; partial rachis with little or no membranous wing towards the top. Pinnules alternate, ſcarcely petioled, lanceolate, acuminate, ſerrate, even, uniform, gradually ſmaller towards the baſe of the pinna. Partial veins numerous, ſimple and divided alternately, ſpreading, ending in the tips of the ſerratures. Capſules towards the edges of the pinnules, ſolitary, placed on the veins, before they open oval, the ſize of the ſeeds of Lepidium ſativum, even; when theſe ſplit open longitudinally about ſix little holes appear on each ſide.

Native of the iſland of Mauritius. Thouin†.

MARCGRAVIA. (*From George Marcgraaf of Liebſtadt in Germany. Author of a voyage to Braſil in* 1648.)

Lin. gen. n. 640. *Reich. n.* 696. *Schreb. n.* 871. *Plum.* 29. *Jacqu. amer.* 159. *Juſſ.* 244.

Claſſ. 13. 1. Polyandria Monogynia.

Nat. order of *Putaminea? Copperides*, Juſſ.

† Smith.

GENERIC CHARACTER.

Cal. *Perianth* six-leaved, imbricate, permanent: *leaflets* roundish, concave: the two outmoſt larger.

Cor. one-petalled, come-ovate, entire, cloſed like a calyptre, parting at the baſe, caducous.

Stam. *Filaments* very many, awl-ſhaped, ſhort, ſpreading, deciduous. *Anthers* upright, large, ovate-oblong.

Pist. *Germ* ovate. *Style* none. *Stigma* headed, permanent.

Per. *Berry* coriaceous, globular, many-celled, many-valved.

Seeds numerous, ſmall, oblong, neſtling in ſoft pulp.

ESSENTIAL CHARACTER.

Cor. one-petalled, calyptre-ſhaped. *Cal.* ſix-leaved, imbricate. *Berry* many-celled, many-ſeeded.

SPECIES.

1. Maregravia umbellata.

Lin. ſpec. 719. *ſyſt.* 487. *Reich.* 2. 562. *Swartz obſ.* 205. *Jacqu. amer.* 156. *t.* 96. *pict.* 77. *t.* 143. *Plum. gen.* 7. *ic.* 173. *Brown. jam.* 244. *t.* 26. (opt.) *Sloan. jam.* 1. 74. *t.* 28. *f.* 1. (Phillitidi affinis.)

DESCRIPTION, &c.

This is a ſtrubby creeping plant, but not properly paraſitical, at firſt it is radicant, like ſome Ferns, whence Sloane has given a figure of a young plant among his Ferns. As it advances the ſtem becomes ſhrubby, adhering ſtill by its fibres to the trunk of ſome tree, to the top of which it frequently runs, at length dividing into ſeveral ſubdivided looſe pendulous branches, commonly terminated by flowering umbels. The leaves of a young rooting plant are roundiſh, ſubſeſſile, ſlightly emarginate, with an entire margin, and glandular dots. Leaves of the branches diſtich, alternate, on ſhort petioles, ovate, lanceolate or ovate-lanceolate, of a thick conſiſtence, deciduous, ſmooth. Umbels rodding, with many, ſimple, one-flowered pedunicles. In the centre of the umbel utricular glands, ſpreading, oblong, ventricoſe, helmet-ſhaped, deciduous, corneous[1]. Flowers aſcending naked. Receptacle, after the flower is fallen, entire not five-lobed[2]. Capſule uſually divided into ten cells. Seeds and pulp of a ſhining ſcarlet colour[3].

Native of the Weſt Indies, in the cool woody mountains. Browne ſays it is frequent in the woods of Jamaica, and appears in ſuch various forms that it has been miſtaken for different plants in the different ſtages of its growth.

MARCHANTIA. (*So named in honour of Nicholas Marchant, M. D.*)

Lin. gen. n. 1198. *Reich. n.* 1315. *Schreb. n.* 1661. *March. act. gall.* 1713. *t.* 5. *Mich.* 1. *Juſſ.* 9. *Schmid. ic.* 9. 29. 31. 34. *Hedw. theor.* 96. *t.* 24, 25. Hepatica. *Mich.* 2. Lunularia. *Mic.* 4. Lichen. *Dill. muſc.* 515.

Claſſ. 24. 4. Cryptogamia Hepaticæ.

Nat. order of *Algæ. Hepaticæ*, Juſſ.

ESSENTIAL CHARACTER.

Male. *Calyx* ſalver-ſhaped: *anthers* numerous, imbedded in its diſk.

Fem. *Calyx* pelate, flowering on the under ſide. *Capſules* opening at top, *ſeeds* faſtened to elaſtic fibres.

Seven ſpecies of Marchantia are received in Syſtema Vegetabilium. Of theſe five are natives of Britain. M. polymorpha is very common in wet places; as on ſhady walls, and by the ſides of wells and ſprings. In figure it ſomewhat reſembles an oak leaf. The pedunicles are in the angles of the lobes, from one to three inches high. Capſules greeniſh, dividing into eight or ten ſegments. On the upper ſurface are here and there glaſs-ſhaped conical cups, on ſhort pedicels, with a wide fealloped margin, and incloſing about four little bodies, very finely ſerrated at the edges[4].

Mr. John Lindſay, ſurgeon in Jamaica, ſowed that part of the fructification of this Alga, compoſed of fine elaſtic filaments and ſmall globules, heretofore conſidered as the male parts, where none of the plants had ever been ſeen before: and in a ſhort time raiſed ſeveral young *Marchantiæ*, which grew freely.

The *Marchantia* bearing ſeeds of another kind in ſmall ſeſſile cups, which alſo readily grow, may have the appearance of ſuperfluity. But may not theſe be conſidered as in ſome ſort analagous to thoſe luxuriant productions in many vegetables, hence called viviparous; as in the Graſſes, the genus Allium, &c.

Mare's-Tail. See *Hippuris*.

MARGARITARIA. (*From* Margarita, *a pearl, the kernels of the berries being of a ſhining white, like pearls.*)

Lin. gen. Schreb. n. 1533. *Suppl.* 66. *Juſſ.* 430.

Claſſ. 22. 7. Dioecia Octandria.

GENERIC CHARACTER.

* *Male.*

Cal. *Perianth* one-leafed, four-toothed, minute, permanent.

Cor. *Petals* four, roundiſh, inſerted into the calyx.

Stam. *Filaments* eight, briſtle-ſhaped, patulous, longer, inſerted into the receptacle. *Anthers* roundiſh, ſmall.

Pist. *Germ* ſuperior, roundiſh. *Style* briſtle-ſhaped, the length of the ſtamens. *Stigma* blunt.

* *Female*, on a diſtinct individual.

Cal. as in the male, permanent.

Cor. as in the male?

Pist. *Germ* ſuperior, globular. *Styles* four or five, filiform. *Stigmas* ſimple, permanent.

Per. *Berry* globular, crowned with ſhort patulous ſtyles.

Seed. *Aril* four or five-grained, four or five-celled, cartilaginous, very thining; with two-valved lobes. *Seeds* ovate, compreſſed inwards.

Obs. *Calyx always four-cleft. Styles and Arils four or five.*

ESSENTIAL CHARACTER.

Male. *Cal.* four-toothed. *Cor.* four-petalled.

Fem. *Cal.* and *Cor.* as in the male. *Styles* four or five. *Berry* cartilaginous, four or five-grained.

SPECIES.

1. Margaritaria nobilis.

Lin. ſyſt. 890. *ſuppl.* 428. *Pluk. phyt. t.* 176. *f.* 4.

DESCRIPTION, &c.

In the male the branches are round, brachiate, flexuoſe. Leaves oppoſite, petioled, ovate, even, quite entire, of a firmer conſiſtence, the ſize of Euonymus leaves. Panicle of compound racemes, with great abundance of ſmall flowers, as in Spiraea Aruncus. Germ blunt, minute, abortive, with a ſimple ſtyle.

In the female the branches are alternate. Leaves always alternate. Pedunicles axillary, ſimple, always one-flowered. Calyx always flat, four-cleft. Styles four or five, ſpreading above the germ, permanent. Berry globular, but the nucleus four or five-grained, ſhining remarkably and the colour of pearls.—Perhaps theſe may be of different genera?

Found in Surinam by Dalberg[1].

Marque. See *Rhizophora*.

MARICA.

Lin. gen. Schreb. n. 81. Cipura. *Aubl. t.* 13. *Juſſ.* 58.

Claſſ. 3. 1. Triandria Monogynia.

Nat. order of *Enſatæ. Irides*, Juſſ.

GENERIC CHARACTER.

Cal. *Spathes* bivalve.

Cor. ſix-parted. *Petals* three outer ovate, three inner ſmaller; all connate at the claws.

Stam. *Filaments* three, very ſhort, inſerted into the tube of the corolla. *Anthers* oblong, erect.

Pist. *Germ* inferior, angular. *Style* three-cornered. *Stigmas* three, petal-form, ſimple, acute.

Per. *Capſule* oblong, angular, three-celled.

Seeds ſeveral, angular.

ESSENTIAL CHARACTER.

Cor. ſix-parted, with three alternate ſegments as ſmall again as the others. *Stigma* petal-form, triſid, with the three diviſions ſimple, acute. *Capſ.* three-celled, interior.

SPECIES.

1. Marica paludoſa.

Lin. ſpec. Willd. 246.

Cipura paludoſa. *Aubl. guian.* 1. 38. *t.* 13.

[1] Swartz. [2] Linn. ſpec. [3] Jacquin. [4] Weis, Pollich, Wilkening.

[1] Linn. tranſ. 2. 313. [2] Linn. ſuppl.

DESCRIPTION, &c.

Root a fleshy bulb, covered with several membranes as in Saffron. Leaves from the bulb four or five, surrounding and covering it with their bases, more than a foot long, narrow, pointed, thin, striated. Stem stout, with two leaves at the top, and some others that are shorter; from the middle of these issue several flowers, each inclosed in a membranous spathe. The three intermediate segments of the corolla hollowed like a spoon, are very small: the colour is white or blue. Style and stigmas blue.

Native of the moist meadows of Guiana, at the foot of the mountain Courou: flowering in auguſt*.

MARIGOLD. See *Caltha*.

MARILA. (*Marila, ashes or embers.*)

Lin. gen. Schreb. n. 1756. *Swartz prodr.* 84.

Claſs. 13. 1. Polyandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* oblong, blunt, ſpreading.

COR. *Petals* five, obovate, waved at the edge, ſpreading, longer than the calyx.

STAM. *Filaments* very numerous, inſerted into the receptacle, a little connate at the baſe, filiform; the inner ones the ſame length with the corolla, the outer gradually ſhorter. *Anthers* ovate.

PIST. *Germ* linear, four-cornered, ſuperior. *Style* ſhort, thick. *Stigma* blunt, ſubcapitate.

PER. *Capſule* ſubcolumnar, incurved, four-cornered, four-celled, four-valved.

SEEDS very numerous, like ſaw-duſt, ciliate.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* five-petalled. *Capſ.* four-celled, many-ſeeded. *Stigma* ſimple.

SPECIES.

1. Marila racemoſa.
Swartz prodr. 84.
Native of the Weſt Indies; at Montſerrat and St. Chriſtopher's.]

MARJORAM. See *Origanum*.

[MARIGUM. See *Kyllingia, Schœnus, Scirpus*.

MARMELOS. See *Crataeva*.

MARQUISAS. See *Paſſiflora*.

MARRAM. See *Arundo*.]

MARRUBIASTRUM. See [*Ballota, Lamarum, Stachys*.]

MARRUBIUM, (*of Pliny; from a town in Italy.* Lin.)

Lin. gen. n. 721. *Reich. n.* 779. *Schreb. n.* 976. *Tournef. t.* 91. *Juſſ.* 114. Pſeudodictamnus. *Tournef. t.* 89.

Claſs. 14. 1. Didynamia Gymnoſpermia.

Nat order of *Verticillatae*. *Labiatae*, Tourn. & Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, falver-ſhaped, rigid, ten-ſtreaked: *mouth* equal, patulous, often ten-toothed; *teethlets* alternate, ſmaller.

COR. one-petalled, ringent. *Tube* cylindrical. *Border* gaping, with a long tubular opening. *Upper lip* erect, linear, bifid, acute: *lower* reflex, broader, half-three-cleft; the middle ſegment broader, emarginate, the lateral ones acute.

STAM. *Filaments* four, ſhorter than the corolla, concealed beneath the upper lip, two longer. *Anthers* ſimple.

PIST. *Germ* four-cleft. *Style* filiform, of the ſame length and in the ſame ſituation with the ſtamens. *Stigma* bifid.

PER. none. *Calyx* contracted at the neck, ſpread out at the mouth, incloſing the ſeeds.

SEEDS four, ſomewhat oblong.

OBS. *In* Marrubium T. *the upper lip of the corolla is erect. In* Pſeudodictamnum T. *the upper lip of the corolla is arched. Some ſpecies have only five teeth to the calyx.*

M. criſpum *has the upper lip entire.*

M. hiſpanicum *has the upper lip of the corolla trifid or quadrifid.*

ESSENTIAL CHARACTER.

Cal. falver-ſhaped, rigid, ten-ſtreaked. *Cor.* upper lip bifid, linear, ſtraight.

SPECIES.

* *With five-toothed calyxes.*

1. Marrubium Alyſſon. *Plaited-leaved white Horehound.*
Lin. ſpec. 815. *ſyſt. ed.* 15. 574. *Reich.* 3. 64. *hort. cliff.* 311. *Sauv. monſp.* 151. *Knoph. cent.* 9. *n.* 63. *Veſl ſymb.* 2. 65.
M. albuni, fol. profunde inciſis, flore cæruleo. *Mor. hiſt.* 3. 377. *ſ.* 11. *t.* 10. *f.* 12.
Alyſſon verticillatum, fol. profunde inciſis. *Bauh. pin.* 232. *Raii hiſt.* 557.
Alyſſon Galeni. *Cluſ. hiſt.* 2. 35. *Ger.* 379. *emac.* 465. *Park. theat.* 590. 4.
Leaves wedge-ſhaped free-toothed plaited, whorls without any involucre.

2. Marrubium peregrinum.
Lin. ſpec. 815. *ſyſt.* 537. *Reich.* 3. 64. *hort. cliff.* 311. 3. *Gron. orient.* 73. *Crantz. auſtr.* 274. *Jacqu. auſtr.* 2. *t.* 160. *Knoph. tent.* 7. *n.* 54.
M. hiſpanicum ſuprinum, fol. ſericeis argenteis. *Tournef. inſt.* 192. *Dill. elth.* 319. *t.* 174. *f.* 213.
M. album latifolium peregrinum. *Bauh. pin.* 230. *Mor. hiſt.* 3. 9. *ſ.* 8. *Raii hiſt.* 556. 2.
M. alterum pannonicum. *Cluſ. hiſt.* 2. 34. *Raii hiſt.* 556. 3.
β. M. creticum. *Mill. dict. n.* 3. *Dalech. hiſt.* 962. *Ger.* 502. *emac.* 693. 4. *Park. theat.* 591. 3.
M. album anguſtifolium peregr. *Bauh. pin.* 230. *Raii hiſt.* 556. 4.
Leaves ovate-lanceolate ſerrate, teethlets of the calyxes briſtle-ſhaped.

3. Marrotium caudidiſſimum. *Woolly White Horehound.*
Lin. ſpec. 816. *ſyſt.* 537. *Reich.* 3. 65. *hort. cliff.* 312. *n.* 4. *Retz. obſ.* 2. 19.
M. foi. rotundis canidiſſimo. *Boerh. lugdb.* 156. *Dill. elth.* 218. *t.* 174. *f.* 214.
M. alb. cand. & villoſum. *Tournef. cor.* 12.
Leaves ſubovate woolly emarginate-crenate at top, calycine teethlets awl-ſhaped.

[4. Marrubium africanicum.
Lin. ſyſt. 537. *Jacqu. obſc.* 2. 306. *Ic. var. t.* 7.
Leaves ovate ovonate toward the very much wrinkled, calycine teeth awl-ſhaped, upper ſegment of the corolla acute.]

5. Marrubium ſupinum. *Procumbent White Horehound.*
Lin. ſpec. 816. *Reich.* 3. 65. *hort. cliff.* 312. *Sauv. monſp.* 151. *Scop. carn. n.* 713. *Barr. ic.* 633. 686. *Bocc. muſ.* 2. 78. *t.* 69. 4.
Calycine teeth briſtle-ſhaped ſtraight villoſe.

** *With ten-toothed calyxes.*

6. Marrubium vulgare. *Common White Horehound.*
Lin. ſpec. 816. *Reich.* 3. 65. *hort. cliff.* 312. *Fl. ſuec. n.* 531. *mat. med.* 150. *Wendeb. med. bot.* 265. *t.* 97. *Haſſ. angl.* 261. *Wither. arr. ed.* 7. 533. *Engl. bot.* 410. *Relh. cant. n.* 442. *Thell. helv. n.* 258. *Neck. gallob.* 257. *Pall. it.* 1. 25. *Scop. carn. n.* 712. *Pollich pal. n.* 570. *Knoph. cent.* 5. *n.* 56. *Bulh. hort.* 3. *t.* 59. *Crantz. auſtr.* 273. *Krock. ſileſ. n.* 948. *Villars dauph.* 2. 390. *Fl. dan. t.* 1076. *Cluſ. hiſt.* 2. 34. 1. *Dod. pempt.* 87. 1. *Bull. eyſt. Zorn. ic.* 1. 27.
M. album. *Bauh. hiſt.* 3. 316. *Ger.* 502. 1. *emac.* 693. 1. *Raii hiſt.* 556. *ſuv.* 239. *Petiv. hiſt. t.* 32. *f.* 3. *Riv. mon.* 1. 66. *f.* 1. *Blackw. t.* 479.
M. alb. vulgare. *Bauh. pin.* 230. *Mor. hiſt. ſ.* 11. *t.* 9. *f.* 1. *Park. theat.* 44. *f.* 1. *Tournef. inſt.* 190. *Gerard.* 506.
M. *Fuchſ.* 590. *Matth.* 828. *Lonic.* 1. 110. 2. *Lob. obſ.* 278. 3. *ic.* 1. 517. 2.
M. candidum. *Trag.* 8. 2.
β. M. album villoſum. *Bauh. pin.* 230. *prodr.* 110. *Raii hiſt.* 557.
Teeth of the calyx briſtle-ſhaped hooked.

[7. Marrubium africanum. *African White Horehound.*
Lin. ſpec. 816. *ſyſt.* 537. *Reich.* 3. 66. *hort. cliff.* 311. *Retz. obſ.* 2. 19. *n.* 58. *Knoph. tent.* 7. *n.* 53. *Pluk. phyt. t.* 306. *f.* 2. *Comm. hort.* 2. 179. *t.* 90. (Pſeudo-Dictamnus.)
Leaves cordate roundiſh emarginate-crenate.]

8. Marrubium criſpum. *Curled White Horehound.*
Lin. ſpec. 1674 *ſyſt.* 538. *Reich.* 3. 66. *Herm. par. t.* 200? *Bocc. muſ.* 2. 152. *t.* 129. & in titulo.

Leaves

* Aublet.

Leaves cordate roundish, crenate-subdentate, calyxes ten-toothed unarmed.

9. Marrubium hifpanicum. *Spaniſh White Horehound.*
Lin. ſpec. 816. *fiſt.* 538. *Reich.* 3. 66. *hort. cliff.* 312. *uſſ.* 169.

M. album rotundifolium hiſp. *Herm. par. t.* 201.

M. ſubrotundo fol. *Barr. ic.* 797. *Bocc. muſ.* 2. 167. *t.* 122.

Borders of the calyxes ſpreading, toothlets acute.

10. Marrubium Pſeudo-dictamnus. *Shrubby White Horehound.*
Lin. ſpec. 817. *fiſt.* 538. *Reich.* 3. 67. *hort. cliff.* 312. *uſſ.* 169. *Knipb. cent.* 8. *n.* 65. *Sabb. hort.* 3. *t.* 47.

Pſeudodictamnus. *Dod. pempt.* 281. *Ger.* 651. 2. *emac.* 795. 2. *Park. theat.* 28. *f.* 2. *Raii hiſt.* 557.—*verticillatus inodorus. Baub. pin.* 222.

Borders of the calyxes flat villoſe, leaves cordate concave, ſemi-brushy.

11. Marrubium acetabuloſum. *Saucer-leaved White Horehound.*
Lin. ſpec. 817. *fiſt.* 538. *Reich.* 3. 67. *Barr. ic.* 129. (Dictamnus).

Pſeudo-dictamnus acetabulis molliceps. *Baub. pin.* 222.—*alter* Theophraſti, Pona. *Park. theat.* 28. *f.* 3. *Raii hiſt.* 558.

Borders of the calyxes longer than the tube membranaceous, the greater angles rounded.

DESCRIPTIONS, *&c.*

1. Root biennial. Stems about the ſame height with the common ſort. Leaves hoary, bluntly toothed. Whorls of flowers ſmall and looſe. Segments of the calyx end in very ſtiff prickles, ſpreading open. Flowers dark purple, larger than thoſe of the common ſort.

[Linnæus remarks, that there are three ſmall purple flowers on each ſide: and that the calyxes are acute with the teeth ſpreading.

Native of Spain and Italy. Cultivated by Gerarde before 1597. It flowers in july and auguſt [a].

Vahl ſays, that M. ylleatum of Forſkahl ſcarcely differs from this: but it agrees in its rigid ſtalk, plaited leaves agminated into the petiole at the baſe, unequally and bluntly toothed, in the want of an involucre, and its rigid pungent calyxes: it differs however in having ten-flowered whorls, which yet is often the caſe in M. Alyſſon, and the whole plant is woolly white, with the leaves leſs wedge-ſhaped and rounder.]

2. Stems near three feet high, branching much more than the common ſort. Leaves rounder, whiter, and ſtanding farther aſunder. Whorls of flowers not ſo large: but the corolla has a longer tube.

[Like the next ſpecies, there are ſeveral ſtems from the ſame root, procumbent at the lower part, but riſing upright above, ſomewhat longer and more ſlender than in that: leaves narrower, not ſo thick, villoſe or wrinkled, but ſofter, with a more delicate down, and more hoary: the flowers, eſpecially the helmet, are divided into ſharper ſegments: the calyxes are more deeply ſtreaked, and are cut into longer ſegments, more ſtanding out [b].

Native of the Levant, Auſtria, Sicily, &c.].

β. Thin riſes with ſlender hoary ſtems near three feet high: the leaves are very hoary, much longer and narrower than thoſe of the preceding: the whorls of flowers are ſmaller, and the briſtly indentures of the calyx longer and erect: the whole plant has an agreeable flavour.

[Native of Tabanin. *Lin.* Miller ſays Spain and Portugal. There were cultivated in the Eltham garden before 1732.

Dillenius remarks, that M. album latifolium and anguſtifolium of Caſpar Bauhin are upright plants, taller and ſtouter, and more branched; that the latter has a ſtrong ſmell, and has ſharper leaves; but that the former is inodorous, like his plant, with a bitter taſte, which he has not: the leaves of the broad-leaved variety are more narrowed at both ends, more bluntly and not ſo frequently crenate: finally that the leaves of his plant are ſofter and whiter.]

[a] Hort. kew. [b] Dillenius.

3. This has ſtalks about the ſame length as thoſe of the common ſort. [They are from a foot to a foot and half in height, procumbent at the lower part, but riſing upright at top, obtuſely quadrangular and villoſe. Leaves thick, much wrinkled and villoſe, pale green and hoary, the upper ones ſmaller. Flowers at the end of the ſtem and branches in cloſe whorls, white, the upper lip erect and bent back, blunter than in the other ſorts; the lower lip three-parted, the middle ſegment entire, blunter and ſomewhat wider than the lateral ones. Calyxes villoſe, divided into five ſharp ſegments, almoſt equal, the three upper ones ſomewhat ſhorter; they are ſeſſile, and are ſurrounded by an involucre of many capillaceous leaves [a].

There is ſome confuſion here, and according to Retzius, the plant with ovate-lanceolate ſhining ſilky leaves, ſerrate from the middle to the tip, but entire in the other half, and the teeth of the calyx awl ſhaped is M. hiſpanicum ſiliquum fol. ſericeis argenteis, figured by Dillenius in *t.* 174. *f.* 215. See the preceding ſpecies.

Native of the Levant. (Miller ſays Spain). Cultivated in 1732, by James Sherard, M. D. It flowers from july to ſeptember [b].

4. Stems ſeveral, perennial, half a foot high, branched and procumbent, from which annually ſpring many other ſtems, which are herbaceous, erect, a foot long, ſparingly branched, woolly-villoſe and hoary. Leaves petioled, hoary, wrinkled very much, tomentoſe on both ſides, ſoft, ovate, blunt, ſerrate, bitter, having ſcarcely any ſmell; the younger ones that come out with ſtems extremely woolly. Whorls very cloſe compoſed of very many ſeſſile flowers, with an involucre of awl-ſhaped acute woolly leaflets. Perianth tubular, hoary, very woolly at the edges, rigid: the five toothlets lanceolate-acuminate and erect. Corolla twice as long as the calyx: tube cylindrical, white: border purple: upper lip linear, cloven as far as the middle, erect, villoſe at the back: lower lip trifid, the length of the upper: the lateral ſegments ſhorter, oblong and blunt; the middle one very large, broad and roundiſh, emarginate, flat, ſtretching forward. Filaments very ſhort concealed within the upper part of the tube. Anthers roundiſh, duſky. Style the length of the ſtamens [c].

Native of Aſtrachan. It flowers in may.]

5. Stems ſeldom above eight or nine inches long, covered with a ſoft hoary down. Leaves ſmall, roundiſh, very ſoft to the touch, hoary, indented on the edges. Whorls of flowers ſmall, very downy, and white.

[Scopoli places that ſynonym of Dillenius which has been given under *M. peregrinum*, and which Retzius ſuſpects to belong to *M. candidiſſimum*, under his ſiliquum. He ſays that *M. album* anguſtifolio of John Bauhin differs only in having the leaves ſerrate and ſharp, and the flowers ſmall: and that his plant not being ſiliquoſe, is intermediate between the ſecond ſpecies and this.

Native of Spain and the South of Europe. Cultivated in 1714, in the botanic garden at Cheſea. It flowers from auguſt to october [d].

6. Root perennial. The whole plant white with down. Stems upright, a foot or eighteen inches in height, branching towards the top. Lower leaves roundiſh, upper ſomewhat ovate; all wrinkled, with thick veins beneath, bluntly ſerrated about the tip, an inch wide, and as long or longer, running down into the petiole, which is half an inch long and channelled above. Whorls very cloſe, conſiſting of above forty, ſome above fifty ſeſſile flowers. Calyx woolly, fringed on the inſide at the bottom of the teeth with woolly hairs; having as many ſtreaks on the outſide as there are teeth, which are uſually ten, but ſometimes twelve, the teeth are whitiſh, recurved, alternately larger and ſmaller. Corolla ſmall, white, compreſſed, ſtriveling in the calyx; tube curved a little; upper lip lanceolate or linear, blunt, deeply cloven; the lower has the middle ſegment bent back and ſlightly ſcalloped, the lateral ſegments lanceolate, entire, ſhort-

[a] Ibid. [b] Hort. kew. [c] Jacquin. [d] Hort. kew.

The two shorter filaments, according to Scopoli, are villose at top, but the two longer ones smooth. Anthers yellow, with a black substance in the middle. The involucre under the whorls is bristle-shaped [s].

Common White Horehound has a strong penetrating smell, not altogether unpleasant. It was a favourite medicine with the ancients in obstructions of the viscera. In large doses it loosens the belly. It is a principal ingredient in the negro Cæsar's remedy for vegetable poisons. A young man, who had occasion to take mercurial medicines, was thrown into a salivation which continued more than a year. Every method that was tried to remove it, rather increased the complaint. At length Linnæus prescribed an infusion of this plant, and the patient got well in a short time. No quadrupeds seem to eat it [h]. Bees much frequent the flowers.

Native of most parts of Europe, by road sides and in waste places, flowering from june to september.

7. Root perennial. Stem two feet high, upright, subtomentose, deeply grooved on the opposite sides. Branches opposite. Leaves wrinkled, subtomentose. Whorls remote. Involucres many-leaved, linear, ciliate, nearly the length of the calyxes. Calyx tubular, curved, hispid, nine or ten-streaked, nine or ten-toothed; toothlets short, awl-shaped, the uppermost longer, spinulose. Corolla white, smaller than the calyx: upper lip villose on both sides, slightly bifid; lower three-parted; the lateral segments semiovate, entire, diverging: the middle reflex, truncated, slightly two-nicked: tube long, linear. Filaments the length of the tube: anthers yellow, with shining dots, visible only in the microscope [i].

Retzius remarks that this plant has the involucre of Phlomis, the corolla of this genus, and the anthers of Leonurus; informuch that he is doubtful to what genus it ought to be remarked: but he had an opportunity of observing only one plant, and that in an imperfect state.

Linnæus distinguishes this from the next species, which it resembles, by the helmet or upper lip of the corolla being emarginate and hairy.

Native of the Cape of Good Hope. Introduced in 1774, by Mr. Francis Maſſon. It flowers from july to september [k].

8. Stem suffruticose, upright, rough-haired. Leaves petioled, very much wrinkled, crenate, subtomentose, hairy underneath. Calyx funnel-form, ten-toothed. Corolla purple, not hairy: upper lip roundish, blunt, entire; lower trifid, with the middle segment bifid, the sides ones stretched out. Anthers not beyond the throat or opening. It is a different plant from that which is figured by Hermann *t.* 200, that having the upper lip lanceolate and bearded, and the flamens the length of the lip.

Native of Italy, Sicily, and Spain [l].

Miller has two species, crispum and suffruticosum (n. 8 and 9.) The first of these, he says sends out many stiff roundish stalks, more than two feet high, covered with a white cottony down. The tube of the corolla is scarcely so long as the calyx, so that the two lips are but just visible.

The second has shrubby stalks near three feet high, dividing into small branches; the leaves are heart-shaped; the tube of the corolla is longer, and the flowers are larger; they are of a pale purple colour, and the upper lip is erect.

The leaves of both are rough on their upper side, and woolly on their under; the whorls of flowers are large, and the borders of the calyx flat and hairy.

9. The stalks of this grow more erect than those of the common sort; the leaves are rounder and more serrate; the calyx spreads open, and the segments are acute; the flowers are like those of the common sort; the whole plant is very hoary.

[According to Linnæus, the leaves are roundish, flat and crenate; the upper lip of the corolla trifid or quadrifid; the teeth of the calyx alternately larger and smaller.

[s] Withering, Woodw. Mis. Pollich. Scop. Krocker. Rav.
[h] Withering. Linn. suec. [i] Retzius. [k] Hort. kew.
[l] Linn.

Native of Spain. Cultivated in 1759 by Mr. Miller. It flowers in july and auguſt [m]. Mr. Miller affirms that he had the seeds from Istria.]

10. This rises with a shrubby stalk two feet high, and dividing into many branches. Leaves small, sitting pretty close to the stalks. The whorls of flowers not so large as those of the eighth sort. The rim of the calyx flat. The flowers white. The whole plant very hoary with a dense compact cotton.

[Native of the island of Candia; Miller says Sicily and the islands of the Archipelago.—Cultivated by Gerarde in 1596. It flowers from june to auguſt [n].]

11. Stems hairy, about two feet high. Leaves heart-shaped, rough on their upper side, and hoary on their under, deeply serrate. Whorls large. Border of the calyx flat; segments many, membranaceous, angular, and rounded at the top. Corolla small, pale purple, scarcely appearing out of the calyx: upper lip erect.

[The teeth of the calyx are acuminate. After flowering time the border of the calyx grows out till it becomes twice as long as the tube, and is naked and membranaceous, not villose as in the preceding species: the margin of the border has twenty angles; the smaller ones acute, the broader ones very blunt and rounded [o].

Native of the island of Candia. Cultivated in 1731 by Mr. Miller. It flowers from june to auguſt [p].]

PROPAGATION AND CULTURE.

All these plants are preserved in botanic gardens for the sake of variety, but there are not above two of the sorts which are cultivated in other gardens; these are the tenth and eleventh sorts, whose stalks are shrubby: the plants are very hairy, and make a variety when intermixed with other plants; these very rarely produce seeds in England, so are propagated by cuttings, which, if planted in a shady border the middle of april, will take root pretty freely.

They are somewhat tender, and in very severe winters are killed, unless they are screened from the hard frosts, especially those plants which grow in good ground, where becoming luxuriant in summer, their branches are more replete with juice, and very liable to suffer by cold; but when they are in a poor dry rubbish, the roots being short, firm, and dry, are seldom injured by cold, and will continue much longer than those in better ground.

The other sorts are easily propagated by seeds, which should be sown on a bed of poor earth in the spring, and when the plants come up they must be kept clear from weeds; and where they are too close they should be thinned, leaving them a foot and half asunder, that their branches may have room to spread; after this they require no other culture; they may also be propagated by cuttings, in the same manner as the other two sorts. If these plants are upon a dry poor soil, they will live several years, but in rich land they seldom last above three or four.

[MARRUBIUM. See *Leonurus* and *Stachys*.
——— aquaticum & palustre. See *Lycopus*.]
——— nigrum. See *Ballota*.

[MARSANA. See *Marraya*.

MARSHALLIA. *(So named by Schreber, from Mr. Humphry Marshall, author of* Arbuſtum Americanum. *Philad.* 1785. 8vo.)

Lin. gen. Schreb. n. 1763.

Claſs. 19. 1. Syngeneſia Polygamia Æqualis.

GENERIC CHARACTER.

CAL. *Common* many-leaved, spreading: *leaflets* linear-lanceolate, blunt, concave, almost equal, permanent.

COR. *Compound*, uniform, longer than the calyx. *Corollets* hermaphrodite, equal, numerous. *Proper* one-petalled, funnel-form, villose: *tube* the length of the calyx; *border* five-cleft, subcentricose; *segments* linear, almost erect; two more deeply separated.

STAM. *Filaments* five, capillary. *Anthers* cylindric, tubular, the length of the border.

PIST. *Germ* ovate. *Style* filiform, a little longer than the stamens. *Stigmas* two recurved.

PER. none. *Calyx* unchanged.

[m] Hort. kew. [n] Ibid [o] Linn. [p] Hort. kew.

Seeds solitary, ovate, five-cornered, pubescent, crowned with the small five-leaved *calyx*: *leaflets* ovate, acuminate, icaniose, erect.

Recept. chaffy, flat: *chaffs* linear, a little dilated and white at the tip, green, the length of the calyx.

Marsh Cinquefoil. See *Comarum*.

——— Flower. See *Viburnum*.

——— Mallow. See *Althæa*.

——— Marygold. See *Caltha*.

——— Treefoil. See *Menyanthes*.

MARSILEA. (*So named by Linnæus, in honour of Count Aloysius Ferdinando Marsigli of Bologna, founder of the Institute there, author of the history of the Danube, and several other works, between* 1681 *and* 1726.)

Lin. gen. n. 1618. Lemma. *Juss. gen.* 16. *act. gall.* 1740. 263. *t.* 15 Salvinia. *Mich. gen. t.* 58. Class. 24. 1. *Cryptogamia Miscellaneæ.*

GENERIC CHARACTER.

Cal. *Common* oval, subcompressed, coriaceous, hairy, gaping at the base, internally divided into several (fourteen or fifteen) cells, in two longitudinal rows, separated by a membranaceous partition.

Cor. none.

Stam. *Filaments* none. *Anthers* several, inserted round each pistil, very small, obovate, sharp below, one-celled, gaping transversely, exploding a spherical pollen.

Pist. in each cell several, coadunate in a transverse row, oval. *Style* none. *Stigma* short, blunt.

Per. none.

Seeds as many as there are pistils.

Rec. *Membrane* somewhat fleshy, clothing the cells internally.

Obs. *Calyxes one, two, or three, pedicelled issue from the petiole of the leaf a little above the rest.*

SPECIES.

1. Marsilea natans.

Lin. spec. 1562. *fyst.* 942. *Reich.* 4. 437. *mant.* 508. *Guett. in act. gall.* 1762. 543. *t.* 29. *f.* 1.

M. salviniodes. *Neck. in act. palat.* 3. 297. *t.* 21.

Salvinia vulgaris aquis innatans, fol. subrotundis punctatis latè virentibus. *Mich. gen.* 107. *t.* 58. *Lucc. it.* 281.

Lenticula palustris latifolia punctata. *Raub. pin.* 362.

Lens palustris patavina. *Raub. hist.* 3. 785.

Leaves opposite simple.

2. Marsilea quadrifolia.

Lin. spec. 1563. *fyst.* 942. *Reich.* 4. 438.

Zulzerania marsiliodes. *Neck. act. palat.* 3. 303.

Lemma. *Juss. in act. par.* 1740. 263. *Guett. stamp.* 1. 62.

Lenticula palustris quadrifolia. *Raub. pin.* 362. *Mapp. alsat. t.* 166.

Lens palustris quadrifolia. *Raub. hist.* 3. 789. *Mor. hist.* 3. 619. *s.* 15. *t.* 4. *f.* 5.

L. pal. altera. *Cam. epit.* 853.

Leaves in fours quite entire.

3. Marsilea minuta.

Lin. fyst. 942. *Reich.* 4. 438. *mant.* 308.

β. M. coromandelina. *Burm. ind.* 237. *t.* 62. *f.* 3.

Leaves in fours toothletted.

INSCRIPTIONS, *&c.*

Michell first gave this respectable name to plants which prove only to be species of Jungermannia. To the first of the above plants, Michell had given the name of Salvinia, from Ant. Maria Salvini, a noble Florentine, professor of Greek, but not of Botany. The elder Jussieu and Necker both separate the second species from Linnæus's genus of Marsilea.

1. Branches floating. Leaves in two rows, ovate, folded together, having little balls scattered over them, composed of four white filaments, cirrhose at the tip; among the roots globes from three to seven, furnished with a style, many-seeded [a].

Native of Italy, in stagnant and slow-flowing marsh ditches, as near Pisa; also in North America.

2. Capsules toothless [b]. Stem creeping, rooting. Leaves on long petioles, flowering at the base of the petiole. Involucre pedicelled, ovate, transversely many-celled; cells having pistils and anthers placed on the same receptacle promiscuously [c].

Native of France, Alsace, Siberia, India, in ditches.

3. This is very like the preceding, but differs in having a smaller and more rigid stem; the whole plant is less; the leaves are toothlet-crenulated, and seven times smaller; the capsules are two-toothed at the base, even, compressed.

Native of the East Indies.

β. Seems to be only a very minute variety, though most of the leaves are in a manner quite entire; some of them however are crenulate [d].

Marsilea. See *Isoetes* and *Jungermannia*.]

Martagon. See *Lilium*.

MARTYNIA. (*So named by Houstoun, in honour of John Martyn, F. R. S. Professor of Botany at Cambridge, author of* Historia Plantarum rariorum, *and many other works, editor of* Virgil's Georgicks and Eclogues. *Born sept.* 1699, *died jan.* 1768.)

Lin. gen. n. 753. *Reich. n.* 811. *Schreb. n.* 1010. *Mart. t.* 42. *Houst. reliq. t.* 10. *Juss.* 140. *Gærtn. t.* 110. *Glox. obs. t.* 1, 2.

Proboscidea. *Juss. Schmidel. ic. t.* 12. Craniolaria. *Ed. prior.*

Class. 14. 2. Didynamia Angiospermia.

Nat. order of *Personatæ*. *Bignoniæ*, Juss.

GENERIC CHARACTER.

Cal. *Perianth* five-cleft, unequal, shrivelling.

Cor. one-petalled, bell-shaped: *tube* spreading, ventricose, gibbous below at the base, melliferous: *border* five-cleft, obtuse, spreading: segments almost equal; the lower straight, the lowest more erect, concave, crenate.

Stam. *Filaments* four, filiform, curved inwards; the *rudiment* of a fifth filament within the upper pair of stamens, short like a cusp. *Anthers* connected-converging.

Pist. *Germ* oblong. *Style* short, simple, the length of the stamens. *Stigma* two-lobed.

Per. *Capsule* woody, oblong, gibbous, quadrangular, two-furrowed on each side, acuminate, with the tip bent back, opening two ways, four or five-celled, inclosing the seeds as in a four-celled nucleus.

Seeds several, oblong, berried.

ESSENTIAL CHARACTER.

Cal. five-cleft. *Cor.* ringent. *Caps.* woody, corticate, with a hooked beak, four-celled, two-valved.

SPECIES.

1. Martynia perennis. *Perennial Martynia.*

Lin. spec. 862. *fyst.* 558. *Reich.* 3. 142. *hort. cliff.* 322. *t.* 18. *Glox. obs.* 13. *Ehret. pict. t.* 9. *f.* 2. *Medic. bot beob.* 1783. *p.* 238.

Stem simple, leaves serrate.

[2. Martynia longiflora. *Long-flowered Martynia.*

Lin. fyst. 559. *Reich.* 3. 143. *Ait. hort. kew.* 2. 339. *Meerb. ic.* 7.

M. capensis. *Glox. obs.* 13.

Stem simple, leaves roundish repand, tube of the corolla gibbous at the base and flatted.]

3. Martynia diandra. *Two-stamened Martynia.*

Glox. obs. 3. & 14. *t.* 1.

M. annua. *Lin. spec. ed.* 1. *fyst. ed.* 10. *Reliqu. Houst.* 5. *t.* 10. *Mill. dict. n.* 1.

M. annua villosa & viscosa, folio subrotundo flore magno rubro. *Mart. cent. t.* 40. *Ehret. pict. t.* 1. *f.* 5. *Philos. transf. vol.* 38. *n.* 427. *p.* 3.

Branches dichotomous, leaves cordate-orbicular, toothed, flowers two-stamened.

4. Martynia Craniolaria. *White-flowered Martynia.*

Glox. obs. 11. & 14.

Craniolaria annua. *Dict. nostr. Mill. dict. n.* 1.

Branches dichotomous, leaves half-five-lobed, calyx with a one-leafed spathe.

5. Martynia Proboscidea. *Hairy Martynia.*

Glox. obs. 7. & 14. *Ait. hort. kew.* 2. 339. *Mill. fig.* 191. *t.* 286.

M. annua. *Lin. fyst.* 559. *Reich.* 3. 142. *Swartz obs.* 230. *Sabb. hort.* 2. *t.* 91. *Gærtn. fruct.* 2. 131.

M. Lauisiana. *Mill. dict. n.* 3.

M. annua villosa. *Kretzschmar monogr. cum. fig.*

[a] Fuller in Linn. mant. [b] Linn. fyst. [c] Jussieu. [d] Linn. mant.

M. caule petiolisque fistulosis, floribus bibracteatis. *Genan hort.* 303.

Proboscidea. *Jussieu. Schmid. t.* 49. *t.* 12, 13. *Medic. bot. bvob.* 1783. *p.* 20.

Stem branched, leaves quite entire cordate, sinuses dilated.

6. Martynia fruticosa. *Shrubby Martynia.*

Glov. obs. 11 & 15.

Gesneria Craniolaria. *Swartz prodr.* 89. & *Dill. nostr. n.* 4.

Craniolaria fruticosa. *Lin. spec.* 861. *Swartz obs.* 229. *Mill. dict. n.* 2.

Shrubby, leaves lanceolate-serrate toothed, upper lip of the corolla with numerous curled segments.

DESCRIPTIONS, &c.

[These are annual plants, except the first and last. Stem herbaceous, except the last. Leaves simple, mostly opposite, but sometimes alternate. Flowers in axillary and terminating short spikes or bunches. Calyx five-leaved in the first and third, five-cleft in the rest. Corolla specious, blue, red or white variegated with elegant dots and lines. Distinct from the Personatæ, and approaching to Pentandria in having a fifth imperfect stamen: in the third species two of the principal stamens are imperfect. Germ inferior in the first and last. Fruit more than two-celled, commonly four-celled, some with a long, others with a short beak.]

1. Root perennial, thick, fleshy, divided into scaly knots, somewhat like those of Toothwort. Stems annual, about a foot high, thick, succulent, purplish. Leaves oblong, thick, sessile, rough and of a dark green on their upper side, but purplish underneath. The stem is terminated by a short spike of blue bell-shaped flowers, not spreading open so much at the rim as in the third sort.

[Linnæus observes, that the fruit appears to be inferior; hence Jussieu would refer it with the last species to Gesneria.]

It was discovered by Mr. Robert Millar, growing naturally about Carthagena in New Spain, whence he sent the seeds to Europe.

[2. Stem upright, somewhat rugged, two feet high. Leaves opposite, petioled, three-nerved. Flowers axillary, solitary, on short peduncles. Instead of stipules at the base of each peduncle, a gland or little cup with a ball in it, having as it were a short style and stigma. Perianth very small, five-toothed. Tube of the corolla very long, more contracted in the middle, gibbous on the dorsal base. Germ superior. Style the length of the tube. Stigmas linear, two, revolute. Pericarp scarcely beaked, having a thick toothlet on each side at the base. Seeds small.]

Native of the Cape of Good Hope. Introduced in 1781, by the Countess of Strathmore *.

3. This is a handsome large plant, two feet high, straight, with large leaves, viscid from small slender simple white villose hairs, each of which has a pellucid clammy globule at the top,

Stem single, round, reddish green. Branches several, brachiate, dichotomous. Root-leaves none. Stem-leaves opposite, angular, with teeth remote by a long finis, flaccid, green, white from the closeness of the villose hairs, veined, the largest six inches long; petioles on the stem horizontal, on the branches spreading, the same length with the leaf. Flowers several, on short peduncles, hanging down, so that the throat is turned towards the ground, disposed in a thyrse in the forks of the branches, two inches and a half long. Bractæ double, one anterior two lines below the calyx, two-leaved, sessile; leaflets ovate, blunt, dry, villose only at the edge, easily deciduous, reddish green: the other one-leafed, very large, opposite to the end of the peduncle, on a sort of winged petiole, ovate-orbicular, angular, nerved, dry, with the upper edge bent in, falling off before the flower expands. Perianth five-leaved; three of the leaflets lanceolate, slender, one-nerved, two ovate, thicker, three-nerved, yellowish green, the whole deciduous. Corolla inferior, five times the length of the calyx: tube white tinged with purple, and spotted red and yellow: border pale red, with a shining purple spot on each segment, two-lipped; upper lip reflex, bifid; lower straight, trifid, the middle segment longer, wider, with a yellow spot at the base resembling a bifid stigma supported on a style. Filaments straight, inserted into the anterior part of the corolla, and applied to it, thickish, the length of the tube: two larger at the sides, sterile; two smaller in the middle without anthers, and between these the rudiment of a fifth. Anthers oblong, two-celled. Germ superior, contracted in the middle. Style thickish, flat, shorter than the filaments. Stigma two-plated, plates flat, placed one against the other, gradually becoming more and more remote; after fecundation it shrivels and gapes. * Under a green shell, shining with clamminess, coriaceous, juiceless, acuminate at both ends, is concealed the capsule, an inch long, black, woody, very hard, ovate, compressed, four-grooved. Seeds four, one in each cell, oblong, compressed, black, with a white pith or pulp.]

Miller says, that the corolla is shaped like that of the Fox-glove, but of a paler purple colour: that the capsule is thick, tough and clammy, when ripe dividing into two parts, and leaving a large hard nut hanging on the plant, about the size and shape of the same forms the flat-beetle, with two strong crooked horns at the end; it has two deep longitudinal furrows on the sides, and several smaller crossing each other in the middle; it is so hard, that it is with difficulty cut open without injuring the seeds; within it are four oblong cells, two of which have generally a single oblong seed in each, but the other two are abortive. The flowers at the divisions of the branches may be brought forward in July, those at the extremities come afterwards, so that there is a succession of flowers on the same plant to October, when the plants decay.

It was discovered by Dr. William Houstoun, near La Vera Cruz, in New Spain, whence he sent the seeds to England, which succeeded very well in the botanic garden at Chelsea; and in the year 1731, several of these plants were raised, which produced their beautiful flowers, and perfected their seed, whence several plants were raised the succeeding year.

[This has been much confounded with the fifth sort.

4. See the description, &c. under *Craniolaria*. It is now generally agreed that these genera ought to be united: both having a monopetalous ringent corolla, with the rudiment of a fifth stamen; and a capsule similar in structure.

5. This is a large plant, two feet high, flexuose, herbaceous, villose, viscid. Stem single, round, pale green. Branches several, scattered, resembling the stem. Root-leaves none. Stem-leaves opposite and alternate, sessile, waved, veined, yellowish green, five inches long. Petioles horizontal, slightly channelled above, the length of the leaf. Flowers several, pedunculed, in a loose thyrse in the forks of the branches, two inches long. Bractes two at the base of the calyx, lanceolate-ovate, front yellow green, red-veined, thrivelling, deciduous. Perianth inflated, the three upper segments lanceolate, acute, the lower lobed, deciduous. Corolla inferior, four times as long as the calyx: tube yellowish white, variegated with green, yellow and violet spots; border wide, waved, pale violet, with saffron-coloured and violet dots and lines, divided into two less distinct lips; segments roundish, the middle one larger, painted at the base with sulphur-coloured lines resembling the filaments and the style with the stigma. Filaments thickish, white with violet dots, inserted into the bottom of the tube, the smaller winding round the larger, the same length with the tube. Anthers two-celled; cells ovate, converging. There is a rudiment of a fifth stamen. Germ oblong-acuminate. Style roundish, white, the length of the stamens. Stigma two-plated; plates roundish, crenate, it gapes, but closes with a touch. Under a coriaceous, green, viscid, juiceless shell, acuminate both ways and two-valved, is concealed the capsule, a hard long, swelling, woody, blackish, obsoletely quadrangular, with many excavations, crested along the back, and having a very

* Gent.

long

long hooked beak; it opens by two valves, and is incompletely five-celled. Seeds subcordate, compreſſed, rugged[a]. Gærtner adds, that there are four cells, but that a fifth ariſes, when the tranſverſe partitions becoming ripe recede from each other, and leave an empty ſpace in the axis of the fruit: partitions coriaceous, riſing thick from the lateral grooves, but extenuated into tranſverſe laminas, and oppoſite to each other. Seeds about twelve in the whole capſule, ovate-acuminate, berried, when ripe rugged with tubercles, black with a coppery brightneſs; they are in a ſingle longitudinal row in each cell, and faſtened to the partitions. The fruit is ſo well figured by this author, as that of the third ſpecies is by Houſtoun, that they cannot be miſtaken. The whole plant of the third is alſo figured by Martyn and Ehret; as that of the fifth is by Miller, Gloxin, Sabbati, Kretzchmar and Schmidel, ſo well that there can be no difficulty in diſtinguiſhing them.—The Proboſcidea may alſo be known by its ſcattered branches, leaves oppoſite and alternate, cordate-ovate, quite entire, waved and ſomewhat rigid; its one-leafed calyx; the tube of the corolla very wide, with the border more irregular; all the four filaments fertile, and bent in one among another; and finally by the very long beaks to the capſule[b].

Native of America. Cultivated in 1759 by Mr. Miller. It flowers from june to auguſt[c].

6. See the deſcription under Geſneria, to which genus it certainly belongs from its habit, inflorescence, flower and fruit. Linnæus's generic character by no means accords with it, and Plumier was long ſince aware of its affinity to Geſneria[d].

It may be added, that the ſtem is upright; the leaves ſolitary and villoſe; the flowers ſolitary from the angles of the branches; calyx permanent, ſegments long and ſharp[e].

Cultivated by Mr. Miller in 1759.]

PROPAGATION AND CULTURE.

1. The firſt ſort dies to the root every winter, and riſes again the ſucceeding ſpring; this muſt be conſtantly preſerved in the ſtove, and plunged into the bark-bed, otherwiſe it will not thrive in this country. During the winter ſeaſon, when the plants are decayed, they ſhould have but little water given to them, for at that time it will rot the roots. In the middle of march, juſt before the plants begin to ſhoot, is the proper ſeaſon to tranſplant and part the roots, when they ſhould be planted into pots of a middle ſize, filled with light rich earth, and then plunged into the bark-bed, which ſhould at this time be renewed with ſome freſh tan. When the plants come up, they muſt be frequently refreſhed with water, but it muſt not be given to them in large quantities, leſt it rot their tender roots; and as the warmth of the ſeaſon increaſes, it will be proper to admit a large ſhare of freſh air, which will greatly ſtrengthen the plants; they muſt alſo be placed in the tan-bed, where they are not over-hung, or ſhaded by other plants, nor ſhould they be ſhifted or tranſplanted when they are in leaf, for that will prevent their flowering. As the roots of this plant increaſe very faſt, there is no neceſſity for uſing other methods to propagate it; otherwiſe the ſhoots of the young ſtalks will take root, if planted in pots filled with light earth, and plunged into a hot-bed during any of the ſummer months.

2. to 5. The annual ſorts muſt be propagated by ſeeds ſown in pots filled with light rich earth, and plunged into a hot-bed of tanner's bark, where if the earth be duly watered, the plants will appear in three weeks or a month; tranſplant them in a little time after they come up, each into a ſeparate pot, and plunge them into the hot-bed again, watering them well, and ſhading them until they have taken new root; after which they ſhould have a large ſhare of freſh air admitted to them in warm weather, by raiſing the glaſſes of the hot-bed every day: with this management the plants will make great progreſs, ſo as to fill the pots with their roots in about a month or ſix weeks time, when they ſhould be ſhifted into pots about a foot diameter at the top, filled with light rich earth, and then plunged into the hot-bed in the bark-ſtove, where they ſhould be allowed room, becauſe they put out many ſide branches, and will grow three feet high or more, according to the warmth of the bed, and the care which is taken to ſupply them conſtantly with water; and ſhould be conſtantly kept in the tan-bed, giving them plenty of free air at all times when the weather is warm, but they will not bear to be expoſed abroad in this country; when theſe plants thrive well they will ſend out many ſide branches, which will all of them produce ſmall ſpikes of flowers; but it is only from the firſt ſpike of flowers that good ſeeds can be expected in this country, ſo that particular care ſhould be taken, that none of theſe are pulled off or deſtroyed, becauſe it is very difficult to obtain good ſeeds here; and I believe few of thoſe that are produced on the ſide branches in the natural country of their growth, are fully ripened; for I have received a great quantity of theſe ſeeds from abroad, which have appeared to be very good, and yet few of them have grown.

The ſeeds of theſe plants have a ſtrong green covering on them, as thick as the outer covering of an Almond, and when the ſeeds are ripe, the covering opens, and lets the ſeeds fall, in the ſame manner as the covering of Almonds, Walnuts, &c. In each covering there is one hard nut, in ſhape ſomewhat like a beetle, having two ſharp crooked horns at one end. This nut contains four embryos, but there are ſeldom more than two ſeeds which are perfect in any of them. However, when they are ſown, the whole nut muſt be planted, for it is ſo hard, that it is almoſt impoſſible to take out the ſeeds without ſpoiling them; and when there are two plants produced from the ſame nut, they are eaſily ſeparated, eſpecially if they are tranſplanted while young. Theſe ſeeds will continue good for ſome years, for I ſaved a pretty large quantity of them in the year 1734, part of which I ſowed the following year, but had not one plant produced from them; the remainder of the ſeeds I divided, and ſowed ſome of them every ſucceeding year, without any ſucceſs, until the year 1738, when I ſowed all the ſeeds I had left, from which I had one plant produced; ſo that if the ſeeds are good, it is evident they will grow when they are four years old; therefore, whenever we receive good ſeeds from abroad, or have any in this country which are perfectly ripened, it will be proper to preſerve ſome of them for a year or two, leſt a bad ſeaſon ſhould happen, when the plants may not perfect their ſeeds; ſo that if this precaution be not taken, the ſpecies may be loſt in Europe.

5. This is more hardy than the third ſort, ſo that the plants may have more air; and too much water in ſummer will rot the ſucculent ſtems before the ſeeds are perfected.

MARVEL of PERU. See *Mirabilis*.

[MARO. See *Origanum*.]

MARUM. See [*Origanum*, *Satbia*, *Teucrium*, *Thymus*.]

MARYGOLD. See *Calendula*.

——— African and French. See *Tagetes*.

——— [Fig. See *Meſembryanthemum*.

MASSONIA. [*So named by Thunberg, from Mr. Francis Maſſon, author of* Stapeliæ novæ; *who found theſe plants, with many others, at the Cape of Good Hope.*) *Lin. gen. Schreb. n.* 552. *Suppl.* 87. *Thunb. nov. gen.* 39. *Juſſ.* 53. *Hort. kew.* 2. 3. *A.*

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Coronariæ*. *Aſphodeli*, Juſſ.

GENERIC CHARACTER.

CAL. none.

COR. *Petals* ſix, lanceolate, ſpreading, upright, placed externally on the nectary: which is inferior, cylindrical, membranaceous, ſix-ſtreaked, ſix-toothed.

STAM. ſix, filiform, incurved, a little longer than the petals, inſerted into the teeth of the nectary. *Anthers* ovate, upright, yellow.

PIST. *Germ* inferior (in reſpect of the nectary). *Style* awl-ſhaped, declining, the length of the ſtamens. *Stigma* ſimple, acute.

PER. *Capſule* three-ſided, thickening above, obtuſe, ſmooth.

[a] Gloxin. [b] Ibid. [c] Hort. kew. [d] Sparra obſ. [e] Gloxin.

smooth, three-celled, three-valved, opening longitudinally at the corners.

SEEDS very many, angular-globular, smooth.

ESSENTIAL CHARACTER.

Cor. inferior, with a six-parted border. *Filam.* on the neck of the tube. *Caps.* three-winged, three-celled, many-seeded.

SPECIES.

1. Massonia latifolia. *Broad-leaved Massonia.*
Lin. syst. 318. *suppl.* 193. *Thunb. diss.* 40. *prodr. cap.* 60. *Act. upsal.* 1. 405. *t.* 3.
M. depressa. *Houtt. nat. hist.* 12. 424. *t.* 85. *f.* 1.
Leaves roundish smooth spreading, segments of the corolla spreading.

2. Massonia angustifolia. *Narrow-leaved Massonia.*
Lin. syst. 318. *suppl.* 193. *Act. upsal.* 1. 405.
M. lanceolata. *Thunb. diss.* 40. *prodr. cap.* 60.
Leaves lanceolate smooth upright, segments of the corolla reflex.

3. Massonia undulata. *Wave-leaved Massonia.*
Lin. syst. 318. *Thunb. diss.* 41. *prodr. cap.* 60.
Leaves lanceolate waved smooth.

4. Massonia echinata. *Rough-leaved Massonia.*
Lin. syst. 318. *suppl.* 193. *Thunb. prodr. cap.* 60.
Leaves ovate muricated hairy.

DESCRIPTION, &c.

1. Leaves next the root, one pair, smooth and even. Flowers aggregate, sessile without any scape. Fruit not berried, but a membranaceous capsule; in which it differs from Hæmanthus*.

2. This has the same structure; but the leaves are narrow, of an oblong-lanceolate form, and the segments of the corolla are bent back at the end, whereas in the first they spread straight out.

Both are natives of the Cape of Good Hope, where they were found by Thunberg and Masson. The latter introduced them here in 1775. They flower in march and april*.

3. 4. Both found also at the Cape by Thunberg.

PROPAGATION AND CULTURE.

The same as Hæmanthus.]

MASTERWORT. See *Astrantia* and *Imperatoria.*

[———— Wild. See *Angelodium.*

MASTICK TREE. See *Pistacia Lentiscus.*

MATAIBA. See *Ephelis.*

MAT-FELON. See *Centaurea.*

MAT-GRASS. See *Nardus.*

MATOUREA. See *Vandellia.*

MATRELLA. See *Agrostis.*]

MATRICARIA. (*So named from having been supposed to be efficacious in disorders of the matrix.*)
Lin. gen. n. 967. *Reich. n.* 1049. *Schreb. n.* 1308. *Tournef. t.* 231. *Vaill. act. gall.* 1720. *Juss.* 183. *Gærtn. t.* 168.
Class. 19. 2. Syngenesia Polygamia Superflua.
Nat. order of *Compositæ Discoidei. Corymbiferæ*, Juss.

GENERIC CHARACTER.

CAL. *Common* hemispherical; *scales* linear, imbricate, almost equal, not scarious.
COR. *Compound* radiate. *Corollets* hermaphrodite, tubular, numerous, in a hemispherical disk. *Females* in the ray several.
Proper of the hermaphrodite funnel-form, five-cleft, spreading. *Female* oblong, three-toothed.
STAM. to the hermaphrodites. *Filaments* five, capillary, very short. *Antheræ* cylindrical, tubular.
PIST. to the hermaphrodites. *Germ* oblong, naked. *Style* filiform, the length of the stamens. *Stigma* bifid spreading:—to the females. *Germ* naked. *Style* filiform, almost the length of the hermaphrodite. *Stigmas* two, revolute.
PER. none. *Calyx* unchanged.
SEEDS solitary, oblong, without any pappus or down, to both sorts of flowers.
REC. naked, convex.
OBS. *In* M. Parthenium *the calycine scales are scarious, and sometimes the ray is wanting.*

ESSENTIAL CHARACTER.

Cal. hemispherical, imbricate; the marginal scales solid, sharpish. *Down* none. *Recept.* naked.

* Linn. Suppl. * Hort. Kew.

SPECIES.

1. Matricaria Parthenium. *Common Feverfew.*
Lin. spec. 1255. *Syst.* 774. *Reich.* 3. 852. *Hort. cliff.* 416. *Hrtf.* 263. *mat. med.* 188. *Hudf. angl.* 371. *Wither. arr. ed.* 3. 735. *Lightf. scot.* 490. *Relh. cant. n.* 626. *Woods. med. bot. t.* 249. *Hall. helv. n.* 100. *Fl. dan. t.* 674. *Kreck. silef. n.* 1430. *Villars dauph.* 3. 198. *Allion. pedem. n.* 695. *Knipb. cent.* 5. *n.* 57.
Matricaria. *Dod. pempt.* 35. 2. *Lob. obs.* 438. 1. *ic.* 1. 751. 1. *Lonic.* 1. 151. 2. *Trag.* 156. *Ger.* 526. *emac.* 652. 1. *Blackw.* 192. *Raii hist.* 357. *syn.* 197.
M. vulgaris. *Park. theat.* 83. 1. *Mor. hist. f.* 6. *t.* 10. *f.* 1.—*f.* sativa. *Bauh. pin.* 133. *Petiv. brit. t.* 19. *f.* 5.
M. vulgo, minus Parthenium. *Bauh. hist.* 3. 129.
Leaves compound flat, leaflets ovate gashed, peduncles branched.

2. Matricaria maritima. *Sea Feverfew.*
Lin. spec. 1256. *syst.* 774. *Reich.* 3. 852. *Hudf. angl.* 373. *With. arr. ed.* 3. 736. *Lightf. scot.* 491. *Krock. silef. n.* 1431. *Retz. obs.* 2. 35.
Chamæmelum maritimum perenne humilius, fol. brevibus crassis obscure virentibus. *Raii syn.* 186. *t.* 7. *f.* 1.
Receptacles hemispherical, leaves bipinnate somewhat fleshy, convex above, keeled underneath.

[3. Matricaria suaveolens. *Sweet Feverfew.*
Lin. spec. 1256. *syst.* 774. *Reich.* 3. 853. *fl. succ. n.* 766. *Lightf. scot.* 493. *Gmel. sib.* 2. 200. *tab.* 262. *Lears herborn. n.* 645. *Krock. silef. n.* 1433. *Gærtn. fruct.* 2. 420.
M. Chamomilla β. *Hudf. angl.* 372.—var. 2. *Wither. arr. ed.* 3. 737.
M. leucanthemos annua suaveolens, chamæmeli folio, ovaria albicantibus. *Vaill. act. par.* 1720. 556.
Chamæmelum tenue incisum, foliis floris deorsum protensis, umbone extuberante, suavius olens. *Cup. catbol. suppl.* 17.
Receptacles conical, rays bent down, calycine scales equal at the edge.

4. Matricaria Chamomilla. *Corn Feverfew.*
Lin. spec. 1256. *syst.* 774. *Reich.* 3. 853. *Fl. succ. n.* 764. *mat. med.* 189. *hort. cliff.* 415. *Hudf. angl.* 372. *Wither. arr. ed.* 3. 736. *Lightf. scot.* 491. *Curt. lond.* 5. 63. 331. *Relh. cant. n.* 627. *Fl. rust. t.* 74. *Gmel. sib.* 2. 200. *Hall. helv. n.* 101. *Scop. carn. n.* 1042. *Pollich pal. n.* 815. *Kreck. silef. n.* 1432. *Villars dauph.* 3. 198. *Allion. pedem. n.* 696. *Knipb. cent.* 9. *n.* 64.
Chamæmelum. *Ger. emac.* 754. 1. *Raii hist.* 184. *Petiv. brit. t.* 19. *f.* 9. *Blackw.* 67. 1.—vulgare. *Dod. pempt.* 257. 2. *Park. theat.* 851.—Leucanthemum. *Fuchs. hist.* 25.—vulgare, Leucanth. Dioscoridis. *Bauh. pin.* 135. *Mor. hist. f.* 6. *t.* 12. *f.* 7.—vulgare amarum. *Bauh. hist.* 3. 116.
Anthemis vulgaris. *Lob. obs.* 445. 2. *ic.* 1. 770. 1. *Linn. hopp. n.* 309.
Receptacles conical, rays spreading, calycine scales equal at the edge.]

5. Matricaria argentea. *Silvery-leaved Feverfew.*
Lin. spec. 1256. *syst.* 774. *Reich.* 3. 853. *hort. cliff.* 415.
M. monoleucanthemos, fol. argenteis plerumque conjugatis. *Vaill. act. par.* 1720. *p.* 369.
Chamæmelum orientale incanum millefolii folio. *Tournef. cor.* 37.
Leaves bipinnate, peduncles solitary.

6. Matricaria Afteroides. *Starwort-flowered Feverfew.*
Lin. syst. 774. *mant.* 116. *Reich.* 3. 854.
M. americana. *Mill. dict. n.* 5.
M. fol. simplicibus linari-lanceolatis sessilibus, pedunculis ovatis. *Mill. in philos. transf.* 1765. *p.* 94.
After americanus flore albo folio Lactucæ purpureo. *Raii suppl.* 160.
Boltonia Afteroides. *Diss. nov. Act. hort. keew.* 3. 197.
Leaves lanceolate entire smooth oblique.

[7. Matricaria prostrata.
Swartz prodr. 114.
Leaves simple ovate toothed, peduncles lateral, one-flowered, branches decumbent.

8. Matricaria

5. Matricaria canonicensis.
Linn. ecobinch. 498. ed. Willd. 609.
Leaves leaves ferrate, uppermoſt quite entire, pedunckes one-flowered, floretts of the ray entire, receptacle convex.

DESCRIPTION, &c.

Theſe are herbaceous plants, with leaves moſtly pinnate, but in ſome few caſes ſimple (n. 6. 7.). Flowers terminating, either in corymbs, or almoſt ſolitary. Florets in the ray commonly white, ſeldom abortive; in M. Afteroides numerous and linear. This has the ſeed five-toothed at top*; and is not properly a Matricaria.

The plants of this genus, Cotula and Anthemis, are hardly to be diſtinguiſhed by the habit. But this is a difficulty frequent in Natural Orders.

1. Common Feverfew has a perennial or biennial root, compoſed of a great number of fibres, and ſpreading wide on every ſide. Stem from two to three feet high, erect, firm, round, ſtriated, ſlightly hairy, branched on every ſide. Leaves petioled, alternate, pale green, ſoft and tender, pinnadid with two or three pairs of ovate jagged pinnas, and a larger one terminating, three-lobed, wedge-ſhaped, the middle lobe trifid, the ſide-lobes notched, roughiſh, ſlightly hairy: when magnified they appear as if ſprinkled with minute ſpangles. Flowering heads ſolitary, ſometimes on ſimple, but oftener on branched peduncles, forming together a looſe umbel or rather corymb, hairy; the peduncles are thickeſt juſt beneath the flower, and about two inches long. Scales of the calyx numerous, ovate, with dry membranaceous margins, which is one character of *Chryſanthemum*. Florets of the ray wedge-ſhaped, terminated by three teeth, and white; thoſe of the diſk crooked, ſprinkled with minute ſhining particles, yellow only at the top. Sometimes the florets of the ray are wanting; and the flowers frequently become double. Seeds whitiſh, with deep longitudinal furrows, ovate, truncated at the baſe. Receptacle dotted*.

Native of many parts of Europe, in waſte places, under hedges and walls, in church-yards, ſometimes in corn-fields, in gardens, where it is alſo cultivated in a double ſtate.]

Miller enumerates ſeven varieties—

1. With very double flowers.
2. With double flowers, having the florets of the ray plane, as of the diſk fiſtular.
3. With very ſmall rays.
4. With very ſhort fiſtular florets.
5. With naked heads, having no rays.
6. With naked ſulphur-coloured heads.
7. With elegant curled leaves.

They flower in june, and the ſeeds ripen in auguſt.

[The whole plant has a ſtrong ſmell, to moſt perſons unpleaſant, and a bitter taſte. It yields an eſſential oil by diſtillation. It has always been eſteemed a good emmenagogue, whence its name *Parthenium* (Dioſcorides, Theophraſtus, &c.) and Matricaria. It is alſo ſerviceable in hyſteric complaints. The beſt way of taking it is in a ſlight infuſion. It is an agreeable carminative and bitter, ſtrengthening the ſtomach and diſperſing flatulencies. The expreſſed juice is ſaid to kill worms in the bowels. It has likewiſe been recommended as a febrifuge, whence its Engliſh name Feverfew.

In German it is *Mutterkraut, Mutterkamille, Jungferenkraut, Mutternenkraut, Muter, Mater, Mutrich, Mutterwurz, Mahlerkraut, Magdblum, Fieberkraut.* In Dutch, *Mauwel, Mater, Moederkruid.* In Daniſh, *Moderurt.* In Swediſh, *Mattrom.* In French, *Matricaire, Espargoutte.* In Italian, *Matricaria, Matricali, Matrica.* In Spaniſh and Portugueze, *Matricaria.* In Ruſſian, *Matafchonaja trawa.*]

2. The ſtalks of this plant branch out pretty much, and ſpread near the ground. Leaves dark green, like thoſe of the true Chamomile (Anthemis nobilis), but much thicker in ſubſtance; their edges are turned back. Flowers white, like thoſe of the true Chamomile, and diſpoſed almoſt in form of an umbel.

* Juſſieu. † Wood. Mſs. Withering.

[Root woody, running deep, apparently perennial. Stems reclining, about nine inches long, thickiſh purple, ſmooth, firmer and ſtronger than thoſe of Anthemis nobilis; the whole plant is ſtouter, grows more by tufts, and does not ſpread ſo wide or creep ſo much. Leaves thicker and ſhorter, ſhining, dark green. Flowers ſeveral on a ſtem. Florets in the ray white, entire, in the diſk yellow. In ſmell it approaches to the true Chamomile, but is is much weaker †.

Krocker takes it to be a biennial plant. According to him, the ſtems are eighteen inches long; the peduncles are grooved and one-flowered; the flowers large; the receptacle hemiſpherical or conical; the florets of the ray three-toothed; the calycine ſcales ſurrounded with a brown membranaceous margin; the ſeeds of the ray three-toothed and triangular.

Retzius remarks, that in the garden it becomes perennial and luxuriant, with an upright ſtem more than two feet high, and leaves four times larger than in the wild plant, inſomuch that it appears to be a different ſpecies.

Native of the coaſt of Britain. Dillenius firſt obſerved it in Suſſex, about Cockbuſh, ſeven miles from Chicheſter. Afterwards Mr. Atkinſon remarked it in Iſle of Walney, Dr. Smith on the rocks at Down near Bamff in Scotland, and Mr. Lightfoot in the Iſle of Bute, and on the weſtern ſide of Cantire between Machrianiſh and Barr, &c. It flowers in july. Krocker aſſigns it alſo to Sileſia, on the banks of the Oder, the borders of fields, and dunghills; but I doubt whether his plant be the ſame with ours.

3. Hudſon and Withering will have this to be no more than a variety of the next ſpecies; and Lightfoot could perceive no difference between them, except that the rays of this are larger and deflexed.

According to Krocker the ſtem is ſmaller, leſs divided, few-flowered, ſmooth, weaker, higher. Leaves longer, ſofter, with linear, bifid pinnules. Flowers a little larger; the florets of the ray narrower, bent down. The receptacle conical, whitiſh. The ſcent ſweet and pleaſant, but leſs penetrating than that of M. Chamomilla or Anthemis nobilis.

Gærtner deſcribes the receptacle as ovate-conical, acuminate, high, raiſed-dotted, naked. Seeds ſmall, inverſely pyramidal, grooved, ſmooth, whitiſh, bald.

He remarks that the receptacle in the other ſpecies is much ſhorter and merely convex; and that if the ſeeds of Matricaria had a crown, the genus would be changed into that of *Pyrethrum*.

Native of Siberia, Germany, Sweden, and Britain: flowering from may to auguſt.

Its properties reſemble thoſe of Anthemis nobilis. The Finlanders uſe an infuſion of it in conſumptive caſes. Cows, goats and ſheep eat it. Horſes are not fond of it. Swine refuſe it ‡.

4. Root annual. Stem green, ſtriated, ſmooth, branched. Leaves deep green, alternate, ſeſſile; the lower ones doubly pinnate, pinnas diſtant, pinnulas bifid or trifid; the upper ones often ſimply pinnate, pinnas linear, and of an equal breadth with the midrib. Flowering heads ſolitary, on long, upright, ſtriated, naked peduncles, a little thickened above, terminating the ſtem and branches. Scales of the calyx bluntly lanceolate, with a green dorſal line, hairy, with membranaceous edges. Florets of the ray about thirteen, white, almoſt linear, a line and half broad, two-grooved, three-toothed, teeth bluntiſh; they are at firſt ſpreading, afterwards reflex. Mr. Curtis remarks, that they begin to hang down in the evening, and continue to do ſo till morning, both in this and Anthemis Cotula. Florets of the diſk yellowiſh green. Seeds numerous, minute, pale brown, furrowed; the furrows deeper and more numerous on the inner ſide, the ridges white §.

Corn Feverfew is common on cultivated grounds, on dunghills, and by way ſides; flowering from may to auguſt, and even to october. Several plants are confounded with this, under the common names of

† Dillen. in Ray ſyn. ‡ Withering.
§ Woodw. Mſs. Curtis, Stokes in Withe.

Mayweed, Maithes, Dog-Finkle, or *Dog-Fennel.* It differs from *Anthemis Cotula* or Stinking Mayweed, which it most resembles, by its scent, in having a higher and larger stem, the leaves of a darker green, and cut into finer segments. The heads of flowers smaller, smell somewhat like the true Chamomile, only not so pleasant: but those of Stinking Mayweed are very disagreeable, and the plant will blister the skin on being much handled. The florets of the ray in *Matricaria* are in general longer and much narrower; the disk is more prominent and of a darker yellow than in *Anthemis*; which the botanist readily distinguishes, on dissecting it by the pointed chaffs fixed to the receptacle, between the florets, and which are totally wanting in *Matricaria*. The seeds of *Anthemis* are broad and truncated at top, wrinkled, and of a deep brown colour; those of *Matricaria* are much smaller, paler, and different in shape. These distinctions are the more necessary to be attended to, because these plants are extremely similar in their general appearance, are often found growing together, both are annuals flowering at the same time, and both grow nearly to the same height [1].

Mr. Curtis joins Hudson and Lightfoot in affirming that M. suaveolens is not different from this; and is surprised that Professor Murray should adopt a species founded on such vague characters. See however what is said above from Krocker and Gaertner.

According to the Swedish observations, kine, goats and sheep eat this plant, horses are not fond of it, and swine refuse it. It seems to be rejected by quadrupeds in general with us. It is supposed to possess the same qualities with the officinal Chamomile (Anthemis nobilis), but in an inferior degree.]

5. This rises a foot high. Leaves of a silver colour, for the most part placed opposite. The peduncles arise single from the side of the branches, each supporting one white flower.

Native of the Levant. It flowers in July, and in warm seasons seeds are sometimes perfected in autumn.

6. For the description see Bolronia Asteroides.]

Miller describes his Matricaria americana to be a perennial plant, with the stalks and leaves decaying in autumn. The former rise a foot and half high, and divide at top into several forked branches: at each of the divisions is placed one linear-lanceolate leaf, about two inches long, and a quarter of an inch broad, of a deep green. The branches are terminated by single peduncles, each supporting one blue flower, very like those of some Asters, but the calyx is scaly, and the seeds have not any down. It flowers in July and August, and the seeds ripen in autumn.

[7. Native of Curaçao [2].

8. Stems herbaceous, a foot and half high, cespitose, suberect, branched. Leaves lanceolate. Flowers terminating, solitary, on upright peduncles. Calycine leaflets acute. Florets of the disk yellow, five-cleft, short, almost closed: of the ray blue, quite entire. It has some affinity with M. Asteroides.

Native of China near Canton.]

PROPAGATION AND CULTURE.

1. Common Feverfew is frequently cultivated in the physic-gardens near London to supply the market. The varieties are preserved in botanic and some flower gardens. Some of them are pretty constant, if care be taken in saving the seeds: but where these are suffered to scatter, it is almost impossible to preserve the varieties without mixture.

The seeds should be sown in march upon a bed of light earth, and, when they are come up, they should be transplanted out into nursery-beds, at about eight inches asunder, where they may remain till the middle of may, when they may be taken up, with a ball of earth to their roots, and planted in the middle of large borders, where they will flower in july and august; and, if the autumn be favourable, will produce ripe seeds the same year. But it is not advisable to permit them to seed, which often weakens and decays the roots; therefore, when their flowers are past, you should cut down their stems, which will cause them to push out fresh heads, whereby the roots may be maintained.

When the different varieties of these plants are intermixed with other plants of the same growth, they make a handsome appearance during the season of flowering, which commonly continues a full month, or more. But as their roots seldom abide more than two, or at most three years, fresh plants would be raised from seeds to supply their places; for although they may be propagated by parting their roots either in spring or autumn, yet these seldom make so good plants as those obtained from seeds; but the second variety seldom produces any good seeds, therefore that must be propagated in this manner, or by planting cuttings in the spring or summer months, which will take root, and make good plants.

2. This is seldom cultivated except in botanic gardens. Sow the seeds in autumn, soon after they are ripe, or in the spring, upon a bed of common earth, in almost any situation: when the plants come up thin them where they are too close, and keep them clean from weeds.

[3. May be propagated in the same manner.

4. Is a weed too common among slovenly cultivators of arable land.]

5. Sow the seeds in april, on a bed of light earth, in a good exposure, and when the plants are of a proper size, remove them into the borders of the flower garden.

6. Sow the seeds in autumn, soon after they are ripe, in the full ground, and when the plants are fit to remove, if they are planted in the borders of the flower-garden they will continue some years without protection, and annually produce flowers and seeds.

[MATRICARIA. See *Achillea, Anthemis, Chrysanthemum, Cotula.*

MATTHIOLA. (*So named by Plumier, from Petre Andrea Matthiolus, the famous Botanist, and Commentator on Dioscorides.*)

Lin. gen. n. 1231. *Reich. n.* 258. *Schreb. n.* 328. *Plum.* 6. *Pent.* 4. 39. *Juss.* 206.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Rhœadeæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* cylindric, quite entire, erect, short, permanent.

COR. *Petal.* one, very long, from a slender tube ending gradually in an entire border, with a repand mouth.

STAM. *Filaments* five, awl-shaped, shorter than the corolla. *Anthers* simple.

PIST. *Germ* globular, inferior. *Style* filiform, the length of the corolla. *Stigma* thickish, blunt.

PER. *Drupe* globular, crowned with the calyx, one-celled.

SEEDS. *Nut* globular. *Nucleus* globular.

OBS. *This genus is obscure, and it is probably nothing more than a species of* Guettarda, *perhaps* G. speciosa.

ESSENTIAL CHARACTER.

Cal. entire. *Cor.* tubular, superior, undivided. *Drupe* with a globular nucleus.

SPECIES.

1. Matthiola scabra.

Lin. spec. 1661. *Jacq.* 218. *Reich.* 1. 490. *Plum. gen.* 36. *ic.* 173. *f.* 2.

Rategal arbor indiana. *Lamar. hist.* 67. *t.* 75?

DESCRIPTION, &c.

Leaves scattered, ovate, bracteæ pinnate. This tree rests on the authority of Plumier, and requires further enquiry before any thing can be determined concerning it. Modern authors think that it is a species of Guettarda, and Richard affirms that it is the same with Guettarda speciosa.—Native of America [3].

MATTUSCHKÆA. (*From Count Matuschka, author of* Flora Silesiaca, 1776. 77. *in German. He died in* 1779.)

Lin. gen. Schreb. n. 1717. Perama. *Aubl.* 18. *Juss. gen.* 109.

Class. 4. 1. Tetrandria Monogynia.

[1] Lamb. Ray. Fl. suf. [2] Swartz. [3] Lin. Schreb. gen. Swartz obf.

GENERIC CHARACTER.

CAL. *Perianth* four-parted: *segments* ovate, acute, villose.

COR. one-petalled. *Tube* long. *Border* four-cleft.

STAM. *Filaments* four, almoſt equal, the length of the ſegments of the corolla. *Anthers* roundiſh.

PIST. *Germ* ſuperior, four-cleft. *Style* filiform. *Stigma* ſimple.

PER. none.

SEEDS two or four, very ſmall, naked.

ESSENTIAL CHARACTER.

Cal. four-parted, with linear leaflets. *Cor.* one-petalled, with a long tube and four-cleft border. *Germ* ſuperior, four-cleft. Seeds four, naked.

SPECIES.

1. Mauruſchkaea hirſuta.

Vahl ſymb. 3. 11.

Perama hirſuta. *Aubl. guian.* 54. *t.* 18.

DESCRIPTION, *&c.*

Stem filiform, erect, frequently quite ſimple, hirſute, as is the whole plant, eſpecially the calyx. Leaves almoſt like thoſe of Thymus Serpyllum, ſeſſile, oppoſite, acute, veinleſs, obſcurely three-nerved; the loweſt ſmaller, approximating, ovate: the upper oblong, remote, three lines long. Flowers in a terminating ſeſſile head, the ſize of a pea. This plant is a finger's length or a hand in height, or more, but never ſo gigantic as Aublet has drawn it, according to an obſervation of von Rohr, an eye-witneſs, who gathered it in Guiana, and communicated it to Lund[1].

MAUDLIN. See *Achillea*.

MAUHLIA. See *Agapanthus*.

MAURA. See *Anthoxyze*.

MAURITIA. (*From the name Mauritii-Boom, by which it is known among the Dutch at Suriſaam.*)

Lin. gen. Schreb. n. 1702. *Suppl.* 70. *Juſſ.* 40.

App. Palmæ.

Nat. order of *Palmæ*.

GENERIC CHARACTER.

* *Male* flowers in an oblong ſeſſile *ament*, covered all round with flowers cloſely approximating; with *blunt ſcales* between the flowers.

CAL. *Perianth* one-leafed, cup-ſhaped, truncated, entire, three-fided, ſhort.

COR. one-petalled. *Tube* ſhort, the length of the calyx. *Border* three-parted: *ſegments* equal, ſpreading a little, lanceolate, rigid (in a manner woody) blunt.

STAM. *Filaments* ſix, inſerted into the throat of the tube, thick, very ſhort. *Anthers* linear, angular, the length of the ſegments of the corolla; three alternate ones extended between the ſegments of the corolla, and horizontal; the three others erect, preſſed cloſe to the channel of the ſegments.

* *Female*.

Unknown.

ESSENTIAL CHARACTER.

MALE in an oblong ſeſſile ament. *Cal.* one-leafed, cup-ſhaped, entire. *Cor.* one-petalled with a ſhort tube, and a three-parted border. *Filam.* ſix.

SPECIES.

1. Mauritia flexuoſa.

Lin. ſyſt. 1186. *Suppl.* 434.

DESCRIPTION, *&c.*

This is a ſingular tree, almoſt without leaves. Branches angular, flexuoſe, ſmooth, with ſhort joints, thickening upwards, ſomewhat recurved, terminated by embracing ſheaths; with a cup-ſhaped and ſharper knee-joint. From the axils of theſe come out over the whole ſtem ſtrobile-ſhaped aments, in two rows, ſpreading very much, ſeſſile, with two larger upright ſcales, ſickle-ſhaped upwards, at the baſe. Aments ovate-oblong, cylindric, covered with cloſely approximating, ferruginous flowers, ſpreading very much; falling off, and leaving the ament with its ſcales. The younger Linnæus laments that he was not acquainted with the female flowers or fruit.

Native of the woods of Suriſaam, where it was found by Dalberg[2].

MAYACA. See *Syena*.

MAY-APPLE. See *Podophyllum*.

MAY-BUSH. See *Crataegus*.

MAYEPEA. See *Ceranthus*.

MAYETA. See *Melaſtoma*.

MAY-LILY. See *Convallaria*.]

MAYS. See *Zea*.

[MAY-WEED. See *Anthemis, Matricaria*.

MAY-WORT. See *Artemiſia*.

MEADIA. See *Dodecatheon*. Cranz made a ſecond attempt to reſtore the name of this eminent phyſician, elegant ſcholar, and patron of literature, to Botany, but without ſucceſs. His words are, "reſtituo Meadio "plantam, magis forte mercuri, quam plurimi alii, "quibus Sexuales conciſſere." Than which ſurely nothing is more true.]

MEADOW.

Under the general title of Meadow, is commonly comprehended all paſture land, or at leaſt all graſs land, which is mown for hay; but I chuſe rather to diſtinguiſh ſuch land only by this appellation, which is ſo low, as to be too moiſt for cattle to graze upon in winter, being generally too wet to admit heavy cattle, without poaching and ſpoiling the ſward; and thoſe graſs lands which are drier, I ſhall diſtinguiſh by the title of Paſture.

There are two ſorts of Meadows in England, one of which is ſtiled Water Meadows, and the other are ſimply called Meadows.

Water Meadows are thoſe which lie contiguous to rivers or brooks, from whence the water can be carried to overflow the graſs at pleaſure. Of theſe there are large tracts in ſeveral parts of England, which, if huſbandly managed, would become much more profitable to their owners than they are at preſent; for nothing can be more abſurd than the common practice of flowing theſe low grounds all the winter, whereby the roots of all the ſweeteſt kinds of graſs are deſtroyed, and only ſuch graſſes left as are natives of marſhes, which are coarſe and ſour: and if people were curious to examine the herbage of theſe water meadows, they would find the bulk of them compoſed of bad weeds, ſuch as grow by the ſides of rivers, brooks, and ditches, of which the ſeveral ſorts of docks make no ſmall ſhare; and although many of theſe meadows produce a great burden of what the country people call hay, yet this is only fit for cows, cart-horſes, and other animals, which by hard labour and hunger, are driven to eat it; for horſes which have been accuſtomed to feed on good hay, will ſtarve before they will touch it: and after the graſs is mown off theſe meadows, and cattle turned in to graze upon them, how common is it to ſee the land almoſt covered with theſe rank weeds, which the cattle never will eat! Which muſt always be the condition of ſuch meadows, where the water is let over them in autumn and winter; for the ſides of rivers and brooks every where abound with theſe rank weeds, whoſe ſeeds ripen in autumn, and falling into the water, they are carried by the ſtream, and depoſited on the flowed land, where they grow and fill the ground in every part; but ſo incurious are the generality of farmers in this reſpect, that if the ground is but well covered, they care not what it is, few of them ever taking any pains to weed or clean their paſtures.

The method which I propoſe for the management of theſe meadows is, never to flow them till the middle or latter end of march, excepting once or twice in winter, when there may happen floods, which may bring down a great ſhare of ſoil from the upper lands, at which times it will be of great ſervice to let water upon the meadows, that the ſoil may ſettle there; but the ſooner the wet is drained off when this is lodged, the greater advantage the meadows will receive by it; but from the end of march to the middle of may, in dry ſeaſons, by frequently letting on the water, the growth of the graſs will be greatly encouraged, and at this ſeaſon there will be no danger of deſtroying the roots of the graſs; and after the hay is carried off the ground, if the ſeaſon ſhould prove dry, it will be of great ſervice to the graſs, if the meadows are flowed again; but when this is practiſed, no cattle ſhould be turned into the meadows, till the ſurface of the ground is become firm enough to bear their weight without poaching

[1] Valt [2] Suppl.

poaching the land, for otherwiſe the graſs will ſuffer more from the treading of the cattle, than it will receive benefit by the flowing; but theſe are things which the country people ſeldom regard, ſo that the meadows are generally very unſightly, and rendered leſs profitable.

I would alſo recommend the weeding theſe meadows twice a year; the firſt time in april, and again in october; at which times if the roots of docks and all bad weeds are cut up with a ſpaddle, the meadows will ſoon be cleared of this trumpery, and the herbage greatly improved.

Another great improvement of theſe lands might be procured, by rolling them with a heavy roller in ſpring and autumn. This will preſs the ſurface of the ground even, whereby it may be mown much cloſer, and it will alſo ſweeten the graſs; and this piece of huſbandry is of more ſervice to paſtures than moſt people are aware of.

Watering of Meadows.

[The theory and practice of Irrigation Watering or Flowing Graſs Lands, being much better underſtood ſince the time of Miller, it will be proper to add here the beſt information that can be obtained on this important ſubject.

There being no part of the kingdom where the ſyſtem of watering meadows is ſo well underſtood, and carried to ſo great perfection as in Wiltſhire, the account of that practice as delivered by Mr. Thomas Davis, in his general view of the Agriculture of that county, drawn up for the Board of Agriculture, is here given.

Many of the moſt valuable and beſt formed Meadows were made at the beginning of this century. An imperfect ſcheme of watering had been practiſed before that period: but the regular mode in which this ſyſtem as connected with that of ſheep-folding is now conducted, is not more ancient. At preſent there is ſcarcely a river or brook in the diſtrict, that is not applied to this purpoſe.

It has been always obſerved that winter-floods produce fertility, provided the water does not remain too long on the land. But it is the taking off the water, and bringing it on again at will, that is the great buſineſs of irrigation, and thus making a water-meadow a hot-bed for graſs. The knowledge of the proper time and manner of doing this is the effect of obſervation.

Provided this great object can be accompliſhed, namely the bringing on and carrying off the water at pleaſure, it is not material what the ſhape of a water-meadow is, or that the diſpoſition of the trenches ſhould be uniform. But as very little land can be entirely commanded by water, unleſs its inequalities are reduced by manual labour,—it has been found convenient to adopt two different kinds of water meadows, one for land lying on declivities, and which muſt in general be watered from ſprings or ſmall brooks, and the other for low land near rivers, to be watered from thoſe rivers.

The firſt kind is called in Wiltſhire, "*catch work* "*meadows*," and the latter "*flowing meadows*." The latter are by far the moſt general in this diſtrict.

To elucidate the diſtinction between the two kinds of meadow, and to give ſome idea, what are the ſituations in which they may be introduced, it may be neceſſary to remark, that the "catch-work meadow" is made by cutting a ſpring, or ſmall ſtream, along the ſide of a hill, and thereby watering the land between the New Cut, (or as it is provincially called Main Carriage) and the original water-courſe which now becomes the "main drain." This is ſometimes done in particular inſtances, merely by making the new cut level, and ſtopping it at the end, ſo that when it is full, the water may run out at the ſide, and flood the land below it. But as the water would ſoon ceaſe to run *equally* for any great length, and would waſh the land out in gutters, it has been found neceſſary to cut ſmall parallel trenches or carriages, at diſtances of twenty or thirty feet, to catch the water again, and each of theſe being likewiſe ſtopt at its end, lets the water over its ſide, and diſtributes it until it is caught by the next, and ſo on over all the intermediate beds, to the *main drain* at the bottom of the meadow, which receives the water, and carries it on to water another meadow below, or, if it can be ſo contrived, another part of the ſame meadow on a lower level.

To draw the water out of theſe parallel trenches or carriages, and lay the intermediate beds dry, a narrow deep drain croſſes them at right angles, at about every nine or ten poles length, and leads from the main carriage at top, to the main drain at the bottom of the meadow.

When this meadow is to be watered, the ends of the carriages adjoining the croſs drains, are ſtopt with turf dug on the ſpot, and the water is thrown over as much of the meadow as it will *cover well* at a time, which the watermen call a "*Pitch of Work*;" and when it is neceſſary to lay this pitch dry, they take out the turves and let the water into the drains, and proceed to water another pitch.

This kind of water meadow is ſeldom expenſive: the ſtream of water being uſually ſmall and manageable, few *hatches* are neceſſary, and the land lying on a declivity, much leſs manual labour is required to throw the water over it regularly, and particularly *to get it off again*, than in the flowing meadows. The expenſe of making ſuch a meadow is uſually from three to five pounds per acre; the improvement frequently from fifteen ſhillings an acre to at leaſt forty. The annual expenſe of keeping up the works and watering the meadow, which is uſually done by the acre, ſeldom ſo high as 7*s.* 6*d.* per acre.

The other kind of water meadows, viz. thoſe uſually called "*Flowing Meadows*," require much more labour and ſyſtem in their formation. The land applicable to this purpoſe being frequently a flat moraſs, the firſt object to be conſidered is, how the water is to be *got off* when brought on; and in ſuch ſituations this can ſeldom be done, without throwing up the land in high ridges, with deep drains between them. A main carriage being then taken out of the river at a higher level, ſo as to command the tops of theſe ridges, the water is carried by ſmall trenches or carriages along the top of each ridge, and, by means of moveable ſtops of earth, is thrown over on *each* ſide, and received in the drains below, from whence it is collected into a main drain, and carried on to water other meadows, or other parts of the ſame meadow below. One tier of theſe ridges being uſually watered at once, is uſually called "a Pitch of Work;" and it is uſual to make the ridges thirty or forty feet wide, or, if water is abundant, perhaps ſixty feet, and nine or ten poles in length, or longer, according to the ſtrength and plenty of the water.

It is obvious from this deſcription, that as the water in this kind of meadow is not uſed again and again, in *one pitch*, as in the catch meadow, that this method is only applicable to large ſtreams, or to valleys ſubject to floods; and as theſe ridges muſt be formed by *manual labour*, the expenſe of this kind of meadow muſt neceſſarily exceed the more ſimple method firſt deſcribed: and the hatches that are neceſſary to manage and temper the water on rivers, muſt be much more expenſive than thoſe on ſmall brooks.

The expenſe, therefore, of the firſt making ſuch a meadow as this is, will be from twelve pounds to twenty pounds per acre, according to the difficulty of the ground, and the quantity of hatch-work required: but the improvement in the value of the land by this operation is aſtoniſhing. The *abſtract value* of a good meadow of this kind, may fairly be called three pounds per acre; but its value, when taken as *part of a farm*, and particularly of *a ſheep-breeding farm*, is almoſt beyond computation; and when ſuch a meadow is once made, it may be ſaid to be made for ever, the whole expenſe of keeping up the works, and watering it frequently, not exceeding five ſhillings per acre yearly, and the expenſe of the hatches, if well done at firſt, being a mere trifle for a number of years afterwards.

It has been alledged by thoſe who know very little of water meadows, that they render the country unwholeſome by making the water ſtagnant—Daily obſervation proves the fact to be otherwiſe in Wiltſhire; and

and the reaſon is obvious. It has been already ſaid, that a water meadow is a "hot-bed for graſs;" the action of the water on the land excites a *fermentation*; that fermentation would certainly in time end in a *putrefaction*: but the moment putrefaction begins, vegetation ends. Every farmer knows the commencement of this putrefaction, by the ſcum the water leaves on the land; and if the water is not then inſtantly taken off, the graſs will rot, and his meadow be ſpoiled for the ſeaſon. The very principle of water meadows will not permit water to be ſtagnant in a water-mead country; it muſt be always kept in action to be of any ſervice: beſides, many of the beſt water meadows were, in their original ſtate, a ſtagnant, unwholeſome moraſs.

The draining ſuch land, and making it ſo firm, that the water may be taken off at will, muſt contribute to the healthineſs of the country, inſtead of injuring it.

It is frequently aſked how it comes to paſs, that although water meadows are ſo uſeful as to be almoſt indiſpenſable in South Wiltſhire, yet in other counties where they are not known, the want of them is not felt; nay, that there are even in this diſtrict many pariſhes who have none, and even breed lambs without them? To this I anſwer, that the fair queſtion is not, "How do other counties do without them?" but "how could the farmers of this diſtrict, who are happy "enough to have water meadows, purſue their preſent ſyſtem of ſheep-breeding, if thoſe meadows were "taken away?" A ſyſtem which I do not heſitate to ſay, is more profitable to themſelves, their landlords, and the community at large, than any other that could be ſubſtituted in its room; and perhaps this queſtion cannot be anſwered better, than by exhibiting the contraſt between thoſe who have water meadows, and thoſe who have none, in the ſame diſtrict.

Every farmer who keeps a flock of ſheep, and particularly a breeding flock, in ſo cold and late-ſpringing a diſtrict as South Wilts, knows and feels the conſequences of the month of april. "That month *between hay and graſs*, in which he who has not water meadow for his ewes and lambs, frequently has *nothing*!" The ewes will bring a very good lamb with hay only; perhaps a few turneps are preſerved for the lambs, which, in a very favourable ſeaſon, may laſt them through march; but if they are then obliged to go to hay again, the ewes ſhrink their milk, the lambs "pitch and get ſtunted," and the beſt ſummer food will not recover them. To prevent this, recourſe is had to feeding the graſs of thoſe dry meadows that are intended for hay, the young clovers, and frequently the young wheat; in fact, every thing that is green—And who will pretend to eſtimate, what is the loſs that a farmer ſuffers by this expedient?

The ray-graſs, on the expoſed parts of this diſtrict, is ſeldom "a bite" for the ſheep, till near may-day. If the ſeaſon ſhould permit any turneps to be kept till that time (which can ſeldom be depended upon), they are not only of little nouriſhment to the ſtock, but they exhauſt the land ſo as to prejudice the ſucceeding crop. And it ought to be remarked by the way, that in many parts of this diſtrict, the ſoil is not at all favourable to the production of turneps. It therefore neceſſarily follows, that a farmer, under theſe circumſtances, has *no certain reſource* to ſupport his ſtock during this month, but hay—and even in that he is ſometimes diſappointed, by having been obliged, in the preceding ſpring, to feed all the land which he had laid up for a hay crop: he is then obliged to buy hay, and that frequently at the diſtance of many miles. And to add to his diſtreſs at this critical time, his young ewes are then brought home from wintering, to be kept nearly a month on hay alone.

In this month, which ſo often ruins the crops, and exhauſts the pockets of thoſe ſheep-breeding farmers, who have no water meadows, the water-mead farmers may be truly ſaid to be "in clover." They hain up their dry meadows early, ſo as almoſt to inſure a crop of hay; they get their turneps fed off *in time* to ſow barley, and have the vaſt advantage of a *rich fold* to manure it. They ſave a *month's hay*, and have no occaſion to touch their field graſs till there is a good bite for their ſheep; and their lambs are as forward at *may-day*, as thoſe of their leſs lucky neighbours are at *midſummer*. And after all, they are almoſt certain of a crop of hay on their water meadows, let the ſeaſon be what it will.

Management of Water Meadows.

As ſoon as the after-graſs is eaten off as bare as can be, the manager of the mead (provincially "the drowner") begins cleaning out the main drain, then the main carriage, and then proceeds to "right up the works," that is, to make good all the water carriages that the cattle have trodden down, and open all the drains they may have trodden in, ſo as to have one tier or pitch of work ready for "drowning," and which is then put under water (if water is plenty enough), during the time the drowners are righting up the next pitch. In the flowing meadows this work is, or ought to be, done early enough in the autumn, to have the whole mead ready to catch, if poſſible, "*the firſt floods after michaelmas*," the water being then "thick and good," being the *firſt* waſhing of the arable land on the ſides of the chalk hills, as well as of the dirt from the roads, &c. &c.

The length of this autumn watering cannot always be determined, as it depends on ſituations and circumſtances; but if water can be commanded in plenty, the rule is to give it a "thorough good ſoaking" at firſt, perhaps a fortnight or three weeks, with a dry interval of a day or two, and ſometimes two fortnights, with a dry interval of a week, and then the works are made as dry as poſſible, to encourage the growth of the graſs. This firſt ſoaking is to make the land ſink and pitch cloſe together; a circumſtance of great conſequence, not only to the *quantity* but to the *quality* of the graſs, and particularly to encourage the ſhooting of the new roots which the graſs is continually forming, to ſupport the forced growth above.

While the graſs grows freely, a freſh watering is not wanted, but as ſoon as it flags, the watering may be repeated for a few days at a time, whenever there is an opportunity of getting water, always keeping this fundamental rule in view, "*to make the meadows as "dry as poſſible between every watering*;" and to "*ſtop the water, the moment the appearance of any "ſcum on the land, ſhews that it has already had water "enough.*"

Some meadows that will bear the water *three weeks* in october, november, or december, will, perhaps, not bear it a *week* in february or march, and ſometimes ſcarcely *two* days in april or may.

In the catch meadows watered by ſprings, the great object is to keep "the works of them" as dry as poſſible between the intervals of watering; and as ſuch ſituations are ſeldom affected by floods, and generally have too little water, care is neceſſary to make the moſt of the water by catching and routing it as often as poſſible; and as the *top works* of every tier or pitch will be liable to get more of the water than thoſe lower down, care ſhould be taken to give to the latter a *longer time*, ſo as to make them as equal as poſſible.

It has already been ſaid, that the great object in this diſtrict of an early crop of water meadow graſs, is to enable the farmer to breed early lambs.

As ſoon as the lambs are able to travel with the ewes, (perhaps about the middle of march) they begin to feed the water meadows. Care is, or ought to be, taken, to make the meadows as dry as poſſible for ſome days before the ſheep are let in.

The graſs is hurdled out *daily* in portions, according to what the number of ſheep can eat in a day, to prevent their trampling the reſt, at the ſame time, leaving a few open ſpaces in the hurdles for the lambs to get through, and feed forward in the freſh graſs. One acre of *good graſs* will be ſufficient for five hundred couples for a day.

On account of the quickneſs of this graſs, it is not uſual to allow the ewes and lambs to go into it with empty bellies, not before the dew is off in the morning.

The hours of feeding are uſually from ten or eleven o'clock in the morning to about four or five in the evening, when the ſheep are driven to fold, the fold

being generally at that time of the year on the barley fallow. And the great object is to have water-mead grass, sufficient for the ewes and lambs, till the barley sowing is ended.

As soon as this first crop of grass is eaten off by the ewes and lambs, the water is immediately thrown over the meadows, (at this time of the year two or three days over "each pitch," is generally sufficient) and it is then made perfectly dry, and laid up for a hay crop. Six weeks are usually sufficient for the growth of the crop. It seldom requires eight; and there have been instances of great crops being produced in five.

The hay of water meadows, being frequently large and coarse in its nature, it is necessary to cut it young; and if made well, it then becomes of a peculiarly nourishing milky quality, either for ewes or dairy cows.

The water meadows are laid up for a second crop, in *some instances*; but this is only usual when hay is scarce; not that it is supposed to hurt the land, but the hay is of that herbaceous soft nature, and takes so long time in drying, that it is seldom well made. It is usually of much greater value to be fed with dairy cows. And for that purpose a flush of after-grass, so early and so rank, will be precisely of the same comparative service to the dairy, as the spring feed has been described to be for ewes and lambs.

The cows remain in the meadows till the "drowner" begins to prepare for the winter watering.

Water meadows are reckoned to be perfectly safe for sheep in the spring, even upon land that would rot sheep, if it was not watered, but in the autumn the best water meadows are supposed to be dangerous. But the circumstance is rather an advantage, than a disadvantage, to this district, as it obliges the farmers to keep a *few dairy cows*, to feed the water meadows in autumn, and to provide artificial grasses, or other green crops for their sheep, during that period.

From what has been so repeatedly urged, on the necessity of making water meadows *dry*, as well as wet, every reader must have inferred the advantage of having them, if possible, on "*a warm absorbent bottom.*"

The bottom or sub-soil of a water mead, is of much more consequence than the quality or the depth of the top soil.

Not but that land on peaty or clay bottoms, may be considerably improved by watering; and there are many good water meadows on such soils, but they are not so desirable on account of the difficulty of draining the water out of them, and making them firm enough to bear treading.

A loose gravel, or what, perhaps, is still better, a bed of broken flints, with little or no intermixture of earth, wherever it can be obtained, is the most desirable bottom.

On many of the best water meadows in this district, where the bottom is a warm, absorbent gravel, or rather a bed of broken flints; the soil is not six inches deep, and that depth is quite sufficient, in those seasons when water is plenty, as the grass will root in the warm gravel in preference to the best top-soil whatever, and such meadows always produce the earliest grass in the spring. Nor is it so very material, of what *kinds of grasses* the herbage is composed, when the meadow is made. *That kind* will always predominate, which *agrees best with the soil and the water*, provided the supply of water is regular and constant *every winter*, otherwise *that kind* will predominate which will bear *wet and dry*, and some of the worst grasses, in their native state, will become the best when made succulent by plenty *of water*.

Nature has given a striking lesson on this subject in this very district, viz. In the two small meadows at Orcheston (six miles north-west of Amesbury), usually called the "Wiltshire *Long Grass* Meads."

These meadows adjoin together, and contain, in the whole, only two acres and an half, and yet the crop they produce in a favourable year is so immense, and of so good a quality, that the tythe hay of them was once (according to the information of the tenant) sold for five guineas.

Much has been said, and little understood, about those meadows, and the grass they produce.

Many proposals and attempts have been made to propagate the grass, and many skilful botanists have returned from the spot, without finding out *which was the long grass*, its appearance being so very different in different seasons.

It has not been till lately, that it was discovered by Mr. Sole, of Bath, and communicated to the Bath Society, that the greatest part of the herbage of these meadows, was nothing more than the "black couch, or couchy bent." ("Agrostis "Stolonifera") one of the worst grasses, in its native state, the kingdom produces, and the peculiar plague of farmers in this particular district. It usually abounds in such arable land as is too poor to bear the white couch ("Triticum repens"), and is the general and almost only herbage of the old burnbeaked worn-out downs; and in that situation is of that coarse, hard, wiry nature, that no cattle will eat it. It forms a thick tough rug over the land, that preserves itself, and kills every thing else. But in these meadows, when abundantly fed with water, it is of a juicy, succulent, nourishing quality, *as grass*, and makes the most desirable *hay* in the district, particularly for sheep.

These meadows lie in the upper part of the bourn that runs from Tillhead to Stapleford, and in some winters the rivulet that passes through them is very inconsiderable. They are not laid out in regular form for watering, the supply of water being too irregular, but depends on the floods entirely; and being situated at a sharp turn of the valley, which is narrow at that spot, the water makes an eddy, and deposits its sediment upon them. The bottom is almost an entire bed of loose flints, so that the roots shoot freely in it, and produce strong succulent shoots, which fall down, and taking root at the joints, shoot out, and drop, and root again, so that the stalk is frequently eight or ten feet in length from the original root, and though the crop is exceedingly thick on the ground; it is, perhaps, not eighteen inches high.

Although this grass is most abundant in these two meadows, it is also very predominant in the greatest part of the meadows below it, on the same stream, and whenever the winters are productive of floods, the grass in all of them is abundant in quantity, succulent and juicy in quality, and the hay exceedingly nutritive. But in a scarce year of water, their produce is very small indeed, and that of a very bad quality.

On examination of other meadows, in different bourns of this district, the same grass appears uniformly to abound in those that are *situated near the spring-heads*, and which, in some years, have plenty of water, and in some none at all: the same remark is as uniformly made on its variation in quantity and quality, *according to the wetness or dryness of the winter*; and the most probable way of accounting for it, is, "*That it is almost the only grass, common to water "meads, that will stand wet and dry.*" For though it will live, and indeed flourishes most, when under water, yet no dry weather will kill it.

The Flooding of Meadow land is also of great importance in Dorsetshire, where the proportion of water meadows is very great, and no where better managed, upon the same principle as in Wiltshire. The early vegetation indeed produced by flooding is of such consequence to the Dorsetshire farmer, that without it, their system of managing sheep would be almost annihilated.

Their water-meadows are formed in wide beds, with channels for the water to run between; and the descent is so well taken care of, that the water is always in motion, and is never suffered to ferment or stagnate: at the same time great care is taken, to have a sufficient quantity of underground drains to carry off the springs, and make the boggy parts sound, by which means, no sooner has the water passed off, than the land becomes sufficiently dry to be pastured by sheep, from the middle of march to the first or second week in may; when being again watered for several weeks, it is fit to

mow about the beginning of July, and produces two tons of hay on an acre upon an average. The hay being off, it is again watered till the beginning of September, by which time it is full of grass, and supports the dairy cows till Chriſtmas. Sheep are never turned on in the autumn, rotting being conſidered as inevitable at that ſeaſon.

No manure is ever put on theſe meadows. The firſt making coſts from four to ſix pounds an acre: afterwards they are attended with ſmall expenſe and trouble, in proportion to the profit. The hay however is not much eſteemed for its quality in feeding beaſts, and is therefore generally given to cows and ſheep in the winter.

The rivers in Dorſetſhire are particularly adapted to favour the proceſs of flooding land, being frequently divided into many ſmall ſtreams, which are in general ſhallow, but quick and rapid; by which means they are eaſily diverted, and a greater proportion of land can be flooded than where a river runs through a country hurled below its banks, in one dead ſtream only. The greateſt part of the watered meadow, which is now rented near towns from 20s. to 3l. an acre, and with ſtums at 35s., without this improvement, would not be worth more than 10s. or 12s.

The proceſs of watering meadows, with drawings, has been deſcribed by Mr. George Boſwell of Piddletown, in Dorſetſhire, in a pamphlet publiſhed on this ſubject.

Even where there is no river or brook, land floods, the waſh of roads, the ſoak of the farm-yard, &c. may frequently be uſed for this important purpoſe with ſucceſs[1].

Irrigation is alſo well underſtood in Hampſhire, where the rents of watered meadows riſe from 40s. to 3l. and even 5l. an acre. Thoſe which are on gravelly and chalky ſoils being much ſuperior to thoſe on peat. They are managed and fed as above deſcribed in Wiltſhire and Dorſetſhire. Without watering they would not be worth more than 20s. an acre; and with it their produce of hay, with ſpring and autumn food, is eſtimated at 5l. Land with a peaty boggy bottom, yielding nothing but ſedge, has been advanced from 3s. or 4s. to 40s. rent an acre. Theſe ſoils however rot univerſally in ſummer and autumn, and probably would do ſo in ſpring, if any thing elſe were turned in except ewes with lambs by their ſide, for ewes that give milk never rot: but on dry ſound ſoils they affirm here that ſheep do not rot at any time[2].

The farmers in Hampſhire are ſo aware of the great advantages ariſing from water-meadows, that in many inſtances they have been at a conſiderable expenſe in purchaſing a ſupply of water, beſides the firſt expenſe of from 5l. to 6l. an acre, excluſive of the continual repair of the ſluices, &c.[3]

The benefit to be derived from the flooding of land is alſo well underſtood, and the operation judiciouſly performed, in Brecknockſhire. Where, in moſt parts, the brooks are formed by ſprings, iſſuing from the hills, at different degrees of elevation, from one to twelve hundred feet above the beds of the two main rivers: excepting therefore the detached hills, interſperſed through the middle of the county, moſt of it might be watered, if the intermixture of property did not hinder.

Sand being the prevailing ſoil here, this land is wonderfully well adapted to receive benefit from being flooded with any water that is not charged with metallic particles.

They reckon it of great importance to catch the firſt water of a flood after a long drought; more eſpecially if the water be collected from common hills or other paſture grounds that are hanging, or ſide lands where ſheep and cattle have paſtured; their dung, and the fine particles of earth being all waſhed off by the firſt autumnal floods.

This country abounding in ſwells, is in a peculiar degree adapted to derive every advantage from flooding; becauſe the water moves quickly off, as ſoon as it has done its buſineſs.

If the land be ſteep, a ſmaller quantity of water is ſuffered to go over it at a time, leſt the water ſhould carry along with it ſome particles of the looſe earth.

They prefer clear water from the ſpring for their ſandy land, but brook or river water for clay.

The farmers are very ſenſible of the benefit of having water from the farm yard turned over their meadows, and they are very careful to have the field under the houſe always a meadow. The good effects of the droppings from the farm-yard and fold upon this ſandy land are aſtoniſhing.

When water from lime-ſtone can be had, it is preferable to any other: and water from different ſprings is beneficial in very different proportions[4].

The late famous Mr. Bakewell of Diſhley ſtands foremoſt in the Midland Counties as an improver of graſs-lands by watering.

Formerly a ſuite of meadows, lying by the banks of the Soar, received conſiderable benefit from the water of the river judiciouſly ſpread over them in time of floods. But now not only theſe meadows, but near a hundred acres of higher land, lying entirely out of the way of natural floods, are watered on Mr. Boſwell's principle.

Mr. Bakewell diverted to his purpoſe a ſmall brook, the natural channel of which ſkirted the fartheſt boundary of his farm; falling with a conſiderable deſcent down a narrow valley. It is therefore turned, at the higheſt place that could be commanded, and carried round the point of a ſwell, which lies between its natural bed and the homeſtead. This not only commanding the ſkirts of the hill by watering, but ſupplying the houſe and farm offices with water; filling a drinking pool for his cattle; a waſh-pool for ſheep; floating down his turneps from the field to the cattle ſheds; &c.[5].

As to thoſe meadows which cannot be flowed, there ſhould be the ſame care taken to weed and roll them, as has been directed for the Water Meadows; as alſo never to let heavy cattle graze upon them in winter when they are wet; for the cattle will then poach them, and greatly injure the graſs; therefore theſe ſhould be fed down as cloſe as poſſible in the autumn, before the heavy rains fall to render the ground ſoft; and thoſe paſtures which are drier, may be kept to ſupply the want of theſe in winter; and where there are not cattle enough to eat down the graſs in time, it will be much better to cut off what is left, than to ſuffer it to rot upon the ground, for that will prevent the graſs from ſhooting early in the ſpring, but where people have not cattle enough of their own to eat down the graſs in time, they had much better take in ſome of their neighbours, than ſuffer their fog (as it is called) to remain all the winter. When theſe meadows are fed in the autumn, the greater variety of animals are turned in, the cloſer they will eat the graſs; and I am fully convinced, the cloſer it is eaten, the better the graſs will come up the following ſpring; and, if during the time the cattle are feeding, the meadows are well rolled, the animals will eat the graſs much cloſer than they otherwiſe would.

Thoſe perſons who are beſt ſkilled in this part of huſbandry, always dreſs their meadows every other, or at leaſt every third year, without which it is in vain to expect any good crop of hay; but the generality of the farmers are ſo much diſtreſſed for dreſſing to ſupply their corn land, as not to have any to ſpare for their meadows, they are therefore content with what the land will naturally produce, rather than take any part of their manure from their arable ground. But this is a very imprudent piece of huſbandry; for if land is to be annually mowed for hay, it cannot be ſuppoſed that it will produce a good crop long, unleſs proper dreſſings are allowed it. And when ground is once beggared for want of manure, it will be ſome years before it can be recovered again. See PASTURE.

[1] Agricultural ſurvey of Dorſet by Claridge, p. 34.
[2] Young's Annals, vol. 23. p. 264.
[3] Driver's ſurvey of Hants, p. 19.
[4] Clark's ſurvey of Brecknock. and Young's Ann. 23. 192.
[5] Marſhall's Mid. 1. 284.

[The ſcourings of ditches, mud of ponds, and almoſt any earth, form good dreſſings for meadow lands, if ſuffered to lie, and well turned over. Theſe, together with alternate mowing and feeding, will in general keep meadows in heart, without robbing the arable land.]

Draining.

The Draining of land is another great improvement, for though meadows which can be overflowed produce a much greater quantity of herbage, yet where the wet lies too long upon the ground the graſs will be four and coarſe, and ſo overrun with ruſhes and flags as to be of ſmall value. Cold ſtiff clays are moſt liable to this, where the water cannot penetrate, but is contained as in a diſh; ſo that the wet which it receives in winter continues till the heat of the ſun exhales it.

The method of draining ſuch lands is to cut ſeveral drains acroſs them where the water is ſubject to lodge; and from theſe croſs drains to make others, to carry off the water to ponds, brooks or rivers, in the lower parts of them. Theſe drains need not be made very large, unleſs the ground be very low, and ſo ſituated as not to be near any outlet; in which caſe large ditches ſhould be dug at proper diſtances, in the loweſt part of the ground, to contain the water; and the earth which comes out of theſe ditches ſhould be ſpread on the land, to raiſe the ſurface. But where the water can be conveniently carried off, under-ground drains ſhould be made at proper diſtances, which may empty themſelves into the large ditches.

The uſual method of making under-ground drains, is to dig trenches, and fill the bottoms with ſtones, bricks, ruſhes or buſhes; covering them over with the earth dug out of the trenches. But when there is a flood, theſe drains are often ſtopped by the ſoil which the water brings down with it.

The beſt method of making theſe drains is, to dig the principal ones three feet wide at top, ſloping them down for two feet in depth, where there ſhould be a ſmall bank left on each ſide, upon which croſs-ſtakes or bearers ſhould be laid, and below this fet-off an open drain ſhould be left, at leaſt one foot deep, and ten or eleven inches wide. Smaller drains of ſix or ſeven inches wide, and the hollow under the buſhes eight or nine inches deep, ſhould be cut acroſs the ground, to diſcharge the water into the large drains. The number and ſituation of theſe muſt be in proportion to the wetneſs of the land, and the depth of earth above the buſhes muſt be proportioned to the intended uſe of it; for if the land is to be ploughed, the drain muſt not be ſhallower than fourteen inches, but for meadow land, one foot will be enough: for when the buſhes lie too deep in ſtrong land, they will have little effect, the ground above binding ſo hard, as to detain the wet on the ſurface. The drains being dug, the larger ſticks of the bruſh-wood ſhould be cut out to pieces of ſixteen or eighteen inches in length, to lay acroſs upon the ſide banks of the drain, at about four inches diſtance; and the ſmaller bruſh-wood, furze, broom, heath, &c. ſhould be laid lengthwiſe pretty cloſe over theſe, with ruſhes, flags, &c. on the top of them, and then the earth, to cover the whole.

Such drains will continue good many years, and the water will find an eaſy paſſage through them. Where there is plenty of bruſh-wood they are made at an eaſy expenſe; but where wood is ſcarce they are very chargeable. In this caſe cuttings of willow or black poplar might be planted in moiſt places, which would furniſh bruſh-wood for this purpoſe in four or five years.

In countries where there is plenty of Stone, that is the beſt material for making under-ground Drains: for when theſe are properly made, they will never want repairing.

The beſt time for making theſe drains is about michaelmas, before the heavy rains of autumn fall, becauſe the land being then dry, the drains may be dug to a proper depth.

When the drains are finiſhed, and the water carried off the land, pare off the ruſhes, flags, &c. lay them in heaps to rot, and they will afford manure. Plough the ground to deſtroy the roots of noxious weeds; and if it be laid fallow for one ſeaſon, and ploughed two or three times, it will greatly mend the land. Spread the rotten ruſhes and flags over it, and ſow graſs ſeeds.

Some perſons burn the rubbiſh that is pared off the land, and ſpread the aſhes.

[This practice of under-draining land both for meadows and the plough, has been long practiſed in Eſſex.

Their method of opening the principal drains is to plough four furrows, throwing two each way, the two inſide furrows being ploughed deeper than the others. After the plough, the earth is ſunk a ſpit deep with a common ſpade, and afterwards another ſpit with a land-ditching ſpade, called a griping ſpade. Laſt of all, a ſcoop is made uſe of to take out the looſe earth. This drain, when completed, is about two feet deep, or from twenty to twenty-ſix inches: the breadth at top juſt wide enough to admit a man to work in, and at bottom as narrow as poſſible, not more than two inches. In the ſubordinate drains, the ſpit with the common ſpade is omitted, they are therefore not more than eighteen inches deep. The drain is filled up as high as the top of the ſpade-work, with bruſh-wood at the bottom, and a piece of wood as big as a man's leg, on the top; a little ſtraw is ſhaken over that, and the remainder of the drain is filled up with earth. The greater the proportion of wood, and the harder the earth is preſſed in, the longer will be the duration of the work. The wood muſt be ſuch as runs pretty free in its branches: Elm, Alder and Sallows are as good as any; but Black-thorn is the moſt durable. In very ſtiff land, ſtraw, ſtubble or haulm only will be ſufficient for the purpoſe.

The duration varies from twelve to twenty-five years, and ſome drains filled with ſtraw have been known to laſt much longer.

The expenſe, with buſhes, amounts, on an average, every thing included, to two guineas, or 45s. an acre; the men being paid three ſhillings a rood rods for the work. The diſtance between the drains is uſually from five and a half to eight yards.

The principles to be attended to in this mode of draining are—firſt, to get a good outfall or diſcharge; and ſecondly, to draw all the drains obliquely acroſs the deſcent of the ground, not right down, not right acroſs the fall. A great error in this mode of draining has frequently been committed in marking out and making numerous drains acroſs the ſides of ſpringy hills, which might in many caſes be drained completely by a ſingle drain, judiciouſly diſpoſed, on Mr. Elkington's principle[1].

In Devonſhire, drains are made from four to twelve feet in depth, and are never judged to be well done, unleſs they are dug to the bed of gravel. On this a gutter is built, with a wall of ſtones on each ſide the trench, leaving between the two walls an opening of three, four or ſix inches, in proportion to the ſize of the ſpring, and carefully covered on the top with flat ſtones. On theſe covers the ſmall ſtones gathered off the adjoining lands are thrown, from three to ſix inches or more in thickneſs; lining the top with fern, ſtraw, furze, &c. and filling up with the mould thrown out. Theſe ſpringy are frequently conducted to a pond, and made ſome other uſe of for watering the land, &c.[2]

In peat countries, pieces of peat of the uſual ſhape and dimenſions, are pierced with a kind of punch, when wet, by which a hole is left about three inches ſquare, a little arched at the top; they are then left to harden in the air, and when fit are placed ſide by ſide for a drain[3].

When bricks are uſed for drains, if the ground be ſoft and ſpungy, the bottom of the drain is laid with the bricks placed acroſs; tiles or ſlates will anſwer the purpoſe. Over theſe, on each ſide, two bricks are laid

[1] Kent's hints, 17. Young's agr. ſurv. of Suffolk, 22.
[2] Agric. ſurv. of Devon, by Fraſer, 44.
[3] Lancaſhire, 58.

flat,

flat, one upon the other: this is covered with bricks laid flat. The bricks ſhould be ten inches long, four broad and three thick.

This work is too expenſive, unleſs a drawback might be allowed on the heavy tax upon the material.

When the bottom of the trench is firm and ſolid, as in clay or marl, no bricks need be laid in the bottom: the ſides are then formed by placing one brick edgewiſe, inſtead of two laid flat. This is much cheaper, and in ſuch land equally durable [1].

Double bricks, with a hollow through the middle, form a good drain, which is laid very expeditiouſly.

Where ſtone is plentiful and near at hand, no material is ſuperior to it for this purpoſe. Theſe drains are in general made larger than thoſe with brick; the bottom being at leaſt eight inches wide.

In Wiltſhire their ſtone-drains are in general ten or twelve inches in width, with perpendicular ſides. Sometimes the ſtones are ſo placed as to leave a watercourſe at bottom, by ſetting two flat ſtones triangularly, to meet at the points: but it is a better way to cover the bottom with a flat ſtone, and then to put three other flat ſtones upright, leaving the water to find its way between them; in both caſes filling up the reſidue of the drain to the top, or near it, with looſe ſtones.

Where only ſmall round ſtones can be got, the drain may be made taper, from nine inches at top to nothing at bottom, and about three feet deep; filling it up with the ſmall ſtones firſt, and finiſhing with a thin turf at top. Where gravel is more plentiful, it is found to anſwer the purpoſe very well, if ſcreened or waſhed.

In all caſes, the general opinion is, that thoſe drains laſt longeſt, which have the leaſt or narroweſt waterway left at bottom; the force of the water being then ſufficient to clear away any little obſtacles [2].

Where none of the above materials are to be had, there is ſtill another ſort of covered drain which may be adopted in a ſtiff tenacious ſoil. This is made with turfs or ſods, and beſides being the cheapeſt, is as laſting as any, where the land is ſufficiently cohæſive. The inverted turf is either put upon a ſhoulder, leaving a hollow part under it, and the remainder of the drain is filled up with the earth that came out of it: or the drain is cut out in a wedge, or the form of the letter V, and when the earth is taken out, ſix or eight inches of the bottom part of the wedge are cut off, and the remainder is filled up. If a few ruſhes were put round the bottom of this wedge, ſo as to keep the lower part from dropping, and the ends of the ruſhes were drawn upwards, between the ſides of the drain and the wedge, it would be an improvement. Care muſt be taken, to keep off all cattle till theſe drains have had time to ſettle [3]. The entrances ſhould have a fence of brick or ſtone to ſecure them. Their aperture at top ſhould be eighteen inches, their depth thirty inches. The ſtrength with which the ſods are ſupported, and their depth in the ground, being at leaſt twelve inches, will effectually prevent their removal by any weight on the ſurface; and ſecure them from all effects of the weather.

In looſe crumbly ſoils, where the wetneſs does not ariſe from the retention of water by an underſtratum of clay, but from ſprings, theſe drains are improper: but when the wet is prevented from paſſing off by clay or marl, theſe ſod drains are excellent [4].

Thus clay ſoils, through which water can neither paſs from the ſurface to the bottom, nor from the bottom to the ſurface, muſt be relieved from too much wet by ſurface drains: and where the ſurface is porous above, but tenacious below, ſome of the modes of hollow-draining deſcribed above may be ſucceſsfully practiſed. But theſe will not effectually cure lands rendered wet by waters confined beneath the ſurface, and attempting to riſe in the manner of ſprings, which is the great object of Mr. Elkington's ſyſtem of draining; and this he obtains not by uſing palliatives, but by getting the command of the ſubterraneous waters themſelves, and thus completely and radically cutting off the cauſe of the miſchief.

The principal uſe of Mr. Elkington's ſyſtem is that of draining bogs, and though it may be applied to any ſpringy lands, yet it is in this point of view the moſt important; both becauſe immenſe tracts of valuable land, which are of a moraſſy nature are loſt to the community, from an idea that it is impoſſible to drain them; and land of that nature and value, in proportion to its extent, may be drained at the ſmalleſt expenſe, and when drained becomes perhaps the moſt valuable of any.

When a bog or moraſs is to be drained, the direction in which the trench is to be dug is firſt to be aſcertained. This is the moſt difficult part of the whole buſineſs, and cannot be fully underſtood but from much practice. The following rules however may be of ſervice.

1. The whole depending upon the nature of the bog to be drained, and the ſtate of the adjacent country, the neighbouring ſtrata muſt be aſcertained as far as poſſible, whether they be of ſtone, gravel, ſand or marl; for the water muſt be lodged in one of theſe, and it is neceſſary to aſcertain in which.

2. The trench muſt be directed ſo as to fall in with the bottom of the bed which occaſions the miſchief, and the particular ſpot where the main ſpring lies. One ſpring may probably occaſion the whole bog, which having no proper vent, forces the water through many ſmall veins, even to a great diſtance, making the whole a ſwamp. By draining the main ſpring, the others follow of courſe.

3. If there are various beds through which water iſſues, ſtone is to be preferred for draining the whole; the water being much more eaſily drawn through that, than through gravel, ſand or marl; conſequently by draining the ſpring there, the whole water which communicates therewith flows to it; water always preferring a ſtraight or clear to a crooked channel. But in ſtone beds the trench ought to be made from ſix to eight yards from the tail of the bed, or the place where the rock ends, becauſe in limeſtone and other rocks, the tail is harder than any other part of the rock, and there are few if any fiſſures in it; but by going a few yards above, you get into a ſofter part of the bed, and the water is more acceſſible. The tail of theſe beds may often be found at a point or promontory jutting out from the adjacent heights.

4. The trench in general ſhould be directed in a line with the bottom of the hill, becauſe it makes the beſt ſeparation between the upland and the meadow incloſures, and the ſpring can beſt be intercepted. The trench however muſt be carried in the line of the ſpring, or near it; for if it diverges from it any diſtance, all proſpect of reaching the ſpring, by tapping or otherwiſe is loſt.

5. It is better to make a new trench, than to tap the ſpring in any old brook or run of water, where that may be practicable; for though the ſpring, when once it burſts out, has force enough to throw up any ſtones, ſand, &c. that may accidentally fall into it, yet brooks in a flood may bring down ſuch immenſe quantities as completely to choak up the ſpring; and ſo much caution is neceſſary to prevent any riſk of ſuch a circumſtance, that when the trench croſſes any runlet of water proceeding from a ſmall brook, or from a collection of ſurface water, the trench is puddled ſo as to receive it, leſt it ſhould blow up and deſtroy the works.

Laſtly, the general line of direction being fixed on, and the trench marked out, begin at the bottom or loweſt level, carrying the trench gradually up under guidance of the ſpirit level: a few inches fall in a hundred yards will be ſufficient.

In digging the trench, no tools but thoſe of the common ſort are made uſe of, and common labourers can carry it on under an experienced foreman or overſeer. The auger, which muſt often be uſed for tapping the ſpring, may be from an inch and half to two inches diameter, and is applied in the ordinary manner; if in boring, a ſtone be met with, the auger

[1] Hunter's Eſſays, 6. 437.
[2] Agric. ſurv. of Wilts, 142.
[3] Hunter's Eſſays, 6. 445. Kent's Hints, 26.
[4] Hunter, 443.

must be taken off, and a chiſſel or punch ſcrewed on, to penetrate ſo hard a ſubſtance.

Sometimes the ſpring is cut off by the trench alone; but in many caſes it lies greatly below the level of the trench, and then it is neceſſary to uſe the auger for tapping the ſpring. Mr. Elkington bored an auger hole near Tamworth, thirty feet in depth, which threw up three hogſheads of water in a minute, and completely drained all the neighbourhood. If it be certain that all the water in the ſpring flows through the hole made by the auger, the trench may be ſtopped; but if not, it muſt be carried farther, and the auger again made uſe of.

The trench being made, and the ſpring cut off, either by tapping or otherwiſe, it is then neceſſary to determine whether the drain ſhould be open or covered. If it can at the ſame time be made a fence, it had better be open; if not, it ſhould be covered. No apprehenſion need be entertained of the holes made by the auger being filled up, in either caſe, unleſs other waters be admitted; becauſe ſuch is the force of the ſpring, that it will throw up any ſtones, earth or other ſubſtances that might accidentally get into it, and can be injured by nothing but great quantities coming upon it at once.

This ſyſtem of draining is ſometimes attended with extraordinary conſequences. By it, not only the land below the natural ſpring, or even above the artificial ſpring, is drained, but the waters from the neighbouring heights, finding a new and eaſier channel, abandon the places to which they formerly went, and thus a tract of country may be drained, without any apparent communication with the ſpring intended to be drained, or the trench made to it. Nay a drain made on one ſide of a hill has been known to make ſprings and wells on the other ſide quite dry, by opening an eaſier channel, to which the water naturally draws.

This practice may not only ſerve the purpoſe of draining land, but the complete command of a treaſure of water being thus obtained, it is probable that it may in many caſes be uſed for flooding land, for mills and navigations, for ſupplying private houſes, and even villages and towns with wholeſome water. A country loſes that dampneſs which is ſo pernicious to the health of the inhabitants, and its attendant, a foggy atmoſphere. The produce of the ſoil is conſiderably increaſed in quantity, and improved in quality. The rot, that deſtructive malady, to which ſo many millions of ſheep fall a ſacrifice, is prevented. In ſhort, the advantages of draining are ſo many, that it is aſtoniſhing that the principles of the art have not been better underſtood, and that greater and more extenſive exertions have not been made in ſo ſalutary and beneficial a practice [a].

The method of draining ſpringy and boggy lands by tapping, ſeems to have been hit upon about the ſame time by Dr. Anderſon and Mr. Elkington, independent of each other; the former being led to it by reaſoning, the latter by accident. It appears to have been imperfectly practiſed, antecedent to either; but Mr. Elkington has the merit of having firſt applied the auger to this buſineſs, and of having rendered this important practice ſo general as it is now become.

MEADOW GRASS. See *Poa*.

——— RUE. See *Thalictrum*.]

——— SAFFRON. See *Colchicum*.

——— SAXIFRAGE. See *Peucedanum* and *Seſeli*.

——— SWEET. See *Spiræa*.

MEALY TREE. See *Viburnum*.

MEMBREA. See *Rhopium*.]

MEDEOLA. (*Dimin. from Medea, the famous ſorcereſs of antiquity.*)

Lin. gen. n. 455. *Reich. n.* 490. *Schreb. n.* 619. *Juſſ.* 42.

Claſſ. 6. 3. Hexandria Trigynia.

Nat. order of *Sarmentaceæ*. *Aſparagi*, Juſſ.

GENERIC CHARACTER.

CAL. none, unleſs the corolla be called ſo.

COR. *Petals* ſix, ovate-oblong, equal, ſpreading, revolute.

STAM. *Filaments* ſix, awl-ſhaped, the length of the corolla. [b] *Anthers* incumbent.

PIST. *Germs* three, horned, ending in *Styles*. *Stigmas* recurved, thickiſh.

PER. *Berry* roundiſh, three-cleft, three-celled.

SEEDS ſolitary, heart-ſhaped.

OBS. M. virginiana *has only four petals.*

ESSENTIAL CHARACTER.

Cal. none. *Cor.* ſix-parted, revolute. *Berry* three-ſeeded.

SPECIES.

1. Medeola virginiana. *Virginian Medeola.*
Lin. ſpec. 483. *Juſſ.* 349. *Reich.* 2. 127. *Gron. virg.* 39. *Plak. phyt. t.* 328. *f.* 4. (Lilium).
Leaves in whorls, branches unarmed.
2. Medeola aſparagoides. *Broad-leaved ſhrubby Medeola.*
Lin. ſpec. 484. *Juſſ.* 349. *Reich.* 2. 128. *mant.* 370. *hort. cliff.* 122. *Till. piſ.* 16. *t.* 12. *f.* 2. (Aſparagus). *Herm. lugdb. t.* 631. (Laurus).
Dracæna Medeoloides. *Lin. ſyſt.* 334. *ſuppl.* 203. *Dill. muſc. n.* 7.
Leaves alternate ovate ſubcordate at the baſe obliique.
3. Medeola anguſtifolia. *Narrow-leaved ſhrubby Medeola.*
Mill. dict. n. 2. *Ait. hort. kew.* 1. 490. *Till. piſ.* 17. *t.* 12. *f.* 2. (Aſparagus).
Leaves alternate ovate-lanceolate.

DESCRIPTIONS, *&c.*

[Stem herbaceous, erect or ſcandent, ſimple or branched; branchlets and leaves ſpathed at the baſe; flowers ſolitary, axillary. M. virginiana has whorled leaves, and the habit of Trillium or Paris. Juſſieu doubts whether it appertains to this genus [c].]

1. This has a ſmall ſcaly root, from which ariſes a ſingle ſtalk about eight inches high. There is one whorl of leaves at a ſmall diſtance from the ground, and at the top are two leaves ſtanding oppoſite: between theſe come out three ſlender peduncles which turn downwards, each ſuſtaining one pale herbaceous flower with a purple pointal. Miller follows Linnæus in placing it in this genus, though the characters do not exactly agree, the corolla being either polypetalous or cut into many ſegments, and having but five ſtamens. He ſpeaks however with diffidence, it being ſome years ſince he ſaw the flowers.

[He probably therefore cultivated it ſeveral years before 1759; though the era of its cultivation is ſet down for 1768 in the Kew catalogue.—It is a native of Virginia, and flowers in june.]

2. This has a root compoſed of ſeveral oblong knobs, which unite at the top, like that of Ranunculus; from which ariſe two or three ſtiff winding ſtalks, dividing into branches, and riſing four or five feet high, if they meet with ſupport. Leaves ſeſſile, ending in acute points, of a light green beneath, but dark above. The flowers come out from the ſide of the ſtalks, ſingly or two on a ſlender ſhort peduncle. Petals dull white. It flowers at the beginning of winter, and the ſeeds are ripe in the ſpring.

Native of the Cape of Good Hope. [Cultivated in 1702, by the Dutcheſs of Beaufort [d]. See Dracæna, and Retz. obſ. 5. p. 3. n. 49.]

3. This has a root like the preceding, but the ſtalks are not ſo ſtrong; they climb higher, but do not branch ſo much; the leaves are much longer and narrower, and are of a grayiſh colour. The flowers come out from the ſide of the branches, two or three upon each peduncle; they are of an herbaceous white colour, ſhaped like thoſe of the preceding, and appear about the ſame time, but have not produced fruit here.

Native alſo of the Cape. [Cultivated by Mr. Miller in 1752. It flowers from december to march [e].]

PROPAGATION AND CULTURE.

1. This is hardy enough to live in the open air; but producing no ſeeds here, can be increaſed only by offſets.

2. 3. Both theſe ſorts propagate freely by offſets from the roots, ſo that when they are once obtained, there will be no neceſſity of ſowing their ſeeds, which commonly lie a year in the ground, and the plants will not be ſtrong enough to flower in leſs than two years more, whereas the offſets will flower the following ſeaſon. The time for tranſplanting and parting the

[a] Young's Ann. 28. 77.

[b] Juſſieu, gen. [c] Hort. kew. [d] Ibid. [e]

roots is in july, when their ſtalks are entirely decayed, for they begin to ſhoot towards the end of auguſt, and keep growing all the winter, and decay in the ſpring. Theſe roots ſhould be planted in pots filled with good kitchen-garden earth, and may remain in the open air till there is danger of froſt, when they muſt be removed into ſhelter, for they are too tender to live through the winter in the open air; but if they are placed in a warm green-houſe, they will thrive and flower very well, but they do not produce fruit unleſs they have ſome heat in winter, therefore where that is deſired, the plants ſhould be placed in a ſtove kept to a moderate degree of warmth. During the winter, when the plants are in vigour, they ſhould be frequently but gently watered; but when the ſtalks begin to decay, they muſt have very little wet, for much moiſture will rot them while they are in an inactive ſtate; during which time, if the pots are placed where they have only the morning ſun, they will require little or no water: but when they begin to ſhoot out their ſtalks, they ſhould be removed to a warmer ſituation, and ſhould then be frequently but gently watered.

The flowers of theſe plants making no great appearance, the plants are not preſerved for their beauty, but as their ſtalks are climbing, and their leaves are in full vigour in winter, during that ſeaſon they add to the the variety in the green-houſe.

[MEDEOLA SCULEATA. See *Jacquinia*.

MEDICA. See *Medicago*.

MEDICAGO. (*So named from its native country Media, whence it came into Greece with Darius Hyſtaſpes.* Pliny.)

Lin. gen. n. 899. *Reich. n.* 971. *Schreb. n.* 1214. *Tournef. t.* 231. *Juſſ.* 356. *Gærtn. t.* 155. Medica. *Tournef. t.* 231.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ſtraight, campanulate-cylindrical, half-five-cleft, acuminate, equal.

COR. papilionaceous. *Banner* ovate, entire, the margins bent in, the whole bent back. *Wings* ovate-oblong, affixed by an appendage to the keel, with the ſides converging under the keel. *Keel* oblong, biſid, ſpreading, blunt, bent down from the piſtil, and gaping from the banner.

STAM. *Filaments* diadelphous, united almoſt to the tops. *Anthers* ſmall.

PIST. *Germ* pedicelled, oblong, curved in, compreſſed, involved in the filaments, ſtarting from the keel, bending back the banner, ending in a ſhort, awl-ſhaped, almoſt ſtraight ſtyle. *Stigma* terminating, very ſmall.

PER. *Legume* compreſſed, long, bent in.

SEEDS ſeveral, kidney-ſhaped or angular.

OBS. Cochleatæ Riv. *have the legume ſpiral like the ſhell of a ſnail.*

Falcatæ Riv. *have the legume bowed or arched like a ſickle.*

ESSENTIAL CHARACTER.

Legume compreſſed, bent in. *Keel* bent down from the banner.

SPECIES.

1. Medicago arborea. *Tree Medick* or *Moon Trefoil.* *Lin. ſpec.* 1096. *ſyſt.* 692. *Reich.* 3. 573. *hort. cliff.* 376. *wpſ.* 230. *Kniph. cent.* 5. *n.* 55. *Fl. ruſſ. t.* 100. *Mill. fig. t.* 175.

Medica arborea. *Mill. dict. n.* 7.

Cytiſus. *Ceſalp. & Ded.*—Maranthæ. *Lob. ic.* 2. 46. *Matth. & Dalech. Park. parad.* 439.—cornutus. *Tabern. Ger.* 1124. 7. *emac.* 1305. 7. *Park. theat.* 1471. 1. *Boſc. cyſt.*—incanus, ſiliquis falcatis. *Baub. pin.* 389. *Raii hiſt.* 973.—ſil. incurva, folio candicante. *Baub. hiſt.* 7.

Lignum Rhodium, ſ. Cytiſus verus. *Honor. Belli epiſt.* 4. *ad Cluſ.*

Legumes creſcent-ſhaped, quite entire about the edge, ſtem arborescent.

[2. Medicago virginica. *Virginian Medick.*

Lin. ſpec. 1096. *ſyſt.* 693. *Reich.* 3. 573. *Gron. virg.* 86. *Pluk. mant.* 120. (Loto affinis).

Stem upright very much branched, flowers in terminating bundles.]

3. Medicago radiata. *Ray-podded Medick.*

Lin. ſpec. 1096. *ſyſt.* 693. *Reich.* 3. 573. *hort. cliff.* 377. *wpſ.* 230. *Gron. orient.* 231. *Knipb. cent.* 10. *n.* 58. *Gærtn. fruct.* 2. 348.

M. radiata. *Mill. dict. n.* 3.

M. annua, trifolii facie. *Tournef. inſt.* 412. *Boerh. lugdb.* 2. 35.—ſiliqua falcata ſtriata. *Mor. hiſt.* 2. 158. *ſ.* 2. *t.* 16. *f.* 3.

Trifolium ſil. falcata. *Baub. pin.* 330.—ſil. lunata. *Ger. emac.* 1207.

Medica lunata. *Baub. hiſt. Park. theat.* 1116. *Raii hiſt.* 966.

Lunaria radiata italorum. *Lob. ic.* 2. 38.

Legumes kidney-form toothed at the edge, leaves ternate.

4. Medicago circinata. *Kidney-podded Medick.*

Lin. ſpec. 1096. *ſyſt.* 693. *Reich.* 3. 574. *hort. cliff.* 377. *wpſ.* 230. *Murr. prodr.* 175. *Gærtn. fruct.* 2. 348. *Retz. obſ.* 1. 24.

M. hiſpanica. *Mill. dict. n.* 4.

M. vulnerariæ facie, hiſpanica. *Tournef. inſt.* 412. *Boerh. lugdb.* 2. 35.

Loto affinis ſiliquis hirſutis circinatis. *Bauh. pin.* 333.

Falcata foliis anthyllidis. *Rivin. tetr. t.* 87.

Auricula muris. *Camer. Baub. hiſt. Raii hiſt.* 922. *Park. theat.* 1094. 2.

β. M. cretica. *Mill. dict. n.* 6.

M. vulnerariæ facie, cretica. *Tournef. inſt.* 412.

Legumes kidney-form toothed at the edge, leaves pinnate.

5. Medicago obſcura. *Doubtful Medick.*

Retz. obſ. 1. 24. *n.* 87. *t.* 1.

M. italica. *Mill. dict. n.* 5?

M. polymorpha cochleata lenticularis. *Wilche hort. gryph.* 72?

M. lunata quædam minor. *Bauh. hiſt.*?

Trifolium ſiliqua falcata, alterum. *Baub. pin.* 330?

Raii hiſt. 966?

Peduncles racemed, legumes kidney-form quite entire, ſtem diffuſed rough-haired.

6. Medicago ſativa. *Cultivated Medick* or *Lucern.*

Lin. ſpec. 1096. *ſyſt.* 693. *Reich.* 3. 574. *hort. cliff.* 377. *Hudſ. angl.* 330. *Wither. arr. ed.* 3. 658. *Fl. ruſſ. t.* 48. *Hall. helv. n.* 382. *Crantz. auſtr.* 434. *Neck. gallob.* 317. *Pollich pal. n.* 712. *Krock. ſilef. n.* 1221. *Villars dauph.* 3. 401. *Pall. it.* 1. 370. *Kniph. cent.* 8. *n.* 67.

Medica ſativa. *Mill. dict. n.* 1. *Mor. hiſt.* 2. 150. *ſ.* 2. *t.* 16. *f.* 2.

M. legitima. *Cluſ. hiſt.* 2. 242. 2.

M. major erectior floribus purpuraſcentibus. *Baub. hiſt.* 2. 378. 1. *Raii hiſt.* 960.

Foenum burgondicum. *Lob. obſ.* 498. 1. *ic.* 2. 36. 2.—ſ. Medica legitima. *Park. theat.* 1114. 1.

Trifolium ſiliqua cornuta ſ. Medica. *Baub. pin.* 330.

T. burgundiacum. *Ger.* 1020. 2. (not the figure). *emac.* 1189. 2.

Peduncles racemed, legumes contorted, ſtem upright ſmooth.

7. Medicago falcata. *Yellow Medick.*

Lin. ſpec. 1096. *ſyſt.* 693. *Reich.* 3. 574. *fl. ſuec. n.* 677. *Hudſ. angl.* 330. *Wither. arr. ed.* 3. 658. *Relh. cant. n.* 549. *Fl. ruſſ. t.* 86. *Gærtn. fruct.* 2. 348. *Hall. helv. n.* 381. *Scop. carn. n.* 941. *Crantz. auſtr.* 434. *Neck. gallob.* 317. *Pollich pal. n.* 713. *Krock. ſilef. n.* 1222. *Villars dauph.* 3. 400. *Fl. dan. t.* 233. *Kniph. cent.* 11. *n.* 67.

Medica falcata. *Mill. dict. n.* 2. *Mor.* 2. 16. 1.

M. flavo flore. *Cluſ. hiſt.* 2. 243. 1. *Park. theat.* 1114. 3. *Raii hiſt.* 960. 2.

M. ſylveſtris. *Baub. hiſt.* 2. 378. 1. *Raii ſyn.* 333.

Falcata. *Riv. tetr. t.* 84.

Trifolium ſyl. luteum ſiliqua cornuta, vel Medica ſruteſcens. *Baub. pin.* 330.

T. lut. ſil. cornuta. *Ger. emac.* 1191. 8.

Lens major repens. *Tabern.* 502.

β. M. varia. *Fl. ruſſ. t.* 87.

M. hybrida. *Laurent in Young's Annals*, 15. 279.

Peduncles racemed, legumes creſcent-ſhaped, ſtem procumbent.

[8. Medicago lupulina. *Hop* or *Black Medick.*

Lin. ſpec. 1097. *ſyſt.* 693. *Reich.* 3. 575. *fl. ſuec. n.* 678. *hort. cliff.* 375. *Hudſ. angl.* 330. *Wither. arr. ed.* 3. 659. *Curt. lond.* 2. 57. 120. *Lightf. ſcot.* 412. *Relh. cant. n.* 550. *Hall. helv. n.* 380. *Scop. carn. n.* 940. *Crantz. auſtr.* 433.

Nick.

Neck. gallob. 317. *Gmel. sub.* 231. *Pollich pal. n.* 714. *Krock. sileſ. n.* 1223. *Villars dauph.* 3. 402. *Gron. virg.* 110. *Kniph. cent.* 11. *n.* 68. *Fl. dan. t.* 992.

Medica polycarpos fructu minore compreſſo ſcabro. *Raii ſyn.* 333.

M. cochleata minor polycarpos annua, capſula nigra minus hiſpida. *Mor. hiſt.* 2. 154. *ſ.* 2. *t.* 15. *f.* 14.

Trifolium pratenſe luteum. *Fuchſ. hiſt.* 819.—capitulo breviore. *Bauh. pin.* 328.

T. cochleatum polycarpon ſ. Medica racemoſa. *Park. theat.* 1114.

Melilotus minima. *Rivin. tetr. t.* 8.

M. minor. *Trag.* 593. *Raii hiſt.* 952. 8.

Melilotum minus. *Brunf.* 4.

Trifolium luteum lupulinum. *Ger. emac.* 1186. 5. *Raii hiſt.* 949. *ſyn.* 331.

T. montanum lupuli. *Park. theat.* 1105. 6.

T. pratenſe luteum mas, flore minore, ſemine multo. *Bauh. hiſt.* 2. 380. 2.

Spikes oval, legumes kidney-form one-ſeeded, ſtems procumbent.]

9. Medicago marina. *Sea Medick.*
Lin. ſpec. 1097. *ſyſt.* 693. *Reich.* 3. 575. *hort. cliff.* 378. *Gærtn. fruct.* 2. 350. *Sauv. monſp.* 186. *Gron. orient. n.* 230. *Pall. it.* 3. 590. *Kniph. cent.* 4. *n.* 46.

Medica marina. *Cluſ. hiſt.* 2. 243. *Lob. ic.* 38. *Tournef. inſt.* 410. *Boerh. lugdb.* 2. 35. *Park. theat.* 1114. 4. *Raii hiſt.* 965.

Cochleata fructu echinato incano. *Rivin. tetr. t.* 88. *f.* 15.

Trifolium cochleatum maritimum tomentoſum. *Bauh. pin.* 575.

T. cochl. marinum. *Ger.* 1029. 2. *emac.* 1114. 4.—ſ. Medica marina. *Bauh. hiſt.*

Peduncles racemed, legumes ſpiral ſpiny, ſtem procumbent tomentoſe.

[10. Medicago polymorpha. *Variable Medick.*
Lin. ſpec. 1097. *ſyſt.* 693. *Reich.* 3. 575. *mant.* 453. *hort. cliff.* 378. *upſ.* 230. *Hudſ. angl.* 331. *Scop. carn. n.* 942. *Krock. ſileſ. n.* 1224.

Trifolium cochleatum, fructu nigro hiſpido. *Bauh. pin.* 329.

α. M. orbicularis. *Flat-podded Medick.*
Sauv. monſp. 186. *Scop. n.* 942. 1. *Ger. prov.* 516. 5. *Villars dauph.* 3. 402. *Retz. obſ.* 1. 25.

Medicago orbiculata. *Gærtn. fruct.* 2. 349.

Medica orbiculata. *Bauh. hiſt.* 2. 384. *Raii hiſt.* 961. *Tourn. inſt.* 410. *Garid. aix.* 309.

M. major dicarpos, capſula compreſſa orbiculata nigra plana oris criſpis. *Mor. hiſt.* 2. 152. *ſ.* 2. *t.* 15. *f.* 1.

Cochlearia fructu orbiculato. *Riv. tetr. t.* 88. *f.* 1.

Trifolium cochleatum vel ſcutellatum fructu latiore, folio minuto obtuſo. *Bauh. pin.* 329. *prodr.* 142. 9.]

β. M. ſcutellata. *Snail Medick.*
Ger. prov. 516. 6. *Gærtn. fruct.* 2. 349. *Villars dauph.* 3. 403. *Mill. dict. n.* 2.

Medica ſcutellata. *Bauh. hiſt.* 2. 384. *Raii hiſt.* 961. *Tourn. inſt.* 410. *Garid. aix.* 309.

M. cochleata major dicarpos, capſula rotunda globoſa ſcutellata. *Mor. t.* 15. *f.* 4.

Trifolium cochleatum. *Ger.* 1029. *emac.* 1199. 1.—fructu latiore. *Bauh. pin.* 329.

γ. M. tornata. *Smooth-podded Medick.*
Ger. prov. 517. 7. *Mill. dict. n.* 3. *Retz. obſ.* 1. 26.

Medica tornata major & minor lenis. *Park. theat.* 1116. *Mor. t.* 15. *f.* 11.

[δ. M. turbinata. *Turban Medick.*
Sauv. monſp. 187. *Gouan. monſp.* 517. *Ger. prov.* 517. 7. *var.*

Medica magna turbinata. *Bauh. hiſt.* 2. 385. *Tourn. inſt.* 410. *Garid. aix.* 309.

M. dicarpos, fructus capſula turbinata rugoſa. *Mor.* 2. 153. *Knorr. del.* 1. *t.* S. 20.

Trifolium cochleatum turbinatum, fructu compreſſo. *Bauh. pin.* 329.]

ε. M. intexta. *Hedge-hog Medick.*
Ger. prov. 518. 11. *Gærtn. fruct.* 2. 350. *Mill. dict. n.* 4. *Retz. obſ.* 1. 26.

Medica cochleata ſpinoſa major dicarpos capſula ſ. ſpinis longioribus ſurſum & deorſum tendentibus. *Mor.* 153. *t.* 15. *f.* 8, 9, 7.

M. coch. ſpin. echinis magnis utrinque turbinatis cum ſpinulis reflexis. *Raii hiſt.* 962.—& magna echinata. *Ej.* 963.

M. majoris Baticæ ſpecies prima, ſpinulis intortis. *Ger. emac.* 1200. *n.* 2.

Cochleata fructu echinato maximo. *Riv. tetr. t.* 88. *f.* 9.

[ζ. M. muricata. *Prickly Medick.*
Ger. prov. 517. 8. *Villars dauph.* 3. 403. *Wither. arr. ed.* 3. 661.

Medica cochleata dicarpos capſula ſpinoſa rotunda minore. *Mor.* 153. *t.* 15. *f.* 11.

M. ſpinoſa dicarpos, fructu ovali, ſpinulis brevioribus & rigidioribus. *Raii hiſt.* 963. 17.

Trifolium cochleatum mediolis ſpinoſis. *Raii ſyn.* 333.

η. M. arabica. *Heart Medick.*
Hudſ. angl. 331. *Wither. arr. ed.* 3. 660. *Curt. lond.* 3. 47. 176. *Relh. cant. n.* 551. *Fl. ruſſ. t.* 76. *Retz. obſ.* 1. 25.

M. maculata. *Silth. oxon. n.* 649.

Medica arabica. *Cauer. hort.* 97. *t.* 27. *Park. theat.* 1115. 6.

M. cochl. minor polycarpos annua, capſ. majore alba, fol. cordato macula fuſca. *Mor.* 154. *t.* 15. *f.* 17.

M. echinata glabra cum maculis nigricantibus. *Bauh. hiſt. Raii hiſt.* 963.

Trifolium cochl. fol. cordato maculato. *Bauh. pin.* 329. *Raii ſyn.* 333. 1.

T. cordatum. *Ger.* 1021. 4. *emac.* 1190. 4.

M. hybrida. *Hudſ. angl.* 1.

ϑ. coronata. *Crowned Medick.*
Ger. prov. 517. 9. *Gouan.* 204. *Scop. carn. var.* 5. *Sauv. monſp.* 187. *Gærtn. fruct.* 2. 349. *Retz. obſ.* 1. 26.

Medica cochl. polycarpos annua, capſ. minima coronata. *Mor.* 155. *t.* 15. *f.* 21.

M. coronata Cherleri parva. *Bauh. hiſt.* 2. 386.

M. polyc. fol. obtuſo crenato. *Tourn. inſt.* 411. *Garid. aix.* 309.

Cochleata fructu echinato minore. *Riv. tetr. t.* 88. *f.* 14 *& t.* 89. *f.* 2.

Trifolium fol. obtuſo, folliculis cordatis. *Bauh. pin.* 329. *prodr.* 141. 13. *Raii hiſt.* 965.

ι. M. ciliaris. *Fringed Medick.*
Ger. prov. 519. 14. *Gouan. monſp.* 204. *Sauv. monſp.* 186. *Krock. ſileſ. n.* 1225.

Medica ciliaris Guilandini. *Raii hiſt.* 965.

M. annua, fructu ciliari. *Tourn. inſt.* 410.

M. cochlearis polycarpos, capſ. ſpinoſa minore, perennis, ciliaris, &c. *Mor.* 154. *t.* 16.

Trifolium fructu cochleato ciliari. *Magn. monſp.* 269.

κ. M. hirſuta. *Hairy Medick.*
Ger. prov. 518. 13. *Neck. gallob.* 318. *Scop. carn.* 6. *Hall. helv. n.* 383. β. *Sauv. monſp.* 186. *Villars dauph.* 3. 403. *Retz. obſ.* 2. 23.

Medica echinata hirſuta. *Bauh. hiſt.* 2. 386. *Raii hiſt.* 965. *Tourn. inſt.* 410. *Garid. aix.* 309.

Tritolium echinatum arvenſe. *Bauh. pin.* 329.

Tribulus terreſtris minor repens. *Dalech.* 514.

λ. M. rigidula. *Tourn.-podded Medick.*
Ger. prov. 518. 12. *Dalib. par.* 231. *Retz. obſ.* 2. 23.

Medica hirſuta, echinis rigidioribus. *Bauh. hiſt.* 2. 385. *Raii hiſt.* 964. *Tourn. inſt.* 410. *Garid. aix.* 309. *Vaill. par. t.* 33. *f.* 7.

Trifolium fructu compreſſo ſpinis horrido. *Bauh. pin.* 329.

μ. M. minima. *Leaſt Medick.*
Gouan. 204. *Fl. dan. t.* 211. *Schreb ſpicil.* 27. *Crantz. auſtr.* 434. *n.* 4. *Pollich. pal. n.* 715. *Guett. ſtamp.* 249. *Dalib. par.* 230. *Hall. helv. n.* 383. *Villars dauph.* 3. 403. *Wither. arr. ed.* 3. 660.

Medica echinata minima. *Bauh. hiſt.* 2. 386. *Raii ſyn.*

fm. 333. *hiſt.* 965.—parva recta. *Park. theat.* 1115. 7. *Mor.* 154. *t.* 15. *f.* 15.

Trifolium echinatum arvenſe fructu minore. *Baub. pin.* 330.

Cochleata echinata minima. *Riv. tetr. t.* 88. *crd.* 4. *f.* 4.

Tribulus terreſtris minor rectus. *Dalech.* 515.

γ. M. nigra. *Black-podded Medick.*

Ger. prov. 518. 10. *Krock. ſilef. n.* 1226. *Retz. obſ.* 1. 25.

M. cochleata polycarpos annua, capſ. nigra hiſpidiore. *Mor.* 154. *t.* 15. *f.* 19.]

δ. M. laciniata. *Cut-leaved Medick.*

Grin. eriant. 95. *Mill. dict. n.* 5. *Sauv. monſp.* 187. *Genan. monſp.* 400.

M. ſyriaca. *Riv. tetr.* 205.

M. dicarpos laciniata foliis & fructu ſpinoſis. *Pluk. alm.* 245.

Trifolium echinato capite. *Dodart. mem.* 1. 123.

Legumes ſpiral, ſtipules toothed, ſtem diffuſed.

[11. Medicago proſtrata. *Proſtrate Medick.*

Lin. ſyſt. 694. *ſuppl.* 340. *Jacq. hort.* 1. 39. *t.* 89. *Til. piſ.* 110. (Medica.)

Legumes ſpiral unarmed, leaves ternate wedge-ſhaped toothed at the top, ſtipules briſtle-ſhaped quite entire, ſtem diffuſed.

DESCRIPTIONS, *&c.*

Theſe are herbs, except the firſt and ſecond, which are ſhrubby or fruteſcent. Leaves commonly ternate. Stipules ſmall, faſtened to the bottom of the petiole. Peduncles axillary and terminating, one-flowered, or many-flowered in ſpikes or glomerate *.

Miller has followed Tournefort in dividing this natural genus into two, from the fruit, which in his *Medica* is ſickle-ſhaped; in his *Medicago* ſpiral, ſcrew-ſhaped, or like the ſhell of a ſnail. The ſhape of the fruit being ſo variable in this genus, it is an improper baſis of a generic diſtinction.]

1. Tree Medick, named Moon Trefoil from the ſhape of the pods, and its trifoliate leaves, or Horned Tree Trefoil, as it is called by Parkinſon, is a ſhrub growing to the height of four or five to eight or ten feet, and being covered with a gray bark, the whole has a hoary appearance. The ſtem divides into many branches, with ternate leaves at each joint, on foot-ſtalks about an inch in length; there being ſeveral of theſe leaves together, the whole ſhrub is cloſely covered with them; and it is never deſtitute of leaves: the component leaflets are ſmall, lanceolate (or wedge-ſhaped, emarginate,) and hoary on their under ſide. The flowers are produced on peduncles from the ſide of the branches, four or five together, and are of a bright yellow. The pods contain three or four ſmall ſeeds.

It flowers great part of the year, and when ſheltered is ſeldom deſtitute of flowers. In the open air it begins to flower in april, and continues till december. Thoſe flowers which appear early in ſummer will have the ſeeds ripe in auguſt, or the beginning of ſeptember, and the others will ripen in ſucceſſion.

It grows in great plenty in Abruzzo, and many parts of the kingdom of Naples, where the goats feed upon it; and with their milk abundance of cheeſe is made there. It alſo abounds in ſeveral of the iſlands in the Archipelago, where the Turks uſe the wood to make handles for their ſabres; and the Caloyers or Greek monks form their beads of it. In old ſhrubs the heart is of a dark colour, and hard like ebony.

This ſhrub bids the faireſt of any to be the *Cytiſus* of Virgil, Columella and the other ancient writers on huſbandry; and being celebrated by them as an excellent fodder, has been recommended for cultivation here. But however uſeful it may be in Candia, Rhodes, Sicily, Abruzzo, and other dry warm countries, yet it will never thrive in England, (where we have alſo many plants of this leguminous tribe far more ſucculent than this) ſo as to be of any real advantage; for in ſevere froſt it is very ſubject to be deſtroyed, or at leaſt ſo much damaged, as not to recover its former verdure before the middle or end of may: (and even after a mild winter it will generally appear injured by our cold ſpring winds even at that ſeaſon; ſo that it cannot be of any uſe here for early ſpring fodder.) Beſides, the ſhoots will not bear cutting above once in a ſummer, and then will not be of any conſiderable length: and the ſtems growing very woody, the cutting of it will be very troubleſome. Upon the whole therefore it is not worth the trial, eſpecially as we have ſo many plants preferable to it: though in hot, dry, rocky countries, where few other plants will thrive, it may be cultivated to great advantage. But however unfit Tree Medick may be for uſe as fodder in England, yet for the beauty of its hoary leaves, abiding all the year, together with its long continuance in flower, it deſerves a place in every good garden and plantation, with ſhrubs of the ſame growth.

[Maranta, who has deſcribed this ſhrub, found it near Naples; Honorius Bellus, in Rhodes and the iſlands adjacent; Ray about Baie abundantly.—Gerarde, who calls it Horned Cytiſus, or Horned Shrub Trefoil, cultivated it in 1596.

2. The corolla of this is red and white variegated; the legumes have only one ſeed.

Native of Virginia *.]

3. This is an annual plant, having ſeveral ſlender branching ſtalks a foot and half long, and ſpreading on the ground. Leaflets ovate-lanceolate, entire. The flowers are produced ſingly upon ſlender peduncles from the ſide of the branches; they are ſmall and yellow. [Legumes membranaceous, ſubdiaphanous, pale, nerved with capillary radiant veſſels, ſtarted and of a leafy ſubſtance, obſcurely ſwelling at the ſeeds, ſetaceous-toothletted at each future, many-celled, not opening. Seeds four to ſix, ovate, ſtarted a little, tuberculate-wrinkled, ruſeſcent *.]

It grows naturally in Italy, (and the Levant. Ray found it about Meſſina in Sicily.) It flowers in june and july, and the ſeeds ripen in autumn.

[Cultivated by Miller in 1759.

4. This whole plant is pubeſcent. Leaves wedge-form, entire, below ſimple, above pinnate; leaflets inconſtant in number, often deficient on one of the ſides, and on the other ſmaller, and they alternate with an odd leaflet, ſometimes ſeſſile, ſometimes petioled: the ſurface of the leaves projects at the baſe of the hairs, ſo as to appear tubercled. Stipules none. Flowers at the ends of the branches, commonly by threes, very ſeldom only two together. Legume thicker, more round than in the preceding, and ſcarcely toothed at the edge *: in the middle ſlightly convex, but towards the circumference attenuated and membranaceous, ſmooth, not netted, two-celled, valveleſs. Seeds two, kidney-form, ruſeſcent *. Both Gærtner and Retzius remark, that the legumes are ſometimes not at all toothed at the edge.

Native of Spain and Italy. (Ray found it in Sicily.) Introduced in 1777, by Abbé Nolin *.

If this be Medica hiſpanica of Miller, as it probably is, then he cultivated it many years earlier. He thus deſcribes it.]

Root annual. Stalks a foot and half long, trailing. Leave pinnate, compoſed of two pairs of ſmall leaflets, terminated by one large ovate-lanceolate leaflet; they are a little hoary, and placed alternately at the joints. Flowers on long ſlender peduncles, each ſuſtaining four or five gold-coloured flowers at the top; ſucceeded by compreſſed pods, not half ſo large as thoſe of the preceding, but having hairy indentures like them.

β. Medica Cretica grows naturally in the Archipelago. This is an annual plant, from the roots of which come out ſeveral oblong leaves about two inches and a half long, narrow at their baſe, but broad towards the top, where they are rounded; theſe ſpread on the ground, and from among them come out the ſtalks, which are ſlender, about a foot long, branching out into ſmaller, having pinnate hoary leaves: thoſe on the lower part of the ſtalk have two pairs of oval leaflets, terminated by an odd one: the upper leaves

* Linn. * Gærtner. * Murray.
* Gærtner. * Hort. kew.

* Juſſieu.

are ternate. Flowers terminating, ſmall, yellow; ſucceeded by compreſſed pods, acutely toothed on the edge, and containing three or four ſeeds.

[Retzius is of opinion that this alſo is of the ſame ſpecies with the hiſpanica of Miller and circinata of Linnæus, or a variety of it.

5. Root annual. Stems decumbent, long, four-cornered. Leaves ternate: leaflets obovate, finely ſerrate, ſeldom hairy: petioles long, channelled above. Stipules ciliate-toothed. Peduncles axillary, the length of the leaf, many-flowered, elongated after flowering. Flowers like thoſe of M. polymorpha, yellow with the banner paler. Legumes in a ſhort raceme, compreſſed, keeled, veined, two-ſeeded. Seeds oblong-kidney-form, ſmooth. The plant in flower reſembles M. polymorpha, but the legumes are very different. Theſe agree very nearly in form with thoſe of M. circinata, but are only half the ſize, ſtiffer, more bent in, ſo that the end meets the pod again, which is therefore in a manner orbicular. The legume not being ſpiral, this is not a variety of M. polymorpha. It is probably a native of Germany[a].

Retzius ſuſpects that this may be the Medica italica of Miller, which he ſays] grows naturally on the ſea coaſt in ſeveral parts of Italy. It is an annual plant, with proſtrate herbaceous ſtalks about a foot long. Leaves ternate: leaflets wedge-ſhaped, towards the top ſerrate. The flowers are produced on ſlender peduncles ariſing from the joints of the ſtalk; they are about an inch long, and ſuſtain five or ſix pale yellow flowers; which are ſucceeded by ſmall thick pods, with entire borders, containing three or four ſmall ſeeds.

6. [Cultivated Medick, or Lucern has a perennial root, with annual ſtalks, ſmooth and ſtriated, from a foot and half to two feet, and even almoſt three feet in height, in good ground: branched alternately. Stipules lanceolate, awned. Leaves ternate: leaflets elliptic, entire at the baſe, but finely ſerrate towards the end; the midrib is lengthened into a point; they are ſlightly downy on their upper ſurface, ſmooth and ſtreaked with veins on the under; all on pedicels, the middle one longeſt.] The leaves are placed alternately: the leaflets are deep green, an inch and half long, and half an inch broad. [Peduncles axillary, longer than the leaves. Flowers in thick ſpikes,] from two to three inches in length, on naked peduncles, two inches long. [Each flower is on a ſhort pedicel, with an awl-ſhaped bracte at the baſe. Calyx nearly ſmooth, with five awl-ſhaped teeth, almoſt equal. Corolla purple. Legumes with two or three diſtant turns[b].]

The common colour of the flower is a fine violet purple, but Mr. Miller mentions the following varieties to have accidentally ariſen from ſeeds; viz. with pale blue, and with variegated flowers. Theſe, however, he ſays, are never ſo ſtrong as thoſe with purple flowers, and therefore are to be avoided by cultivators. [In the Flora Ruſtica the corolla, by ſome miſtake, was coloured of a red purple. Villars affirms, that the flowers are white, ſeldom greeniſh: and Krocker, that the keel is ſometimes yellow.]

It flowers in june, and the ſeeds ripen in ſeptember.

[It is ſet down as a native of many parts of Europe, even of England, where it is probably not indigenous. Linnæus aſſigns it to Spain and France. Haller does not regard it as a native of Switzerland. Pollich thinks it is indigenous of the Palatinate, becauſe it is found there, in places where it is never cultivated. Krocker ſuppoſes it to have become a denizon of Sileſia, where it is now undoubtedly found in places that have not been ſown with it. Villars ſpeaks of it as certainly wild in Dauphiné. Ray obſerved it growing ſpontaneouſly about Montpellier, and cultivated about Avignon and Geneva.

It may poſſibly have been originally a native of Europe, continuing to be diſregarded, till it was imported into Greece from the Eaſt, after Darius had diſcovered it in Media, whence its name. It is ſaid to be the principal green fodder for horſes in Perſia to this day. It has been cultivated time immemorial in the ſouthern countries of Europe; but it has not even yet gained a firm eſtabliſhment in Great Britain;] ſo as to be cultivated in conſiderable quantities, though it is evident that it will ſucceed here as well as in France or Switzerland, and that it reſiſts the ſevereſt cold of our climate. As a proof of this, Miller mentions, that ſeeds ſcattered accidentally in autumn have come up, and the plants having endured the cold of a ſevere winter, have been very ſtrong the following ſeaſon. This however does not now want proof.

About the year 1650, continues Mr. Miller, (alluding I ſuppoſe to Hartlib's queries) the ſeeds of Lucern were brought over from France, and ſown here; but whether for want of ſkill in the culture, or from reluctance to depart from the old beaten track, it was entirely neglected for many years, ſo as to be almoſt forgotten.

[In Gerarde's time, we had it only in our gardens, where it laſteth long, as he ſays, with great increaſe. Parkinſon, in 1640, informs us, that it was ſown in Spain, France, and the Low Countries, but does not hint at our having it then in England. Hartlib, in 1649 to 1651, took ſome pains to make enquiries about it in France. It is barely mentioned by Blith, in 1653, as being in great credit among the French. Woolridge, in 1668, ſays that it is commended for an excellent fodder, but does not pretend that it was then cultivated here. It ſeems to have been very little known in the time of Mr. Liſle, who is ſaid to have continued his enquiries and experiments to the time of his death in 1722. Mortimer ſpeaks of it rather by hearſay, than from any actual knowledge of it. Tull recommends its culture in his horſe-hoeing huſbandry. But Mr. Miller appears to have been the firſt who brought it into that degree of cultivation in which we find it at preſent. The attention of the public was called to it by the Rev. Walter Harte, about 1757; and by Mr. Rocque about the year 1765. The latter ſays, that a farmer in Kent had then fourteen acres of it; but that one and twenty years before there were not two hundred pounds weight of the ſeed in London. It was alſo about that time encouraged by premiums from the Society of Arts, Manufactures and Commerce[c]. My father cultivated it with ſucceſs at Streatham in Surry, during many years from 1752. It has never been my fortune to be ſituated in a ſoil congenial to it, but I have conſtantly kept it in my eye, and am firmly convinced that it is a moſt valuable green fodder, particularly for horſes, on account of its quality, quantity and earlineſs. I have ſeen it cut ſeventeen inches high on the *ninth of april*.

Lucern has been greatly celebrated for increaſing the milk of kine: but Haller, who certainly knew it well, aſſerts that cattle are apt to grow tired of it, and that they are ſubject to be blown by it. I have never heard that we have found either of theſe inconveniences in England.

With reſpect to the culture of Medica or Lucern in the ſouthern parts of Europe, the Greeks ſpeak of it from Theophraſtus to Dioſcorides, the Latins from Virgil to Palladius. Even in Italy however it ſeems to have been loſt from the time of the irruption of the barbarians, and to the moderns for ſome time, ſince Matthioli owns, in the year 1558, that he had never ſeen it growing. At the ſame time he ſays it is related, that it is abundantly cultivated in Spain, for kine and ſheep, and that it is known there by the Arabic name *Alfalfa*. In that country it is probable that it was never quite loſt. Caſtore Durante, in 1585, informs us, that it then began to be recovered to Italy, and to be ſown for the food both of horſes and cattle. In Henry the Fourth's time it was common in the South of France. Our Barnaby Googe alſo, in 1578, ſays, (from Hereſbach) that no better food can be deviſed for cattle; and that among all ſorts of fodder, that is accounted for the chiefeſt and beſt, which the people of old time, and the Italians at preſent, call *Medica*.

Mr. Harte however informs us that the Medica at firſt introduced about Rome, was not the true Lucern.

[a] Retzius. [b] Woodward, Mſ. Fl. ruſſ. [c] Fl. ruſſ. & Harte, Eſſay 2.

but the *Medicago* polymorpha, or Small-Medick; as he was affured by curious botanifts well fkilled in agriculture; and farther fays he doubts not but that this fpecies alfo affords very agreeable food; for a horfe of his breaking into his garden, devoured twenty plants of it that ftood in different beds, in a few minutes*. That however is an annual plant.

The name Lucern, Lucerne or Luzerne, by which this Medick is now generally known among us, is modern. Old Engliſh writers call it *Medick-fodder*, *Burgundy Trefoil*, *Snail Trefoil of Burgundy*, or *Snail Clover*. Hartlib and Blith firſt adopted the French name *La Lucerne*. The Germans and the other northern nations have alſo adopted the name from the French, who alſo call it *Treffe or foin de Bourgogne*, and *Grand Trefle*. The Italians name it *Medica*, *Lucerna*, and *Erba Spagna*. The Spaniards *Alfalfa*, *Mielga*, *Medica*. The Portugueze, *Lucerna and Medicagem dos paſſos*. In Perſian it is *Gaulcha*.

7. Root perennial. Stems round, ſmooth, ſlightly ſtriated, procumbent but aſcending or bending upwards towards the end, branching, two, three and ſometimes four feet in length. Leaves alternate, on ſhort petioles: leaflets lanceolate, oblong-ovate, or wedge-ſhaped, ſmooth, truncate or retuſe, toothed towards the top, entire at the baſe, the midrib lengthened into a projecting point; the two lateral ones almoſt ſeſſile, the middle one on a longer petiolet. Stipules lanceolate, acuminate, entire, or ſometimes with one or two teeth on the outer edge. Peduncles axillary, ſomewhat angular, ſtanding much above the leaf. Flowers in ſhort looſiſh racemes, each on a pedicel, with an awl-ſhaped bractæ. Calyx ſlightly pubeſcent, with equal awl-ſhaped teeth. Corolla commonly yellow. Legumes ſickle-ſhaped, not making ſeveral turns, as in cultivated Lucern, linear, ſix or ſeven lines long, and ſcarcely two broad, ſmooth or ſlightly pubeſcent, one-celled, two-valved, black when ripe. Seeds five or ſix, compreſſed, ſmooth, yellow, fixed to the interior future†. According to Gærtner there are only two or three, of an oblong kidney ſhape; and the pod itſelf is creſcent-ſickle-ſhaped or ſubſpiral.]

Miller remarks, that the ſtalks of this are ſmaller, and never riſe ſo high, as thoſe of the true Lucern, and that they are generally proſtrate; that the leaves are not half ſo broad; that the flowers are produced in ſhort roundiſh ſpikes, and are of a ſaffron colour.

Yellow Medick is common in the South of Europe, by way ſides and in dry paſtures. With us it is alſo common, in the ſandy grounds near Bury in Suffolk. Mr. Doody remarked it between Watford and Bushy. Mr. Roſe and Mr. Woodward about Norwich plentifully; Quey, Bourn-bridge, Wilbraham and Linton in Cambridgeſhire.

Linnæus has recommended it for cultivation; but Haller objected to the hardneſs of the ſtalks, and its proſtrate manner of growth. In cultivation however the ſtalks may prove more ſucculent, and in this ſtate they will ſupport each other. A ſingle plant of purple Lucern will hardly ſupport itſelf, and the ſtalks become very ſticky at bottom when it is far advanced. Upon the whole, this is probably not ſuperior to the purple Medick or Lucern. The roots ſtrike very deep, and are with difficulty eradicated.

β. Yellow Medick varies much in the colour of its flowers, which are ſometimes whitiſh, quite white, or greeniſh, as well as of different ſhades of yellow. But it is remarkable for a variety, or perhaps mule, with flowers of colours ſo different as blue and yellow on the ſame ſtalk. Caſpar Bauhin ſays, that it is found in the South of France with whitiſh yellow, green, blue, purple, black, and variegated flowers, but he does not affirm that theſe different colours occur on the ſame individual. Mr. Ray obſerved it between Norwich and Lynn, it has alſo been found about Bury, and is ſaid to be common near Norwich and Yarmouth. Ray doubted whether it might not be the true Lucern in a wild ſtate. The ſtipules in plants of the variegated variety which have come under my obſervation were much narrower than in the Yellow Medick.

If this difference ſhould prove to be permanent, it might induce us to ſuſpect that they are diſtinct ſpecies*.

8. Root annual or biennial, with few fibres, and penetrating deep into the earth. Stems trailing unleſs ſupported, numerous, about a foot long, ſomewhat angular, ſlightly hairy, branched. Leaves on very ſhort petioles: leaflets obcordate, obovate, or wedge-ſhaped, bluntiſhly toothed towards the top, the midrib lengthened out into a ſhort broad point, ſoft, pubeſcent particularly on the under ſide. Stipules ovate-lanceolate, acuminate, notched with little teeth. Flowers ſmall, yellow, from thirty to forty and upwards in a head, which is firſt roundiſh, afterwards oval. Calyx ſlightly downy, nearly as long as the corolla, with five awl-ſhaped teeth, nearly equal, but the two upper ones rather ſhorter, and more remote. Legume ſtriated and wrinkled, ſomewhat liſpid with rigid hairs, turning black when ripe. Seed ovate, ſmooth, yellowiſh†.

This plant is often confounded with ſome of the Trefoils, from which however it is ſo diſtinct in the fruit, as to be rightly placed in a different genus. The leaves and ſtalks alſo of this are frequently more hairy than thoſe Trefoils for which it may be miſtaken, except *ſubterraneum*, which is uſually ſmaller: in general, the more barren the ſoil, the more downy this plant appears; by culture it becomes much larger and ſmoother.

The flowers of M. lupulina are ſmaller and more cloſely compacted than thoſe of *Trifolium agrarium* and *procumbens*, both of which it much reſembles; nor are the ſpikes ſo exactly round as in them, but of an oval or oblong ſhape, eſpecially when ſomewhat advanced: when the ſeeds are ripe, this is diſtinguiſhed at firſt ſight by its black ſeed-veſſels*. From this circumſtance it has obtained the names of *Black-ſeed* and *Black Nonneſuch* among ſome cultivators: but it has commonly the name of *Trefoil*, when cultivated either alone or with Ray-graſs for ſheep. The old writers call it *Melilot Trefoil*. Mr. Huſſon names it *Black Medick*, and Mr. Curtis, *Hop Medick*.

It grows naturally on dry banks and hilly paſtures, chiefly in a ſandy or dry ſoil, is common in New England, and flowers in june and july.

9. The legume of this is cylindric-globular and ſpiral or like a ſnail's ſhell, with about four turns of the ſcrew, which are contiguous, and cinereous tomentoſe; the outer future is convex, defended on each ſide by very ſhort pungent diſtant ſpinules. Seeds four or five, kidney-form, yellow*.

Native of the ſhores of the Mediterranean ſea, as about Marſeilles and Tripoli. Ray obſerved it abundantly on the ſandy coaſts.]

According to Miller, it is a perennial plant, with trailing woolly branches about a foot long, divided into many ſmall branches. Leaves ſmall, downy, on ſhort footſtalks, at each joint. Flowers from the ſide and at the ends of the branches, in ſmall cluſters, of a bright yellow colour. They appear in june and july, and the ſeeds ripen in ſeptember.

10. [Root annual, oblong, branched. Stems more or leſs procumbent, ſomewhat angular, hoary, from a hand to a foot in length, ternate: leaflets roundiſh, retuſe, ſubterrate, glaucous-green, petioled; the upper ones ſmaller, ſoft, tomentoſe. Stipules entire or toothed, ſeſſile, in pairs at the baſe of the petioles. Peduncles axillary, much longer than the leaves, round, pubeſcent, forming a ſpike: flowers very ſmall, commonly yellow. Calyx ſmaller than the corolla, hirſute, green-hoary. Legumes ſhell-ſnailed, ſmall, one-celled, of different ſhades of brown or blackiſh when ripe, ciliate, aculeate or naked. Seeds ovate, ſmooth, convex on one ſide, flat on the other, lemon-coloured*.

Linnæus juſtly names this ſpecies *polymorpha*; and remarks, that like the Dog among the animals, this

* Hartz. 2. p. 8. † Woodw. Mſ. Fl. raſſ. Gærtn.

* Fl. raſſ. * Curtis, Woodw. Mſ. Linn. With.
* Curtis. * Gærtner. * Krocker.

plant

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plant produces numerous varieties, though not in the ſame country. Some of theſe varieties are erected into ſpecies by Miller, Gerard, Gærtner and others.

α. Stems diffuſed, ſmooth. Leaflets ſmall, triangular or wedge-ſhaped, very blunt, ſomewhat villoſe, the upper ones ſharply toothletted. Petioles longer than the leaves. Stipules creſted, with long linear-ſetaceous ſegments, ſometimes toothed; the teeth ending in a briſtle. Peduncles almoſt the ſame length with the petioles, awned or ending in a long thread, one or ſometimes two-flowered[1]. Legumes ſolitary, orbicular, flatted, ſmooth, half an inch in diameter; with four or five turns of the ſcrew, which are leafy, horizontal, marked with radiant diſtant ſtreaks, toothleſs, many-celled, not opening. Seeds five to nine, roundiſh, turgidly lens-ſhaped, rufeſcent[2].

Native of the South of Europe. Ray obſerved it in Sicily.

β. Stems trailing, ſtriated, villoſe. Leaves on long petioles. Leaflets oval, very finely villoſe underneath, ſharply and unequally toothed. Stipules lanceolate, with fewer toothlets. Peduncles longer than the petioles, villoſe, awned, many-flowered. Flowers terminating, ſeſſile, pale yellow[3]. Legumes ſolitary or two together, ſometimes three, ſubglobular, making five, ſix or ſeven ſpiral turns, which are leafy-compreſſed, obliquely ſtriated, concave upwards, toothleſs or ſmooth, many-celled, not opening, dark brown when ripe. Seeds five or ſix, largiſh, kidney-form, deeply emarginate next the navel, of an orange-ruſeſcent colour[4].

Native of the South of France and Italy. Ray obſerved it near Leghorn.]

γ. This has trailing branches, and yellow flowers like the preceding, but the fruit is much longer and cloſer twiſted, reſembling a barrel or wine pipe, being leſs at each end than in the middle.

[According to Linnæus this has ſeveral ſubcylindric fruits, (two to ſix) with the turns of the ſcrew unarmed or ſmooth and flat, and toothed ſtipules.

Native of the South of France.

δ. According to Gerard, this is a variety of the preceding, with the legumes longer and leſs blunt. They are unarmed or ſmooth, as in the preceding, and ſubcylindrical, with the extremities flatted[5].

Native of the South of France.]

ε. The fruit of this is much larger than in the other varieties, and cloſely armed with long ſpines like a hedgehog, whence it had the Engliſh name; theſe ſpines point every way, ſo that it is very diſagreeable to handle.

[Stipules toothed. Legumes two or four, ovate or ovate-globular, with five compreſſed ſpires, concealed by awl-ſhaped, pungent, recurved prickles. Seeds five or more, largiſh, kidney-form, very dark cheſtnut-coloured, ſomewhat ſhining[6].

Native of the South of Europe.

ζ. Stems ſmooth, or with very few hairs, red. Leaves on very long petioles, glaucous and tomentoſe with a ſhort and ſcarcely conſpicuous nap beneath. Flowers axillary two or three together, ſmall, yellow. The leaves that firſt come out are heart-ſhaped; thoſe on the ſtem broad and blunt, beautifully ſtriated. Legumes oval, with ſhort, ſtiff ſpines, hard and larger than peas, becoming blackiſh when ripe. Seeds kidney-form, yellow[7]. According to Villars, the legumes make two turns and a half, each armed with a row of ſhort ſpines on both edges; they are ſmooth, though the leaves are villoſe.

Native of the South of France. Ray found it near Meſſina in Sicily, and at Orford in Suffolk, on the ſea bank, if that be the ſame, the ſpines on the legume being deſcribed as rather tender than ſtiff.

η. Stems numerous, a foot in length, more or leſs according to the ſoil, procumbent, four-cornered, with long whitiſh hairs below, but ſmooth above, ſtriated, purpliſh, branched. Petioles cylindrical, channelled, hairy in like manner. Leaflets obcordate, ſomewhat ribbed, ſmooth, obſcurely or partly ſerrate, marked above in the middle with a blackiſh brown or blood-coloured heart-ſhaped or ſagittate ſpot, varying in brightneſs, and according to Linnæus diſappearing after the plant has flowered. Stipules ſemi-ſagittate, acuminate, ſerrate. Flowers from two to four or five together, on axillary, round, hairy peduncles ſhorter than the leaves; when many, two or three are abortive: at the baſe of each pedunele a very ſmall braſte; and between the flowers a briſtle. Corolla yellow: banner emarginate, much larger than the other petals. Legume roundiſh-cylindrical, cut off at each end; the ſpires flat, with widely diverging prickles, hooked at the end[8].

This Medick is called by our Gerarde *Heart Trefoil*; others call it *Heart Clover* or *Clover*, corrupted by the vulgar into Heart Liver. Hudſon and Curtis name it *Heart Medick*; and Sibthorp, perhaps more ſignificantly, *Spotted Medick*.

It is common on banks and the borders of fields, in dry ſandy paſtures, and eſpecially near the ſea; flowering in may and june. It varies much in ſize.

In Hudſon's *hybrida* the peduncles are two-flowered or thereabouts. The lower legumes ſpiral, with five turns and diverging ſpines; the ſeeds perfect: the upper ones linear, half an inch long, bowed or curved inwards, ſlightly torulooſe or protuberant; ſeeds imperfect.

Found near Charlton in Kent. Mr. Curtis affirms that there is no Heart Medick near London but the common one.

ϑ. Leaves elliptic. Stipules ſcarcely toothed. Flowers in racemes, very ſmall[9]. Legumes ſubconical, with four, ſeparate, compreſſed turns, the outer ſuture marked with a raiſed line, and armed with ſhort ſubalternate ſpinules turning obliquely upwards and downwards. Seeds four or five, kidney-form, yellowiſh[10]. This variety, according to Gerard, is known by having ſeveral ſmaller legumes to each pedunele, with ſhorter almoſt erect ſpines, as Gouan remarks.

Native of the South of Europe.

ι. Stipules ciliate. Legumes ſeveral, oval, the ſpires or turns having ſtraighiſh villoſe ſpines[11].

Native of the South of Europe.

κ. Leaves ovate-lanceolate. Stipules entire. Peduncles many-flowered, forming a raceme. Legumes roundiſh, with ſix turns, ſpines hooked[12].—South of Europe.

λ. Peduncles many-flowered. Legumes compreſſed, with very ſtiff prickles.

Native of France.

μ. Root ſtriking deep, white, the ſize of ſmall twine, tough, with a few rigid fibres. Whole plant, except the flowers, covered with a white ſilky down. Stems ſomewhat angular, numerous, procumbent, often tinged with purple. Leaves petioled; outer leaflets ſeſſile, the middle one petioluled, oblong wedge-ſhaped, entire at the baſe, ſerrated towards the top, marked with ſtrong nerves, the terminations of which form the ſerratures; the end emarginate with an intermediate projecting point. Stipules lanceolate, entire, nerved. Peduncles as long as the leaves, bearing from one to ſix flowers, in a looſe head, on ſhort unequal pedicels. Teeth of the calyx awl-ſhaped, equal. Corolla ſmall, pale yellow. Legumes ſcarcely larger than the ſeeds of Ornbus; the ſpires covered with rigid hooked prickles[13].

Native of ſeveral parts of Europe. In England on ſandy ſoils, but rare. Found by Mr. Woodward at Narborough near Swaffham in Norfolk.

ν. Peduncles few-flowered. Legumes black, ſpiral, with hooked prickles the length of the legumes.

Native of the South of France[14].]

ξ. Stems trailing. Leaflets wedge-ſhaped, ſharply toothed, with three acute points at the top. Flowers pale yellow. Fruit ſmall, with many weak ſpines.

[The leaves, according to Linnæus, are like thoſe of Trigonella laciniata, and appear as if gnawn at the

[1] Gerard. [2] Gærtner. [3] Gerard. [4] Gærtner. [5] Gouan. [6] Linn. Gærtner. [7] Ray. [8] Curtis, Fl. ruſt. Willdek. Linn. [9] Scop. [10] Gærtner. [11] Linn. [12] Scop. Gor. [13] Woodw. Mſ. &c. [14] Gerard.

edge by inſects. Leaflets oblong, emarginate, and pilloſe with two longer teeth on each ſide. Pedunclesawned, ſuſtaining about two flowers, and ſhorter than the leaves.

Native of Syria, about Aleppo.

There are other varieties mentioned by Gærtner, Retzius, and others, but the above will probably be deemed ſufficient. Some of them have been long cultivated in our gardens, but are not ſo much regarded at preſent as they were heretofore.

11. This is a very ſmall plant, with a ſmall fruit. It is nearly allied to M. polymorpha, but is perennial.

Its native place is not known.]

PROPAGATION AND CULTURE.

1. The Medick may be propagated by ſowing the ſeeds upon a moderate hot-bed, or a warm border of light earth, in the beginning of april; and when the plants come up, they ſhould be carefully cleared from weeds; but they ſhould remain undiſturbed, if ſown in the common ground, till ſeptember following; but if on a hot-bed, they ſhould be tranſplanted about midſummer into pots, placing them in the ſhade until they have taken root; after which they may be removed into a ſituation where they may be ſcreened from ſtrong winds, in which they may abide till the end of october, when they muſt be put into a common garden frame, to ſhelter them from hard froſts; for thoſe plants which have been brought up tenderly, will be liable to ſuffer by hard weather, eſpecially while they are young. In april following theſe plants may be ſhaken out of the pots, and placed in the full ground where they are deſigned to remain, which ſhould be in a light ſoil and a warm ſituation, in which they will endure the cold of our ordinary winters extremely well, and continue to produce flowers moſt part of the year, and retaining their leaves all the winter renders them the more valuable.

Thoſe alſo which were ſown in an open border may be tranſplanted in auguſt following, in the ſame manner, but in doing this be careful to take them up with a ball of earth to their roots, if poſſible, as alſo to water and ſhade them until they have taken root; after which they will require little more care than to keep them clean from weeds, and to prune off the luxuriant branches to keep them within the compaſs; but never prune them early in the ſpring, nor late in autumn, for if froſt ſhould happen ſoon after they are pruned, it will deſtroy the tender branches, and many times the whole plant is loſt thereby.

Theſe plants have been formerly preſerved in the green-houſe, ſuppoſing them too tender to live through the winter in the open air; but I have had large plants of this kind, which have remained in a warm ſituation many years without any cover, and have been much ſtronger, and flowered better than thoſe which were houſed; though, indeed, it will be proper to keep a plant or two in ſhelter, leſt by a very ſevere winter (which ſometimes happens in England) the plants abroad ſhould be deſtroyed.

They may alſo be propagated by cuttings, which ſhould be planted in april, upon a bed of light earth, and watered and ſhaded until they have taken root, after which they may be expoſed to the open air; but they ſhould remain in the ſame bed till july or auguſt following, before they are tranſplanted, by which time they will have made ſtrong roots, and may be removed with safety to the places where they are to remain, obſerving (as was before directed) to water and ſhade them until they have taken root; after which you may train them up with ſtraight ſtems, by faſtening them to ſticks, otherwiſe they are apt to grow crooked and irregular; and when you have got their ſtems to the height you deſign them, they may then be reduced to regular heads, and with pruning their irregular ſhoots every year, they may be kept in very good order.

3, 4, 5. Theſe annual ſorts are preſerved in the gardens of thoſe who are curious in botany; the ſeeds ſhould be ſown upon an open bed of freſh ground, in the places where the plants are to remain, becauſe they do not bear tranſplanting well, unleſs when they are very young. As the plants ſpread their branches on the ground, they ſhould not be ſown nearer than two feet and a half aſunder; when the plants come up, they will require no other care but to keep them clean from weeds. In june they will begin to flower, and as the ſtalks and branches extend, there will be a ſucceſſion of flowers produced till the autumn; but the early flowers are ſuch as will have good ſeeds ſucceed them, for thoſe which come late in ſummer, have not time to ripen before the cold weather comes on.

6. Lucern. This valuable plant will bear the heat of ſuch climates as the Spaniſh Weſt Indies, where it is ſown in all the plains round Lima, and furniſhes green fodder for their cattle all the year round, and may be cut every week. It would probably be of great ſervice therefore in our Weſt Indian iſlands. It is commonly cultivated along the banks of the Rhone, and in many other parts of the South of Europe, where it may be cut five or ſix times in a year. But it alſo bears our climate very well, and may be cut four or five times in a ſeaſon between the middle of april and november.

The directions given by former writers are imperfect and erroneous. Many order it to be ſown with oats or barley, as is practiſed for Clover; but in this way it ſeldom comes up well, or draws up ſo weak as not to recover itſelf under a whole year. Others have directed it to be ſown upon a low, rich moiſt ſoil, which is found to be the worſt next to a clay, of any for this plant; in both which the roots will rot in winter, and in a year or two the whole crop will be deſtroyed.

But the ſoil in which this plant is found to ſucceed beſt in this country is, a light, dry, looſe, loamy or ſandy land, which ſhould be well ploughed and dreſſed, and the roots of all noxious weeds, ſuch as Couch Graſs, &c. deſtroyed, otherwiſe they will overgrow the plants, while young, and prevent their progreſs.

The beſt time to ſow the ſeed is about the middle of april, when the weather is ſettled and fair; for if you ſow it when the ground is very wet, or in a rainy ſeaſon, the ſeeds will burſt and come to little (as is often the caſe with ſeveral ſorts of the leguminous plants,) therefore you ſhould always obſerve to ſow it in a dry ſeaſon, and if there happens rain in about a week or ten days after it is ſown, the plants will ſoon appear above ground.

But the method I would direct for the ſowing theſe ſeeds is as follows; after having well ploughed and harrowed the land very fine, you ſhould make a drill quite acroſs the ground, about half an inch deep, into which the ſeeds ſhould be ſcattered very thin by a hopper fixed to a drill plough; then cover them over half an inch thick, with the earth that came out of the drill; then proceed to make another drill about two feet and a half from the former, ſowing the ſeeds therein in the ſame manner as before, and ſo proceed through the whole ſpot of ground, allowing the ſame diſtance between row and row, and ſcatter the ſeeds very thin in the drills. In this manner, an acre of land will require about ſix pounds of ſeeds; for when it is ſown thicker, if the ſeed grows well, the plants will be ſo cloſe as to ſpoil each other in a year or two, the heads of them growing to a conſiderable ſize, as will alſo the roots, provided they have room. I have meaſured the crown of one root, which was in my poſſeſſion, eighteen inches diameter; from which I cut near four hundred ſhoots at one time, which is an extraordinary increaſe, and this upon a poor, dry, gravelly ſoil, which had not been dunged for many years, but the root was at leaſt fourteen years old; ſo that if this crop be well cultivated, it will continue many years, and be equally good as when it was firſt ſown; for the roots generally run down very deep in the ground, provided the ſoil be dry; and although they ſhould meet a hard gravel a foot below the ſurface, yet their roots would penetrate it, and make their way downward, as I have experienced, having taken up ſome of them which were above four feet in length, and had run above two feet into a rock of gravel, which

[a] Linn.

which was ſo hard as not to be looſened without mattocks and crows of iron, and that with much difficulty.

The reaſon for directing this ſeed to be ſown in rows is, that the plants may have room to grow; and for the better ſtirring the ground between them, to deſtroy the weeds, and encourage the growth of the plants, which may be very eaſily effected with a Dutch hoe, juſt after the cutting the crop each time, which will cauſe the plants to ſhoot again in a very little time, and be much ſtronger than in ſuch places where the ground cannot be ſtirred; but when the plants firſt come up, the ground between them ſhould be hoed by hand with a common hoe; and if in doing this you cut up the plants where they are too cloſe in the rows, it will cauſe the remaining to be much ſtronger. This hoeing ſhould be repeated two or three times while the plants are young, according as the weeds are produced, obſerving always to do it in dry weather, that the weeds may the better be deſtroyed; for if it be done in moiſt weather, they will take root and grow again.

With this management, the plants will grow to the height of two feet, or more, by the beginning of auguſt, when the flowers will begin to appear, when it ſhould be cut for the firſt time, obſerving to do it in a dry ſeaſon, eſpecially if it is to be made into hay, and keep it often turned, that it may ſoon dry, and be carried off the ground; for if it lie long upon the roots, it will prevent their ſhooting again. After the crop is taken off, you ſhould ſtir the ground between the rows with a hoe, to kill the weeds, and looſen the ſurface, which will cauſe the plants to ſhoot again in a ſhort time, ſo that by the middle of ſeptember there will be ſhoots four or five inches high, when you may turn in ſheep upon it to feed it down, for it will not be fit to cut again the ſame ſeaſon; nor ſhould the ſhoots be ſuffered to remain upon the plants, which would decay when the froſty weather comes on, and fall down upon the roots, and prevent their ſhooting early the ſucceeding ſpring; but theſe ſheep ſhould not remain ſo long upon it as to endanger the crowns of the roots.

So that the beſt way is to feed it until november, when it will have done ſhooting for that ſeaſon; but it ſhould not be fed by large cattle the firſt year, becauſe the roots being young, would be in danger of being deſtroyed, either by their trampling upon them, or their pulling them out of the ground; but ſheep will be of ſervice to the roots by dunging the ground, provided they do not eat too cloſe.

The beginning of february, the ground between the roots ſhould be again ſtirred with the hoe, to encourage them to ſhoot again; but in doing this be careful not to injure the crown of the roots, upon which the buds are at that time very turgid, and ready to puſh. With this management, if the ſoil be warm, by the middle of march the ſhoots will be five or ſix inches high, when, if you are in want of fodder, you may feed it down till a week in april; after which it ſhould be ſuffered to grow for a crop, which will be fit to cut the beginning of june, when you ſhould obſerve to get it off the ground as ſoon as poſſible, and ſtir the ground again with a Dutch hoe, which will forward the plants ſhooting again, ſo that by the middle of july, there will be another crop fit to cut, which muſt be managed as before; after which it ſhould be fed down again in autumn, and as the roots by this time will have taken deep hold in the ground, there will be little danger of hurting them, if you ſhould turn in large cattle; but you muſt always obſerve not to ſuffer them to remain after the roots have done ſhooting, leſt they ſhould eat down the crown of the roots below the buds, which would conſiderably damage, if not deſtroy them. In this manner you may continue conſtantly to have two crops to cut, and two feedings upon this plant, and in good ſummers there may be three crops cut, and two feedings; which will be a great improvement, eſpecially as this plant will grow upon dry barren ſoils, where Graſs will produce little, eſpecially in dry ſeaſons, when it will be of great uſe, the Graſs being often burnt up. And as it is an early plant in the ſpring, ſo it will be of great ſervice when fodder falls ſhort at that ſeaſon, when it will be fit to feed at leaſt a month before Graſs or Clover; for I have had this plant eight inches high by the tenth of march, old ſtyle, at which time the Graſs in the ſame place has ſcarcely been one inch high.

That the cold will not injure this plant, I am fully ſatisfied; for in the very cold winter, anno 1729-30, I had ſome roots of this plant which were dug up in october, and laid upon the ground in the open air till the beginning of march, when I planted them again, and they ſhot out very vigorouſly ſoon after; nay, even while they lay upon the ground, they ſtruck out fibres from the under ſide of the roots, and began to make ſhoots from the crown of the roots. But that wet will deſtroy the roots I am fully convinced, for I ſowed above an acre upon a moiſt ſpot of ground for a trial, which came up very well, and flouriſhed exceedingly during the ſummer ſeaſon, but in winter, when the great rains fell, the roots began to rot at bottom, and before the ſpring moſt of them were deſtroyed. There has been lately ſome perſons who have adviſed the ſowing of Lucern in broad-caſt, and to make uſe of a ſtrong harrow, to tear up and deſtroy the weeds which naturally grow up among the plants; but this advice has been given too prematurely, therefore it is to be hoped will not be followed by any diſcreet perſons, who are deſired to take a ſurvey of ſome of theſe lands which have been ſo cultivated three or four years, which I am fully perſuaded will convince them of the bad huſbandry, for no perſon who has any regard neatneſs and utility, will ever practiſe this method.

The beſt places to procure the ſeed from, are Switzerland, and the northern parts of France, for the ſeeds ſaved in thoſe countries ſucceed better with us than that which comes from a more ſouthern climate; but this ſeed may be ſaved full as well in England, and in as great plenty, were people curious enough to let the firſt crop ſtand for that purpoſe; in order to which, a ſmall quantity of the plants ſhould be ſuffered to grow uncut till the ſeeds are ripe, which is commonly about the beginning of ſeptember, when it muſt be cut, and laid to dry in an open barn, where the air may freely paſs through, but be defended from the wet; for if it be expoſed thereto, it will ſhoot while it remains in the pod, whereby it will be ſpoiled. When it is quite dry, it muſt be threſhed out, and cleanſed from the huſk, and preſerved in a dry place till the ſeaſon for ſowing it; and this ſeed ſaved in England is much preferable to any brought from abroad, as I have ſeveral times experienced, the plants produced from it having been much ſtronger than thoſe produced from French, Helvetian, and Turkey ſeeds, which were ſown at the ſame time, and on the ſame ſoil and ſituation.

I am inclinable to think, that the reaſon of this plant not ſucceeding, when it has been ſown in England, has either been occaſioned by the ſowing it with Corn, with which it will by no means thrive, (for though the plant be very hardy when grown pretty large, yet at its firſt coming up, if it be incommoded by any other plants or weeds, it ſeldom does well; therefore it ſhould always be ſown by itſelf, and carefully cleared from weeds until it has ſtrength, after which it is not eaſily deſtroyed;) or, perhaps, people have ſown it at a wrong ſeaſon, or in wet weather, whereby the ſeeds have rotted, and never come up, which has diſcouraged their attempting it again: but however the ſucceſs has been, I dare aver, that if the method of ſowing and managing this plant, which is here laid down, be duly followed, it will be found to thrive as well as any other ſort of plant now cultivated in England, producing a much greater crop than any other ſort of fodder, and will continue much longer; for if the ground be duly ſtirred after the cutting each crop, and the laſt crop fed as has been directed, the plants will continue in vigour forty years or more, without renewing, provided they are not permitted to ſeed, which will weaken the roots more than four times cutting it would do. The hay of this plant ſhould be kept in cloſe barns, it being too tender

to

to be kept in ricks open to the air as other hay; but it will remain good, if well dried before it be carried in, three years. The people abroad reckon an acre of this fodder sufficient to keep three horses all the year round.

And I have been assured by persons of undoubted credit, who have cultivated this plant in England, that three acres of it had fed ten cart-horses from the end of april to the beginning of october, without any other food, though they have been constantly worked. Indeed, the best use which can be made of this Grass is, to cut it, and give it green to the cattle; where this has been daily practised, I have observed that by the time the field has been cut over, that part which was the first cut has been ready to cut again; so that there has been a constant supply in the same field, from the middle of april to the end of october: when the season has continued long mild, and when the summers have proved showery, I have known six crops cut in one season, but in the driest seasons there will be always three or four. When the plant begins to flower, it should then be cut; for if it stands longer, the stalks will grow hard, and the under leaves will decay, so that the cattle will not so greedily devour it. Where there is a quantity of this cultivated, some of it should be cut before the flowers appear, otherwise there will be too much to cut within a proper time.

When this is made into hay, it will require a great deal of making; for as the stalks are very succulent, it must be often turned, and exposed a fortnight or longer, before it will be fit to house; for this requires a longer time to make than Saint Foin; therefore, when it is cut, it should be carried to make upon some Grass ground, because the earth in the intervals of the rows will wash up, and mix with the hay in every shower of rain, and by carrying it off as soon as it is cut, the plants will shoot up again soon; but it is not so profitable for hay, as to cut green for all sorts of cattle, but especially horses, which are extremely fond of it; and to them it will answer the purpose both of hay and Corn, and they may be worked at the same time just as much as when they are fed with Corn, or dry food.

To these directions of Mr. Miller may be added the result of more modern experience.

John Pratt Esq. of Poorfleet in Essex sowed Lucern in a field of good hazle loam, neither too light nor too stiff, the soil about three feet deep, with a chalky bottom.

The field in 1773 had borne turneps, properly hoed and fed off with sheep; and on april 13th 1774, after the land had two ploughings and harrowings, the ground being fine, he began to sow in drills twenty inches distant on two acres, six pounds of seed on an acre, covering it with a garden rake.

In may and june the fly (flea) made great havock, so that at different times the sowing and hoeing were repeated until the 5th of july, when the rows were complete, and those parts that were not damaged by the fly were in a thriving state. On the 30th of july he began to cut, and by the 20th of september, it it had been cut all over once. At the end of october he laid ten loads of rotten dung on each acre, and with a small plough turned the earth each way out of the alleys over the plants, so that the land appeared like a fallow.

In this state it lay until the 20th of february, when it was bush-harrowed cross-wise, to lay the ridges down into the alleys again.

On the 27th of may he began to cut, the Lucern being about twenty inches high.

June the 20th he began to cut a second time, and followed this cutting with a horse-hoeing in the alleys, and hand-weeding in the rows. August the 7th he began to cut the third time. September the 26th the fourth time. And november the 6th dunged and ploughed as in the preceding year.

In 1776, the weather being wet, he could not bush-harrow until the 12th of march; and on the 27th the plants growing fast, he gave it a perfect hand-weeding in the rows. He began cutting in may, and during this summer cut four crops, horse-hoing the alleys each time. In september he hand-weeded again, and in november dunged and ploughed the alleys as before.

In may this year he sowed near two acres more, adjoining to the above piece, which land had the preceding winter borne cabbages, which were taken off before Christmas, and the land was then ploughed and prepared for sowing. The plants came up well, and no accident happened from the fly. He cut this sowing once, and cultivated it in the same manner as the other.

In 1777, february the 28th he levelled the ridges with a bush-harrow. May the 22nd he began to cut, and had four crops again this summer, horse-hoeing after each cutting. He hand-weeded the rows in october; and in november dunged and ploughed the alleys as before.

This year he added seven rows, to make the quantity four acres.

1778, in february, harrowed down as before. May the 4th began cutting, and had four crops as usual. The last cutting was finished the 30th of october, when the land was treated as in the former years.

This year the four acres kept eleven horses from the 4th of may to the 31st of october, and they improved much with only half their usual allowance of corn. Three additional horses were likewise fed from this Lucern seventy-four days.

1779, in february bush-harrowed as usual. May the 7th begun to cut, and fed ten horses: on the 21st added two horses; but before the whole was cut, the part where the cutting commenced had grown so luxuriantly as to be in flower; twenty-one horses therefore were added during seven days, before he began to cut the second time, which was on june the 24th. He began to cut the third time on august the 3rd; and the fourth time on september the 9th.

The plants continued growing in such a manner, that by the time the whole four acres had been cut over, which was on the 10th of october, the part first cut was grown twelve inches high. It being then too late in the season for another cutting, fifteen head of horned cattle were turned in for eight days. He then gave it a hand-weeding, and dunged and ploughed as before.

The produce this year maintained ten horses twenty-two weeks; two horses twenty weeks; twenty-one horses one week; and fifteen head of cattle eight days.

Mr. Pratt remarks, that the land which bore cabbages, was preferable to that which had turneps, being much cleaner.

That may is the proper month for sowing; that hand-hoeing and weeding are requisite the first year, the plants being then too tender for the horse-hoe; and that cutting once only the first year, gives the roots time to shoot down and gather strength.

That horse-hoeing the alleys after every cutting, and hand-weeding the rows in march or april are necessary; and before it is laid up for the winter, should not on any account be omitted. After the last cutting and weeding, he recommends ten or twelve loads of rotten dung to be laid on an acre, and gathered up with a small plough, to form the ridges over the crowns of the roots. In february, the first dry day, these ridges are to be bush-harrowed down into the alleys.

This is a principal feature in Mr. Pratt's culture of Lucern. Mr. Belcher affirms that Mr. Miller could not have had any experience in Lucern, because he does not recommend this practice; and yet Mr. Young asserts from his own knowledge, that so far from doing good, it injures the crop.

The third year, as Mr. Pratt proceeds to observe, the plants appear to arrive at their perfection, neither improving nor diminishing afterwards.

Neither dry nor wet weather materially affects its growth, which is about an inch a day; but something less, if the weather be cold.

Lucern has the effect of salt-marshes, it purges and is diuretic for three or four days, and then fattens horses at a great rate, with scarcely half the usual allowance of corn.

Sheep will scoop the crowns of the roots, and thus deſtroy the buds formed for the ſucceeding ſhoot, they ſhould not therefore be permitted to bait on it: but this is not the caſe with horned cattle.

The drills of the firſt two acres were made by a line and hoe; but thoſe of the laſt two acres were made by taking out the teeth of a horſe-rake, and fixing in ſome angular teeth, like the angular chiſſel of the wheelers, at twenty inches diſtance, which performed the work well. The laſt were done at half the expenſe[3].

A Gentleman Farmer in Hertfordſhire divided a field of two acres into four parts, and ſowed it with Lucern, the firſt part in drills three feet aſunder, the ſecond two feet, the third one foot, and the fourth broad-caſt. The ſoil was equal throughout the field. The ſeed was ſown on the 24th of april, and the crop was cut on the 16th of auguſt.

This year the plants in every part of the field were nearly equal in goodneſs, but the number being much greater on an equal ſpace of ground in the part ſown broad-caſt, the crop was of courſe heavieſt there; theſe plants being as good the firſt year as afterwards. But in the courſe of three years, the plants in the three-feet drills became much ſtronger, and ſpread ſo as nearly to fill up the intervals. The produce of one root was then more than that of any ten roots in the broad-caſt part; which by ſtanding too cloſe were impoveriſhed, and could not increaſe in bulk like the others.

In the fourth year the produce of the three-feet drills was more than double the broad-caſt; this land alſo was kept free from weeds by the horſe-hoe, and was earthed up at a ſmall expenſe. At the end of this year, the broad-caſt part was ploughed up, and planted afreſh with roots from the one-foot drills, in three-feet rows. The firſt ſeaſon they ſeemed ſtunted, but the following ſpring they ſhot forth vigorouſly, and were nearly equal to the other.

Weeds are the greateſt enemies to Lucern: the eaſieſt and cheapeſt way of keeping the crop clean, is to ſow it in drills of ſufficient width to admit the horſe-hoe; which not only deſtroys the weeds at the leaſt expenſe, but greatly promotes the growth of the plants, by earthing them up in the operation[4].

Mr. Baldwin of Clapham ſowed a field of four acres and a half with Lucern. The ſoil a ſandy dark-coloured loam, good turnep land, and yielding good barley. Two acres were tranſplanted in ſeptember 1764. An acre was drilled by hand the 2nd of may 1765; the rows in both two feet aſunder. The tranſplanted was firſt hoed in november 1764, and coſt 6s. an acre: it was hoed again in april following at 10s. an acre. Weeding by hand the drilled acre the middle of june following coſt 12s. an acre. The ſummer of 1765 being very dry, the produce was very trifling.

In 1766 Mr. Baldwin began to cut it the 28th of april, when it ſerved his horſes and cows to the 7th of june, ſix weeks. On the 7th of july he cut the whole three acres for hay, about three loads; and about three loads more on the 15th of auguſt: the fourth crop, which was pretty good, he fed off with cows and ſome ſheep.

In 1767 he began to cut it on the 11th of may, and fed five horſes, with four cows occaſionally, till the 20th of june, ſix weeks; when he mowed the remainder, being about an acre, and it yielded a load and half of hay.

He weighed the crop at different periods, and found on the 30th of may, one rod of drilled Lucern to weigh 95lbs. On the 9th of june, one rod of tranſplanted weighed 80lb; and on the 20th of the ſame month a rod of the tranſplanted weighed 120lb. On the ſame day a rod of broad-caſt Lucern belonging to a neighbouring gentleman, with ſome graſs and weeds weighed 158lb.

Some gentlemen and jobbing coachmen in his neighbourhood being deſirous of feeding their horſes with Lucern, Mr. Baldwin agreed to do it for them at the ſame price they gave for tares, that is 7d. a bundle of 60lb, or 6s. a week for every horſe. Hence he diſcovered that one rod with another the ſecond crop yielded from 60 to 64lbs; that a large coach-horſe would eat about 90lb in twenty-four hours, and that an acre would ſerve five horſes twenty-one days.

Cleaning Lucern in rows by hand-hoeing being much too expenſive, Mr. Baldwin invented a horſe-hoe, with which he cleaned his field very well at the end of october in two days, with one man, a horſe and a boy; by this means he reduced the heavy expenſe of hoeing to 1s. 6d. or 2s. an acre. He alſo invented a hoeing plough, with which on the 17th of november he ploughed his three acres five or ſix inches deep; afterwards harrowing the field acroſs with common harrows, and carting off near eight loads of weeds. Thus it lay till he began to cut it on the 11th of may, horſe-hoeing as he went on once a week, and alſo after every cutting. Drawing the drills, ſowing the ſeed by hand, and covering it by two boys at 3s. a day, and two men at 2od. coſt for an acre about 10s. Raiſing the plants, ploughing, and planting the tranſplanted Lucern coſt about 30s. an acre.

Mr. Baldwin obſerving that Lucern the firſt year yielded but little, on an acre and half ſowed three buſhels of barley on the 30th of march; and on the 8th 9th and 10th of april drilled it with Lucern[5].

Soil.

As to the ſoil, Virgil is always quoted to ſhow that ſuch as is looſe and crumbling, or rich and putrid, is moſt proper for Lucern. Even the learned Harte has fallen into this error. But Virgil's precept relates not to the ſoil, but to the management of it, which is of much greater conſequence, becauſe that is more in our power. He does not recommend a rich putrid ſoil preferably to all others, but that the land ſhould be well pulverized by ploughing, &c. ſo as to be in a proper condition to receive the ſeed.

——Tu quoque Media putres
Accipiunt *ſulci*.

It is remarkable that Harte changes *putres ſulci* into *putri terra*, makes it ſynonymous with the *temperata* of Varro, and tranſlates it a rich loamy earth.

This is certainly an excellent ſoil for Lucern, or indeed for any thing elſe, when it can be had, but not being the moſt common, we muſt frequently be contented with ſuch ſoils as are worſe. Rocque ſays that the ſtrongeſt is to be preferred; and Mr. Beleher, that although it will ſucceed on moſt middling ſorts of land, it ſhould, if poſſible, have a ſoil both ſtiff and dry, or as he elſewhere ſays, ſuch as is cloſe, firm, and ſound, in oppoſition to the foreign writers, with Tull and Miller, who recommend a light, looſe, ſandy ſoil. The right ſoils, according to others, are deep rich friable loams, whether ſandy or gravelly, or flexible loams, &c. deep and rich; in a word, all rich ſoils that are dry. In Kent it is ſown in dry lands. Under the South Downs of Suſſex, in the vicinity of Eaſt Bourn, where Lucern is a common article of cultivation, they rarely ſow it upon any but the richeſt and deepeſt ſoils, thinking that it does not anſwer on any other. Their land is ſuch a happy mixture of the calcareous and argillaceous, and is of ſo deep a ſtaple, that any thing will grow upon it, and Lucern, Sainfoin and Clover may be found ſide by ſide. I have however ſeen very good crops of Lucern produced in gravelly, ſandy and ſtony loams, by no means rich, and even on poor ſandy gravel, apt to burn. One of the beſt crops I was ever witneſs to was on brick and lime rubbiſh, the remains of old buildings. I never ſaw it proſper on very ſtiff clays, nor on wet ſpringy lands, nor on any ſoil very retentive of moiſture. It has a better chance even on thin loams on rock and on poor ſands, though no man would chooſe ſuch ſoils for it, if he had better, becauſe the roots of Lucern will travel far in ſearch of nutriment.

Preparation.

The great buſineſs in the culture of Lucern being to keep it free from weeds, eſpecially whilſt it is young, much depends upon preparing the ſoil in ſuch a manner

[3] Tranſ. Soc. Arts. vol. 1. [4] Bath papers, vol. 2. 104. [5] Young's 6x weeks tour, 220.

that all ſorts of uſeleſs plants ſhall be killed. It is much cheaper to prevent weeds than to deſtroy them, and every ſhilling laid out in cleaning the land, will ſave a crown in hoeing the crop. For this reaſon two ſucceſſive crops of turneps or carrots prepare the land well for it: but as turneps upon good loams, if carted in a wet ſeaſon, are apt to prevent that friability which is neceſſary for Lucern, the turneps ſhould be fed off in autumn, and the land immediately ploughed. Carrots are not liable to any objection, for they ſhould always be drawn and laid up before winter, and the inceſſant hoeing which they require, cleans the land admirably. If the land be prepared by a fallow, let a man with a baſket and four-pronged fork follow the plough in every furrow, and the harrows whenever they work, to pick up all roots and weeds, and to clear away ſuch knots and tufts as the plough does not go deep enough to eradicate. Carrots, turneps or cabbages may be made preparatory crops; at leaſt there ſhould be two hoeing crops in ſucceſſion. In the ſecond ſpring, previous to the ſowing, there ſhould be three ploughings, and harrowings enough to pulverize the ſoil well. Thus we ſhall attain the *putres ſulci* or crumbling furrows of Virgil[1].

Rocque recommends peas and beans as a good preparation, or potatoes as the beſt: the next ſeaſon a fallow for turneps, to be fed off with ſheep. Or forward peas, and turneps as ſoon as they are off, to be fed by Chriſtmas, then trench-ploughed, and the Lucern ſown in april. In Kent the common tillage is a good ſummer fallow, ploughed as deep as poſſible, with a good covering of manure.

According to Mr. Wynn Baker turneps are the beſt preparation. A. St. Leger, Eſq; prepared ſucceſsfully by paring and burning. But whether the preparation be by hoeing crops, &c. or by a fallow, it is indiſpenſable that the land ſhould be well pulverized by plough and harrow, laid as flat as poſſible, and cleared of all weeds. If it be on a deſcent, and not dry, the furrows ſhould be drawn down the land; but if the ſoil be very dry, they had better be across it. If the land be in heart, there is no occaſion for any manure; or if manure be applied, it ſhould be with the firſt of the two hoeing crops. Mr. Rocque recommends freſh ſtable dung to be laid on before the laſt ploughing, and to be ploughed in directly; but this will be apt to fill the land with weeds, and cannot be neceſſary if it was manured for the firſt hoeing crop.

Modes of Sowing. 1. *Broad-caſt.* 2. *Drilling.*

Both modes have ſucceeded with different perſons, and both have failed. Circumſtances muſt govern the deciſion of the cultivator. If he be doubtful whether he ſhall be able to give a regular and conſtant attention to hand and horſe-hoeing, or if he be ſatisfied with his crop laſting eight or ten years, then the broad-caſt may be preferred. But if he be willing and able to have the crop perfectly well managed in reſpect to hoeing, and if he be deſirous to have it laſt twenty or thirty years, he will then probably prefer the drill culture. Both have their advantages and diſadvantages.

Time of Sowing.

Whichever method be adopted, the time of ſowing is chiefly during the month of april. The end of march is commonly too early: and the chance of a failure is greater in may than in april, both on account of the drought and the fly. It ſhould be ſown later on heavy than on light lands; and if poſſible in dry weather, when there is a proſpect of ſhowers.

Columella directs it to be ſown at the end of april, and it is remarkable that Pliny ſays it is ſown in may, becauſe it ſown earlier it would be liable to injury from white froſts. If this be the caſe in Italy, how imprudent, it will be ſaid, muſt it be, to ſow here in april. Yet in practice I have ſcarcely ever known april-ſown Lucern receive any material injury from froſt.

Quantity of Seed.

In ſowing broad-caſt Rocque directs 12lb to an acre; in Kent they ſow from 16 to 20lb; near Eaſt Bourn they ſow 20lb, which is generally allowed to be the proper quantity: in France they allow near 30lb to an Engliſh acre. Some ſow only 10lb, with 6lb of broad clover, to have a crop the firſt ſeaſon, both with a thin crop of barley or oats. Where Lucern is put in broad-caſt alone, it ſhould not be too thin, becauſe the method of cleaning it is ſo ſevere that the crop might be reduced too much whilſt it is young and tender[m].

In drilling 6lb. of ſeed is by ſome thought ſufficient to ſow an acre in two-feet rows. In this proportion about 8lb will be required for eighteen inch rows, 12lb for twelve inch rows, and 18lb. for nine inch rows[n]. Mr. Belcher however directs 12lb, or about a gallon and half of ſeed to be ſown on an acre, when the rows are two feet aſunder[o].

Diſtance of Rows.

In the Drill culture of Lucern there is much difference of opinion reſpecting the beſt diſtance for the rows, and directions are given for diſtances from nine to forty inches. Thoſe who approximate to the broad-caſt culture are for the former, and ſtill prefer it to that, becauſe it will admit a good furrow with a narrow ſhare inſtead of the broad-caſt harrowing. But the advocates for the horſe-hoeing culture prefer greater diſtances. Mr. Miller and Mr. Belcher recommend two feet. Mr. Harte ſtands almoſt alone for forty inches. Two-feet rows will admit of horſe-hoeing; and Lucern cannot be kept clean without it, except at too great an expenſe.

Some reſpect ſhould be had to the quality of the land. The rows may be cloſer on land that is leſs rich. Thus ſome recommend one-foot rows on ſoils worth 30s. an acre, and nine-inch rows on thoſe which are worth only 20s: reputing ſoils of leſs value as in general not much to be recommended for Lucern[p].

Sowing with or without Corn, &c.

Mr. Miller was a decided enemy to ſowing this or any other leguminous crop with corn. Others however are advocates for this mixture. Barley is moſt commonly uſed for this purpoſe, not more than one or two buſhels to the acre; Sprat-Barley is better than the common, as leſs liable to lodge: but perhaps Oats ſhould be preferred, two buſhels to the acre, as being ſtill leſs apt to lodge when ſown thin. This is practiſed in Flanders, and a few pounds of Clover ſeed are added. If the land is very rich, ſix pecks an acre may be enough; but if not, two buſhels ſhould be ſown, and upon poorer land three. In Kent they ſow it with a thin crop of Barley. After the corn is ſown and harrowed, ſow the Lucern, and finiſh with a light harrow[q]. The corn ſhould be mown green and given to cattle[r]. Some have tried Beans, and others Peas with the Lucern inſtead of Corn[s].

Broad-caſt culture.

If the Lucern be ſown with corn, and that be ſuffered to ſtand for a crop, as ſoon as harveſt is over, nothing is to be done to it but keeping cattle out, or the ſtubble ſhould be fed only by calves and young cattle, and that in dry weather. Rocque directs it to be harrowed when one year old with a large harrow, in dry weather, early in the ſpring to kill the weeds, and to dreſs it with rotten dung. Others delay this operation till after the ſecond cutting of the Lucern. Some caution ſhould be obſerved not to harrow ſo ſeverely as may be done afterwards. The ſecond ſpring Rocque directs to plough the ground with a drill plough without a coulter. Pliny ſays, that if weeds get ahead, the only remedy is frequent ploughing, till all other roots be deſtroyed. Tull gives a remarkable inſtance of a plant mangled by the plough for twenty-two years, and yet thriving. This plant therefore, when it has acquired ſtrength, for it is very delicate at firſt, will bear the action of the plough, at leaſt with a round ſhare; or harrowing twice in a ſeaſon, in may or june, and auguſt or ſeptember, with a heavy harrow. The weeds ſhould be collected and carried off, and then it may be levelled for the ſcythe with a barley roller. Half a growth in autumn, inſtead of being mown,

[1] Young's Annals, 25. 87.

[m] Young's Ann. 25. 91. [n] Ibid. [o] Id. 1. 305.
[p] Id. 25. 91. [q] Id. 25. 91. [r] Id. 1. 307.
[s] Id. 3. 433.

may be fed off with cattle. Before every harrowing, if there be any thin places, ſome ſeed may be ſcattered into them[1].

I do not ſee why in ſowing Lucern broad-caſt, the plants may not be ſingled out and kept clean with the hand-hoe, in the ſame manner with turneps[2].

Mr. Belcher ſays, that the beſt way to meliorate broad-caſt Lucern is in autumn to ſtrike the ground up into ſharp ridges with a pointed ſhare, that the plants may be injured as little as poſſible. Then in the ſpring to plough it without a coulter croſſwiſe, with a pointed ſhare, or only ſtruck; and afterwards to harrow it down. When the Lucern ſhoots, if there be any vacant ſpots, ſow afreſh, and rake the ſeed in. When the ground is mellow, the autumnal ſtrike-baulking, as it is termed in Kent, will not much injure the Lucern, which having ſtringy tough roots, the pointed ſhare ſlips by them. But all the plants will not be ſo equally covered in this culture as in drills, over which each ridge may be centered. The ſnake-headed harrow would, if any, tear out the graſs from broad-caſt crops, without the uſe of the plough: the time to uſe it would be in winter and wet weather. If the vacancies are neglected in april, they may be ſown after the firſt cutting[3].

Dr. Tanner of Hadleigh in Suffolk had four acres ſown broad-caſt. The crop was four years old when Mr. Young examined it. He found it on a medium twenty-five inches high, thick and luxuriant, but far from being free of weeds. It had been harrowed in Mr. Rocque's manner, with a heavy harrow every year in march; which was thought to be of great ſervice in looſening the ground, though not in deſtroying the weeds altogether. Theſe four acres are the chief ſupport of fourteen or fifteen horſes and cows from the end of april till Michaelmas; after which it is fed down cloſe with ſheep till near Chriſtmas. It was ſown with ſpring corn after turneps, but the owner was of opinion, that if the field had been ſummer-fallowed for it, the Lucern would have entirely choaked all other graſs and common weeds.

Some Dutch Clover and Ray-graſs grows with it, which is found advantageous. One part of the field was well manured with dung, and the owner propoſed doing the ſame by the reſt of it; and after harrowing in february or march, to ſcatter ſome freſh ſeed, where the plants failed the moſt[4].

It having been found by repeated experiments that broad-caſt Lucern will not ſucceed upon lands that are not perfectly clean, Mr. St. Leger adopted the following method.

In the month of auguſt, he mowed the graſs from one acre three roods, and immediately after the hay was removed pared and burnt the ſurface. The aſhes were put into two heaps, and covered with ſods. The ground was then ploughed as deep as its ſtaple would admit of. On the 11th of november he harrowed it with heavy harrows, and on the 25th ploughed it acroſs. On the 4th of january it was harrowed again. One heap of the aſhes was ſpread on the 23d of march, and on the 2d of april the land was ploughed and ſown with lentils. Had the weather permitted they would have been ſown immediately on ſpreading the aſhes. At the beginning of auguſt the lentils were cut, and the other heap of aſhes was ſpread upon the ſurface; after which the land was ploughed, and immediately ſown with turnep-ſeed. The turneps were well hoed, and produced an exceeding good crop. Being late ſown, they conſequently kept later in the ſpring than ſuch as were ſown at the uſual ſeaſon.

In may following the field was ſown broad-caſt with Lucern-ſeed, after being properly ploughed and harrowed. The quantity of ſeed 12lb. to the acre, ſown at twice. The firſt ſeaſon the plants ſhould be hand-weeded, being then very tender; but the ſucceeding years, when the roots have penetrated the ſoil, the land ſhould be run over with very heavy harrows, after every cutting, to tear up the graſs and weeds.

After the froſts are over, and vegetation begins, the land may be harrowed, if foul; but if clean, that operation will not be required till after the firſt cutting[5].

Mr. Fitch, of Pluckley in Kent, had two acres of broad-caſt Lucern, ſown twenty years before with barley; when Mr. Belcher viewed it, the plants were in patches or ſingle, often two or three feet apart, yet it produced four tons of hay on an acre, at three cuttings. Its having ſtood twenty years without culture, is a proof that it will thrive on ſome ſoils, even when the graſs is become a turf. It ſhows alſo what a large ſpace plants of Lucern will fill; and confirms Miller's aſſertion, that he had a plant, whoſe crown was eighteen inches in diameter, from which he cut near four hundred ſhoots at one time[6].

Drilled Culture.

When the rows are come up, and weeds begin to appear, in dry weather a ſhim ſhould be run between them, to cut up the weeds and looſen the ſoil, and a hand-hoeing and picking ſhould follow to clear them perfectly. Theſe operations muſt be repeated, as they are wanted. The year following, ſo ſoon as the land is dry enough in the ſpring, and through the whole ſummer, it muſt be a conſtant conflict between the ſhim or hoe and any weeds that may appear. The crop muſt be kept conſtantly and abſolutely clean; but the principal attention is to be given immediately after every cutting, the weeds being then beſt diſcovered and moſt eaſily deſtroyed, particularly by the horſe-hoe, where the rows are wide enough to admit of that inſtrument. If the rows be very ſtraight, the ſhim is of great uſe, becauſe it may be directed ſo near the rows as to ſave much hand-hoeing; and for getting out ſuch weeds as grow among the plants a pronged hoe is of much ſervice.

A field of Lucern ſhould never be weedy under a notion that the crop will mow well and free from duſt; for if it be as luxuriant and thick as it ought to be, provided the rows are nearer in proportion as the ſoil is poorer, there will be no difficulty of that ſort[7].

Mr. Belcher, who prefers drill-ſowing of Lucern in general to broad-caſt, directs it firſt to be cleaned by hand, and when it has obtained ſtrength, to have the plough drawn deep between the rows after each cutting, eſpecially ſome time after the laſt, at the end of october, the beginning of november, or later, at which time boards may be fixed to the plough, and the ground left in ridges till towards the ſpring, the end of february, or beginning of march, or later, before it is harrowed down again[8].

This winter-earthing the Lucern is of ſingular benefit in ſmothering the natural graſs, the arch-enemy of it, in our moiſt climate: and the vegetation of Lucern being at a ſtand during the winter, it does not ſuffer from the excluſion of the air any more than artichokes or aſparagus. Mr. Belcher regards this operation as the corner-ſtone on which the profitable cultivation of this crop depends, in a moiſt climate[9]. And yet it has been tried by others without any ſucceſs, and has been found to retard the growth much, and even to deſtroy it[10].

In drill-ſowing ſo ſmall a ſeed as that of Lucern, it is a good way nearly to fill a bottle with it, and having corked the bottle, to bore a hole through the cork, and to inſert a large quill cut at each end, or a ſmall tin tube, ſuch as ſeedſmen uſe to tap ſacks of ſmall ſeed, to draw a ſample[11].

Mr. Belcher has given a journal of a field of Lucern for the three firſt years. It contained an acre and three roods, had been an old lay, but under corn for ſome years laſt paſt, good land, but ſomewhat too light in his opinion for Lucern.

Between may the 9th and the 16th he ſowed eighteen pounds of Lucern, and the ſame quantity of clover ſeed, in alternate fifteen-inch rows, out of a flat quart bottle, through a hole in the cork, by a line, covering the ſeed with a hoe. A ſhower on the 12th brought up much of the firſt ſowing in ſix days after, the

[1] Young's ann. 25. 93.
[2] Young's Southern tour. p. 3.
[3] Young's ann. 1. 307.
[4] Young's Southern tour. p. 65.
[5] Hunter's Huſb. p. 402.
[6] Id. 25. 64.
[7] Young's ann. 1. 302.
[8] Mar. rud. 4. 302.
[9] Young's ann. 3. 433.
[10] M. S. information.
[11] Id. 13. 49.

ground being extremely dry before, and cold afterwards. Towards the end of june he hand-hoed and hand-weeded: in fome places it was eaten by the fly and weak, weaker in general than the clover, but in the beft places higher. September the 6th began to mow them for the team, the clover producing the moft by much; together a load on an acre, had it been made into hay. The horfes eat it promifcuously. Stocked it after mowing with lambs and riders till the end of october, being a very dry time. At the beginning of november earthed for experiment feven rows of the Lucern as deep as poffible, deftroying the clover, alfo earthed fhallowly the remainder of the Lucern, except eleven fhort rows, by turning the earth with one board over it from the clover on both fides, uncovering it afterwards (fome earth having fallen on it) except a few fhort rows. The crop was very fmall, the ground confidered, but the fummer was very dry.

The fecond year on february the 23d uncovered part of a row, to fee if doing it earlier than common were of importance. On the 27th it was preparing to fhoot. On the 28th it was harrowed all down, the feven deep-earthed rows more than the reft. March the 24th it began to advance, but irregularly. That which was not covered at all was the eveneft; and the feven deep-covered rows were the worft of all, fome of the plants being feemingly deftroyed. However covering had the propofed effect of fmothering the natural grafs. From this inequality in coming on, it feems that Miller's obfervation, that it may be fed, it paflure run fhort, from the middle of march to a week in april, is a very good one: for then, growing away together, it will be ready for cutting nearly as foon as if not fed. April 12th the Lucern was advanced confiderable in fpite of very cold weather; the feven deep-earthed rows ftill the weakeft. The row of clover left covered through the winter now much inferior to the reft, but being thinner, flourifhed much afterwards. On the 30th obferved the eleven fhort rows not worked at all to be yellower than their neighbours. May the 23d began to mow the Lucern and clover, though not ready, except for fwine; but was fearful the clover, which was much the ftronger, would damage the Lucern by overhanging it: the feven deep-earthed rows were now the moft vivid and ftrongeft of all. June the 6th the clover fhowed for bloom before the Lucern. Rakes with longer and more diftant teeth than common, get Lucern up cleaner from dirt. In july, perceive that wet and cold check the growth much, and that it even turns yellow; but reviving and growing profligiouffly in fucceeding hot weather. Some unmowed plants did not flower till this month, though the Lucern and clover, cut as mentioned, began to blow on the 20th about two months afterwards, the former being now between two and three feet high. At this time it was mown again a fine crop, and in feptember afforded an inferior one; the feven rows prodigiouffly the ftrongeft. After the third crop the pafturage by no means contemptible; and a part fenced afforded good mowing till november. Towards the middle of that month broad-fhared the clover up, earthing the Lucern at the fame time with mould-boards, twenty-two inches wide at the extremities. A forward or backward fpring will make a month's difference in its advance.

The third fpring, a backward feafon, on the 16th and 17th of march, boxed a bufhel of tares an acre between the rows, after the ground had been loofened with the plough-fhare: it was afterwards harrowed down. April 1ft, being a fine growing time, the Lucern begins to poth. On the 19th fharp frofts have laid down the forward fhoots; it being unequal as ufual in the fpring. May 7th to the 9th filled up vacancies, planting two plants in a hole made with a hoe-pitcher, in a fine moift time. On the 20th began to mow for fwine, the beft being fifteen or fixteen inches high. June the 1ft began for the horfes. On the 11th where the Lucern is weakeft, the tares are a foot high, being mown together for the firft time. July the 9th began to cut it again; a fine crop of both, than which there is no better provender for horfes; it is alfo excellent for fwine. Seed fown in fome vacancies in the fpring now coming up. Hoed round the plants fet in may. Some of the ftrongeft Lucern had grown twenty-four inches in as many days; fo that though a backward fpring, four good crops might have been cut, yet it ftackens in its growth towards autumn.

Hence the great value of Lucern muft be acknowledged for fummer keep for teams in particular. Every one knows the precarioufnefs of annual graffes; but in Lucern the farmer has a proviflon for his cattle, nutritious, plentiful, early and fure. Still to enhance it, part of the plantation may be fown with tares; and part with white oats; in order to cut for the firft crop the part under which are the tares before they are advanced, for the fecond that with the oats, and thirdly that with the tares the fecond time. This laft will be a prodigious crop, and by matting together, powerfully fubdue the weeds. It muft be a very indifferent acre that will not keep a horfe the fummer, and a very good one will maintain two[a].

From fuch minutes of experiments much more real information is acquired than from volumes of theory.

Tranfplanting.

The method of tranfplanting Lucern invented by Monf. du Chateauvieux, and treated in an elegant manner by the late Mr. Harte, in his Eflays, is particularly applicable if the foil be dry only to the depth of three feet, and then is very wet, for upon fuch land Lucern, left to run down with its tap root, will foon perifh; or upon any foil of very great fertility: on fuch land the crop fhould be thin.

The feed, for tranfplanting, fhould be fown in the fpring, and early, in order to have fizeable plants for this cafe in auguft following. It is beft fown in drills, and the young plants may be much aflifted in their growth with a fmall hand-hoe, fuch as gardeners ufe among onions. The management of tranfplanted Lucern whilft growing muft be the fame as the drilled crop; only the firft feafon, that being fet in auguft, will only want one or two hoeings in the autumn[b].

Mr. Harte's experiments and directions are the following. In the end of march a common day-labourer was ordered to fow a pound and a half of Lucern feed, and to keep the ground clean from weeds. This fhould not be done in a very dry feafon, and efpecially in fevere parching winds. By the middle of auguft fome of the plants were eighteen inches high. Taking the advantage of a moift feafon in the beginning of September, which was however three weeks too late, the roots were dug up carefully, the long tap-roots were cut off eight, nine or ten inches below the crown of the plant, the ftalks were clipped about five inches above the crown, and the plants were thrown into a large veffel of water which ftood in the fhade. The fame day, with a dibble or fetting-ftick, filling every hole with water before the roots were put in, they were tranfplanted in rows, two feet afunder, and each plant fix inches apart in the rows. The roots were placed firmly in the ground, and two inches of the ftalks covered with mould. The rows were too narrow, and the plants too near, even though the ground was poor: nor was it foreſeen that horſe-hoe ploughing is five times more efficacious, as well as cheaper than hand-hoeing. After frequent experiments it appeared beft to make the lines three feet four inches diftant, and when the foil is good, to allow each plant a foot diftance in the lines: thus the hand-hoers will work more commodiouſly, and a little hoe-plough may be guided fafely up and down the intervals; the plants will be larger, more juicy and better tafted; for fpace and culture improve the herbage of plants. Nor will the quantity be leſſened by fuch thin planting fo much as might be imagined. A friend of Mr. Harte's having planted an acre in rows of two feet, the foil being extremely good, and the crop free from weeds, it foon appeared that the roots were too cloſe. Next autumn therefore he took up every alternate row and plant, and a freſh acre of land being properly prepared to

[a] Young's annals, 1. 314. [b] Id. 25. 89, &c.

receive them, he thus gained a new plantation at ſmall expenſe and trouble: and the ſecond acre, as was thought, bore a larger quantity of herbage than the firſt would have done, if it had continued without being thinned.

In ten days after tranſplanting, though a drought ſucceeded, ſome of the plants made ſhoots of three inches. In the ſpring it was found that out of four thouſand roots only thirty or forty periſhed. The labourer filled up the vacant ſpaces from the nurſery in about an hour; and in april moſt of the plants were nearly equal in ſize and ſtrength, of a deep juicy verdure, with few or no diſcoloured ſickly leaves. On the 8th of may ſixty ſtems were counted on one root, and the produce of ſome choſen plants weighed near half a pound at one cutting. Yet Lucern is in a progreſſive ſtate till the third ſummer after tranſplanting, and then Monſ. Duhamel aſſures us, that one flouriſhing plant will produce a pound of well-dryed hay; which muſt have weighed four pounds when it was green. This is much more than it ever yielded in England; here however many plants, the ſecond year, have produced near half a pound of hay each.

As an acre of Lucern thus managed will contain about twenty-ſix thouſand roots in two-feet rows, at ſix inches diſtance in the row, and conſequently half that number in four-feet rows, at a foot diſtance in the lines, how great will be the produce of four or five cuttings every year, allowing only a pound of green fodder, or a quarter of a pound of hay to each plant at every cutting; and that confeſſedly the moſt nouriſhing and palatable food that cattle can eat. Thus much is certain, among other advantages, that if a field be induſtriouſly hoed, ploughed in the intervals, and hand-weeded in the rows, for the firſt two or three years, it is almoſt certain, that ſcarcely a ſingle weed will be found among it.

The proper time for cutting Lucern is when the plants are fifteen or ſixteen inches high, at an average; for ſome plants will be higher, ſome lower, according to the circumſtances of health, ſpace, ſituation, &c.

The cuttings of the ſecond year of the tranſplanted Lucern were on may the 8th, june the 7th, july the 12th, auguſt the 20th and october the 1ſt.

In the third year it was cut five times, and ſix times in the fourth; which make ſixteen cuttings in three years. The ſixth cutting, however, if it be after the firſt week in october, is little more than nominal. In the laſt year, by the 9th of april, ſome of the plants were near ſeventeen inches high, at a time when no field in the neighbourhood had graſs of four inches height, five or ſix acres being taken together. The crop was cut twice, before any hay-making began in the country round, excepting in ſome few meadows lying near market towns.

Tranſplanted Lucern has two advantages over that which is drilled, and ſtill more over broad-caſt: firſt, that each root will ſtand at a proper diſtance from its neighbour, and receive its due proportion of nouriſhment: or if a few ſets chance to fail, they may be ſupplied from the nurſery, any moiſt day, from april to the middle of ſeptember: ſecondly, by cutting the tap-root, it is prevented from penetrating ten or twelve feet perpendicular into the ground, which it naturally does in three or four years, except it be obſtructed by a ſtratum of rock, or chilled at root by weeping ſprings, or find admiſſion into a bed of cold clay; in all which caſes the crop makes a poor appearance, or goes off all at once.

When Lucern becomes languid and diſcoloured, probably ſome inſect has attacked the root: in that caſe a dreſſing of ſoot is expedient.

Lucern ſhould never be grazed, the crown of the root being ſo ſweet, that cattle and eſpecially ſheep will often bite it too cloſe, and heavy beaſts will bruiſe it with their feet.

For the nurſery, ſixteen perches, with good management, may be ſufficient to furniſh ſets for an acre; but it will be more prudent to allow thirty perches, and four ounces of ſeed at leaſt to each perch; thus making allowances for accidents, and having a reſerve for deficiences in the plantation. The ſeed ſhould be ſown in the ſame manner as turneps, in moiſt weather. The ground for the plantation ſhould be well ploughed and harrowed, or if ſmall dug, and picked clean from weeds, roots, ſtones, &c.

Lucern for the nurſery is beſt ſown in april, but it may be ſown in may or any part of june, in warm moiſt weather. The late-ſown will not be fit to tranſplant in auguſt, but in april following. Thus there will be a choice of two ſeaſons for tranſplantation inſtead of one.

The plants ſhould be taken up from the nurſery, in a moiſt time, with a ſharp ſpade, and no more than can be tranſplanted before night.

The expenſe of preparing the ground, tranſplanting, and hoeing an acre, including nurſery and ſeed, will be 6l. 12s.

It will always be found moſt convenient to horſe-hoe the intervals the third day after each cutting; for by that time the new ſhoots will make the plants viſible, nor will any ſide branches ſtand in the plough's way. A man and one horſe, with a boy to lead him, will eaſily do an acre in a day. It will be proper alſo to hand-weed the lines once a year; and the larger weeds may be taken up expeditiouſly with the three-pronged ſpade. It is more adviſeable to cut Lucern with a rasp-hook than with a ſcythe. A boy may cut enough this way in an hour to feed four large horſes a whole day[1].

It is obvious to remark from this ſhort abſtract of a very diffuſive account, and eulogium of tranſplanted Lucern, drawn up with much elegance, learning and claſſical alluſion by the late Rev. Mr. Harte, that among many excellent obſervations, there is much theory, and ſome miſtakes. Theſe are remarked incidentally in the following very ſenſible eſſay on the culture of Lucern by tranſplantation, by a writer under the ſignature of Mago, in the fourth volume of Muſeum Ruſticum.

On the 17th of july a field of three acres and a half then under ray-graſs and clover was ploughed deep, and ſown with turneps. By the 27th of march following, the field had been twice ploughed, the firſt time ten, and the laſt time near twelve inches deep, with the Rotheram plough and four horſes abreaſt: the ſoil light and ſtony, with a rock of gravel ten or twelve inches deep, and had never before been ploughed above ſix or ſeven inches deep.

The field was ſown with Poland oats, and about twenty-eight rods were laid out in beds four feet wide, which were ſown with Lucern ſeed broad-caſt, as cabbages are ſown in ſeed-beds; except one bed, which was ſown in drills, at ſix inches diſtance, and half an inch deep. This bed afforded much the greateſt quantity and the fineſt plants, and was kept clean with more eaſe and at leſs expenſe. The drills were covered with care, by the back of a rake. By the middle of auguſt the plants were moſtly in bloom, when they were mown and given to horſes and cows.

The oats being got in, the field was deep ploughed again. A ſeaſon of rain was waited for, which did not arrive till the 15th and 16th of ſeptember; when the field being firſt well harrowed, tranſplanting was began on the 17th and continued to the 23d. There was no difference between the firſt and laſt planted; it is however better to plant earlier if poſſible, and from the laſt week in auguſt to the middle of ſeptember ſeems a proper time. But filling each hole with water, making drills and half filling them with tea ſand or wood aſhes, and watering each plant, as Mr. Harte adviſes, is an endleſs and very expenſive work, that can be done only in a garden or very ſmall piece of ground.

The field was ploughed as level as poſſible, and then the ploughman went three times on each ſide the furrows, ſo that when harrowed acroſs they could hardly be diſcovered.

Two men with ſpades dug up the plants; and two women cut them, ſix or ſeven inches long in the root, and the tops to about two inches, taking them up one by one, in order to throw by the ſmall ones, and when they had about a dozen, cutting them at top and bottom

[1] Eſſay 2. 24, &c.

with one ſtroke of a ſharp knife at each end. Each woman had a tub by her ſide, filled within about ſix inches with water: as they cut the plants, they ſet them in the tub; and as they filled one tub, another was brought. This operation may be performed in the afternoon preceding the day of planting; the plants receiving benefit by ſtanding all night in water.

Men who are uſed to work in gardens will do the work of planting, in the ſame method as for Cabbages, with a dibble or planting ſtick. The rows were twenty inches apart, and the plants ſix inches in the lines; thus they may be kept clean with the ſingle cultivator of Monſ. du Chateauvieux; or if not, by drawing the alternate rows, they will ſtand at the diſtance preſcribed by him and Mr. Harte.

The latter of theſe gentlemen cut each plant with ſciſſars, which muſt be very tedious work; women however would handle a large pair, and cut a handful of plants with this inſtrument more readily than with a knife, and equally well. Mr. Harte alſo directs the plants to be cut to the length of nine or ten inches. Six or ſeven inches ſeems a much better length; for the ground being dug or ploughed twelve inches, the new roots will have five or ſix inches of well-looſened mould to ſtrike into, and if gravel or a ſtrong clay be near the ſurface, this muſt be a great advantage to the plants. Yet Mr. Harte ſays, that he cut his tap-roots too ſhort. The length in my opinion ſhould be fixed to the depth of the ſtaple. He alſo ſays, that he knew not how to manage a root that was very ſmall. The beſt way with ſuch is either to replant them in the nurſery if they are likely to be wanted, or if not, to throw them away.

Mr. Harte's calculation of the expenſe muſt throw a ſtumbling-block in the way of cultivating Lucern by tranſplanting, with moſt gentlemen and every farmer.

Mago calculates the expenſe on an acre as follows:

Digging ſixteen rods for the nurſery, at 3d	0	4	0
Seed three pounds, at 1s.	0	3	0
Weeding the nurſery twice with the three-inch hand-hoe	0	3	0
Ploughing	0	10	0
Tranſplanting	1	5	0
Hand-hoeing the plantation once in October, in dry weather	0	5	0
	£. 2	10	0

This is the full expenſe of making the plantation; yet the author of the Eſſays has worked it up to 6l. 12s. an acre.

If the ſpring-ploughing for barley or oats has been nine or ten inches deep, then a ploughing in autumn of twelve inches will be ſufficient, and cannot be charged at more than 10s. The trenching for the ſeed-beds may be done at leiſure time; ſo may the weeding of the nurſery, and the hand-hoeing of the plantation: then the real expenſe to the farmer will be only the ſeed and tranſplanting, or 1l. 8s. the acre. As to yearly charges, the plantation having been weeded in october, will lie very well till the end of february or the beginning of march: then, in dry weather, it may be hand-hoed again, at 5s. an acre; to which add four horſe-hoeings after each cutting at 11s. which makes 16s. an acre the annual charge. If Mr. Harte has let the charges too high, I much fear that Mago will be found to have let them too low.

Mr. Harte, enamoured with his favourite mode of tranſplantation, has certainly let the advantage of the broad-caſt culture much too low, when he ſays that it may laſt two years, only one crop being tolerable, and then muſt periſh. He muſt, as a traveller, have ſeen it do much better on the continent, where they practiſe no other method, and yet cut good crops for ſeveral years; but it is to be ſaid that in our moiſt climate the natural graſs and weeds will quickly overbear it, this is in ſome degree true: but yet if the land was clean, with good harrowing, it may laſt ſome years, perhaps ſeven or eight, and may be cut three or four times in a ſeaſon. To cut it four times indeed, the ſummer muſt be very favourable, and the laſt cutting will be late; nor will it be fit for cutting ſo ſoon as drilled or tranſplanted Lucern by a fortnight or more.

Early graſs.

The early ſpringing of Lucern is one of its moſt valuable properties. It may be depended on for much earlier food for ſheep and lambs than any graſs, and in rich warm land will yield a feeding of ſome account by the 20th of march, and continue very productive all april, which is the ſeaſon that the ſheep-maſter is more diſtreſſed than at any other time of the year. Sheep muſt not however be kept on it in ſuch numbers, and ſo long as to make them eat into the crown of the plants, which damages them much; they will not however do this whilſt there are any young ſhoots[1]. Mr. Harte mentions its being ſeventeen inches high on the 9th of april, when graſs was only four inches in height, and that it was cut twice before hay-making begun. Its earlineſs however in the ſpring is uncertain, and of courſe muſt depend upon the ſeaſon.

Number of Cuttings.

The proper time of cutting graſſes, and this with other leguminous plants, vulgarly called artificial graſſes, is when they are in full bloſſom; but this rule can only be followed for hay. The beſt uſe of Lucern is for ſoiling, and conſequently ſuch portions of it ſhould be ſet out for every day as will inſure a conſtant ſupply. Broad-caſt crops will not grow ſo faſt as thoſe which are drilled or tranſplanted, nor uſually yield more than three full growths in the ſix growing months, though the number aſſigned by Mr. Rocque is from three to five; a broad-caſt field therefore ſhould be parcelled out into ſixty diviſions, one to be cut every day. Drilled and tranſplanted crops, on good land, may be diſtributed into forty diviſions; but on very fine land, into thirty. By this means, which of courſe is to be varied as the cultivator finds the growth of his crop, he will always have a ſucceſſion ready for the ſcythe. The growth, on well cultivated rich land is very great, riſing to eighteen inches in thirty or forty days, and yielding five good cuttings between april and ſeptember[2].

The number of cuttings aſſigned by Columella is from four to ſix. In Catalonia it is cut from four to ſix or even ſeven times in a ſeaſon, though broad-caſt, all exceedingly thick and fine from two and a half to three feet in height when cut. But it is all watered every eight days. It would yield ten tons green on an acre at each cutting, and much of it a great deal more: if we ſuppoſe five cuttings or fifty tons an acre, this at 16s. a ton, is 40l. ſterling an acre. All crops in England ſink very much on compariſon with the vaſt and luxuriant burthens given by theſe watered grounds. The fineſt crops with us are drilled, but the eye is deceived in drilled crops in proportion to the diſtance of the rows, they appear thick when they are not really ſo; but in broad-caſt ones there is no deception; and thoſe immenſe burthens, through which the ſcythe is with difficulty moved, produce more at one cutting than two-feet drills would at three with the advantage of the herbage being finer and ſofter. But weeds in England and Catalonia are very different things: it well deſerves however, with us, a better trial than it has yet generally received. Rocque's broad-caſt crops on a rich garden ſoil, and Dr. Tanner's on a common turnep loam, were certainly encouraging[3]. Mr. Rocque ſays that his crop yielded near eight loads of hay on an acre.

I have ſeen many years together a crop drilled at twenty inches, in very indifferent land, cut ſix times every ſeaſon. And Dr. Anderſon informs us that he has cut a plant of Lucern ſix times in one ſeaſon, allowing it to be about twenty inches high before each cutting. He adds a very good remark, that this and other ſucculent plants, ſuch as Clover, may be conſumed moſt profitably as green fodder, becauſe as ſoon as they are cut, they quickly vegetate afreſh during ſummer; puſhing out very vigorous ſhoots which advance with great rapidity until the plant has attained nearly its full ſtature; after which it advances more ſlowly, till at length it becomes ſtationary, and is employed ſolely in maturing its fructification. It ſhould

[1] Young's Ann. 25. 96. [2] Id. ib. [3] Id. 8. 242.

be cut therefore when it approaches the ſtationary ſtate, and thus a much greater quantity of vegetable food will be produced, than if it were allowed to arrive at greater maturity before each cutting [r].

Lucern in ſmall quantities is ſown in gardens or plats where it is not convenient to turn in cattle to feed, in this caſe it muſt be cut as often as it is fit, which will be four, five or ſix times. But where cattle or ſheep can be turned on, it is generally better to feed it in ſpring and autumn, and to take only three cuttings, which will be good ones, provided it be not ſtocked ſo hard as to damage the bulb or crown of the root. If it be not fed, a middling unequal crop may be cut at the end of april or beginning of may, a ſecond about the firſt week in june, a third the ſecond week in july, a fourth the third week in auguſt, theſe three will be full crops, and a fifth at the end of ſeptember or beginning of october. This will generally be of little worth: and allowance muſt be made in the others for ſoil and ſeaſons. Mr. Harte mentions its being ſeventeen inches high on the 9th of april; I have ſeen it eighteen inches high on the firſt of may; and have known it hardly fit to cut the firſt time till the 27th of may, or even the 3d of june, in untowardly ſeaſons.

The reaping-hook or ſickle has been recommended for cutting it, in preference to the ſcythe: this may do where ſmall parcels are cultivated, and where the rows are forty inches aſunder; but in broad-caſt and cloſer-drilled Lucern, the ſcythe will do the work very well, and for leſs than a fourth of the expenſe. The Lucern ſhould be gathered into a one-horſe ſkeleton cart, and carried directly to the ſtable door, if it be for ſoiling horſes [s].

Duration.

Broad-caſt Lucern, with good management, may laſt ſeven or eight years. Columella and Palladius aſſign a life of ten years to it, and Pliny of thirty. Harte follows Columella. Monſ. du Chateauvieux gives it twenty years. Dr. Anderſon ſays that it laſts from twelve to twenty years in a favourable ſoil, but declines at laſt and dies away. Some aſſign eighteen or twenty years to it, and others only nine, or at moſt ten or twelve. Tull gives it a life of ſixty years. I do not know that it has ever been ſuffered to ſtand ſo long, but I have little doubt of its attaining that age, in a good ſoil, with proper management. In that caſe, aſſiſted with manure, I have not obſerved it to decline at any age. It does not attain its full vigour before the third, or according to others, not until the fifth year. This therefore is an objection to ſowing broad-caſt, which declines and even wears out very faſt after the ſeventh or eighth year.

Manuring.

Upon ſoils not of extraordinary fertility manure ſhould be occaſionally beſtowed upon this crop. Rotten dung is the beſt ſpread upon it early in winter; about twenty tons to an acre once in five or ſix years will be an ample allowance. If dung cannot be ſpared, ſoot or aſhes may be ſubſtituted [t].

Rocque recommends freſh ſtable dung to be laid on before the laſt ploughing, and ploughed in directly, as a preparation for ſowing.

Mr. Belcher directs pond mud, which has lain in a heap all ſummer, to be carried on in winter, after it has been well ſhaken by the froſt, fifteen hundred buſhels to the acre [u].

Mr. Harte recommends wood-aſhes, ſoot and lime as proper dreſſings for ſtiff, cold, clayey lands; for hot, ſhallow, brathy ground a compoſt of calcined clay, rotten dung, and pond-mud, long expoſed to ſun and froſts, and frequently turned; and for ground of a middle nature, malt-duſt. But as variations of ſoil are infinite, the compoſt-dunghill is the ſureſt aſſiſtant.

Dung is probably not one of the beſt manures for Lucern, except it be very old, and corrected with mixtures of a ſweet and fertilizing nature. For dung, if new, produces very luxuriant troubleſome weeds, and gives the crop a foul taſte. No dung, even of the beſt kind, muſt be ſpread on Lucern, till it be two years old at leaſt.

In moiſt grounds, eſpecially of a clayey caſt, preference ſhould be given to ſoot-dreſſings, then wood-aſhes ſecured from wet; next ſoap-boilers aſhes, coal-aſhes well fitted, charcoal-aſhes, and malt-duſt, ſown over the crop in the ſpring. Nor might the aſhes of lime be amiſs, nor lime itſelf mixed with mould under turf. The compoſt-dunghill thrice turned will ſpread almoſt as well as aſhes or ſoot, and will be very rich if it was moiſtened with brine, ſoap-ſuds, urine, &c.

With ſoot, aſhes, lime, &c. it is ſufficient to dreſs the rows only, becauſe they may be diſperſed very exactly, in the Berkſhire manner, with a peat-aſh ſpoon: but old dung, marl, compoſt-dreſſings, and other coarſer manures, ſhould be laid on the intervals as well as rows. Seven or eight buſhels of ſoot, mixed with ſand, or fifteen or ſixteen buſhels of wood-aſhes, or malt-duſt, will be ſufficient for an acre, ſown on the rows in moiſt weather, and renewed occaſionally. A labourer, with a peat-aſh ſpoon and ſeed-lip, may ſprinkle the rows of an acre, with ſoot or aſhes, in four or five hours [x].

Produce.

The produce of a Lucern crop, like that of all others, will depend on ſoil and management. They reckon in ſome parts of France that an acre of it produces more than ſix acres of good graſs, in others, as much as three only; and of hay, more than four tons. Some of their crops have riſen to nine tons. Mr. Wynn Baker mentions eight tons of hay to the Iriſh acre, which is five to the Engliſh meaſure. Others ſtate good crops at from twenty to forty tons, and twenty-five at an average. Duhamel mentions forty tons; and near Barcelona the produce of green fodder amounts to fifty tons on an acre in one ſeaſon. Rocque at Walham Green got eight loads an acre at five cuttings; and to the value of 35l. for ſoiling [y]. Mr. Harte, the firſt year after tranſplanting, had about eight tons from an acre. Mr. Baldwin had above fourteen tons from four cuttings. From an acre of broad-caſt, cut july the 15th, near five tons and a half, and two more crops were produced, from four acres and a half, ſeven years old, eighteen loads of hay were produced; and forty eight loads from another field of eleven acres [z].

The Rev. H. J. Cloſe, of Trimley in Suffolk, from ſomewhat more than half an acre of tranſplanted Lucern, the ſecond year, had eight tons two hundred and forty-one pounds of green food at five cuttings [a].

In the ſecond year after tranſplanting, when Lucern is not yet arrived at its full ſize, and at the firſt annual cutting, which is not the beſt, Mr. Harte weighed a parcel of the prime plants, which one with another were about a pound and quarter each. But ſuppoſing that every plant weighed only one quarter of a pound, and admitting we give up the ſixth cutting; then the produce is at leaſt ten tons of green Lucern on an acre. He calculates that an acre of tranſplanted Lucern, rightly managed, will bring in 5l. a year, free and clear from all expenſes, and that for a conſiderable tract of time [b].

Some perſons are of opinion that conſtant mowing exhauſts the crop; that however does not ſeem to be the caſe, but on the contrary agrees better with it than leaving it for a full crop of hay: yet even thus the advantage is conſiderable; for at three mowings a good acre will produce four tons of dry hay, and ſometimes even five; which, though it does not greatly exceed two cuttings of clover, yet conſidering that the latter is exhauſted in one year; and that Lucern laſts as long as you pleaſe, is a very great ſuperiority [c].

Application.

One of the beſt uſes to which Lucern can be applied green, is for ſoiling of horſes in the ſtable, no food agreeing better with them. Mr. Baldwin found that an acre would keep five horſes twenty-one days, at 90lb. a day to each horſe. Mr. Hall's broad-caſt

[r] Eſſays, 2. 26. [s] Young's Ann. 25. 97. [t] Id. 15. [u] Id. 4. 14.

[x] Eſſays, 2. 108. [y] Young's Ann. 25. 100. [z] Weſton's Tracts, 288. [a] Bath papers, 3. 61. [b] Eſſay, 2. 118. [c] Young's Ann. 25. 99.

crop paid him for seven years together 11l. 6s. an acre, by feeding horses at 2s. 6d. a week. Sir John Turner's, also broad-cast, kept five horses twenty-six weeks, which at 2s. is 13l. an acre. Mr. Butcher's at Chalk in Kent, a seven years old, maintained six horses to an acre, from may day to michaelmas. Mr. Reynold's broad-cast, kept four horses to an acre, from the middle of may to the middle of october; which at 2s. 6d. is 11l. 10s. an acre. Mr. Vernon's in Suſſex, drilled at two feet, kept five horses on an acre from the beginning of may till the middle of october, which at 2s. 6d. is 12l. 7s. 6d. Dr. Lloyd's of Puddletown, in drills at eighteen inches, maintained four horses to an acre eighteen weeks, which at 2s. 6d. is 9l. Mr. Anderſon's, drilled, in the fourth year, produced 9l. to an acre, and 5l. 9s. profit. The fifth year, 6l. 15s. profit. Mr. Clayton's broad-cast crop fed five horses on an acre, to the value of 9l.; and his drilled crop, four horses or 7l. 4s. Roque reckons that three quarters of an acre maintained three horses[a]. Mr. Belcher affirms, that it muſt be a very indifferent acre that will not keep a horſe the ſummer, and a very good one that will maintain two. He informs us however that Mr. Fitch kept four horſes from june to october, in working order, which cannot be ſet at leſs than 10l.[b]. Dr. Tanner's four acres, broad-caſt, was the chief ſupport of fifteen horſes and cows, from the end of april till michaelmas; after which it is fed down cloſe with ſheep till near Chriſtmas. Another year, five ſaddle horſes and four cows had nothing elſe to eat, and five coach-horſes were foiled with it daily[c]. Three acres of Mr. Johnſton's maintained eight horſes, from the 2d of may to the end of ſeptember, twenty-two weeks; which at 3s. comes to 26l. 8s.[d]. Mr. Dann values Lucern at 2l. 10s. an acre, clear of rent and every expenſe, mowed daily, and given to horſes and oxen, in the yard or ſtable[e]. Mr. Harte is of opinion, that a perſon muſt be an excellent manager, who can keep two good cart or coach horſes all the year round upon an acre of Lucern. For they will conſume near 80lb. of green food in a day and night, with ſome dry food beſides; and three tons and half of hay muſt be allotted for their winter ſupport during ſeven months. Now it will be difficult to maintain theſe two horſes with green Lucern, and to ſteal one cutting for hay. Nor will that hay be ſufficient, except it be mixed with ſtraw.

Horſes, ſays Mr. Harte from Monſ. Duhamel, fed with Lucern, except when employed in journies, or other hard work, will need neither oats nor beans. No food makes their coats ſo ſmooth and well coloured. But when a horſe firſt begins this ſucculent food, he ſhould have a ſmall quantity, as ten pounds, which ſhould be gradually increaſed for three weeks to twenty, thirty and perhaps forty pounds. It ſhould alſo be given in ſmall quantities, and ſlightly moiſtened with water, to ſuch horſes as are touched in their wind. It is too full of nouriſhment for hunters, and ſhould be given in leſs quantities to ſaddle horſes, than to coach and cart-horſes. When they are firſt fed with it in the ſpring, it may not be amiſs to take a little blood from them. And if thoſe who feed them can be perſuaded to give them a little and often, they will eat with more appetite, and make no waſte[f].

Lucern is excellent for foiling cows and young cattle in a farm yard, and for working oxen. A middle-ſized cow will eat from 90 to 110lb. of green Lucern in twenty-four hours. The ſame caution muſt be taken as with clover to prevent hoving or being blown. Mr. Baker found that an Iriſh acre would keep ſix cows one hundred and forty-five days; an Engliſh acre therefore would keep about four the ſame time. Sir Charles Turner kept four cows on a drilled acre[g]. Mr. Ray two cows through the whole ſummer. According to Mr. Belcher, Lucern affords very good butter before it flowers, but indifferent afterwards; the milk and cream however is never bad. To prevent its blowing bullocks he recommends it to be given them in racks with narrow ſtalls[h].

Varro and Cato tell us, that 20lb. of Lucern hay was allowed, at night only, to a working ox. Theſe and all ſorts of kine are very fond of it green; and in meadows ſown with clover or trefoil, they will run immediately to their feeder, whenever he comes near them with a burthen of Lucern. They always prefer it, when it has been cut a day or two, and remained in a dry ſhady place[i].

It has been doubted whether Lucern could be ſucceſsfully applied to fattening beaſts. Mr. Herbert however, of Mucruſs in Ireland, found that it fattened them admirably, and conſidered this as its higheſt value. Bomare ſays expreſsly that it will fatten them quickly[k]. Mr. Belcher fattened bullocks with Lucern on a hill farm[l]. Mr. Young remarks from an experiment of his own, that the effect of it in fattening is a proof of the great value of this plant; that its ſuperiority to tares is prodigious; and that when once eſtabliſhed it is far cheaper. The ſame ſecond growth which fed his beaſts three weeks, ſupported other cattle alſo, to the amount of feeding theſe ten a week and half more, which makes the value of this growth in beef ſomething better than 10l. A conſiderable return, as he obſerves, could we procure a full plant without ſacrificing a crop of corn[m].

Mr. Harte affirms, that cattle fed with Lucern may be made fit for ſale more expeditiouſly and earlier in the year, than they can be brought to market in any other common method; ſince it is very eaſy to begin fatting at the end of april, and to finiſh about the middle of harveſt, when meat bears an high price. Some caution ſhould be uſed at firſt: each beaſt ſhould loſe a little blood; and after a little time a large ox may have 40lb. of green Lucern each day, and perhaps more[n].

With reſpect to Sheep, there is ſome doubt whether they are not apt to damage the crown of the root, and thereby to prevent or at leaſt weaken the ſhoots that ſhould furniſh the ſucceeding cuttings. This ſhould be a caution not to let ſheep lie on Lucern too long. The firſt growth in the ſpring is of great uſe for ewes and lambs. Mr. Baldwin fattened Welſh wethers on it with great ſucceſs. It is beſt given them in racks. It may be fed after the laſt cutting, in dry weather with any kind of ſtock, in wet weather with ſheep. Certainly no plant is more acceptable to ſheep, or more nouriſhing for them than Lucern. Mr. Harte ſays that he knows from his own experience, that Sheep will eat it green or dry, when they refuſe every ſort of food beſides; and that there cannot be a better preſervative, when the rot begins to threaten, than to give them green Lucern mixed with a little buck-bean, or Lucern-hay moiſtened with freſh brine[o].

Of Swine there is no doubt but that Lucern is excellent food for them, and they do it no damage. Mr. Belcher remarks that they like it beſt young, and that if they or any other ſtock fed with it, be pounded and well littered, the crop may thus be made richly to manure itſelf[p]. Not biting cloſe like ſheep, Swine may eat it very ſafely, and a ſmall field near the farm-yard would be uſeful for this purpoſe. It is better however to foil them with it in the yard or ſty, on account of the great value of their dung[q].

Hay.

Lucern makes excellent hay. It ſhould not be ſtirred about much, that the leaf may be preſerved. Roque directs that it ſhould be mown for hay as ſoon as the bloom appears, or ſooner, that it ſhould lie in the swarth, and be turned as clover.

Mr. Harte informs us that on the continent it ſells at a much higher price than the beſt upland hay. He would have it cut with the ſtraw-cutter, and given to horſes mixed with other hay; or reſerved for ſick horſes and cattle. Monſ. du Chateauvieux aſſerts that 2lb. of chopped Lucern-hay are equivalent to a quartern of oats.

[a] Young's ann. 26. 100. 103, &c. and Tour.
[b] Young's ann. 1. 370. and 4. 30.
[c] Southern Tour, 60, 67. [d] Id. 346.
[e] Young's ann. 15. 559. [f] Eſſay 2. Sect. 12. p. 327.
[g] Young's ann. 25. 100. [h] Harte. Eſſay 2. 134. 136.
[i] Young's ann. 25. 102. [k] Id. 4. 36. [l] Id. 14. 154.
[m] Eſſay 2. 134. [n] Id. 137. [o] Young's ann. 1. 309.
[p] Id. 25. 100.

Hay in our moiſt climate can only be made in a dry ſeaſon, for if it lie long, it not only gets damaged itſelf, but materially injures the ſucceeding cutting. If it can be carried to an adjoining paſture, that is fed down cloſe, that ſeems to be the beſt method; though an expenſive and troubleſome one, if the quantity be conſiderable. It ſeems preferable however to another method which Mr. Harte recommends; namely, to leave intervals of ſix feet, between every pair of rows, whereon to make the hay: for in the judgment of moſt perſons his rows are too wide already. Senſible of the difficulties, he does not adviſe any one to attempt making any great quantities, eſpecially ſince it is ſo valuable in a green ſtate, and four tons of it ſhrink to one in drying. He directs much care and attention in making, as ſcarcely any perſon can be expected to give, and no perſon will get done by others: and in laying it up, he adviſes layers of wheat-ſtraw to be placed between layers of Lucern[1].

After all, Mago does not think Lucern more difficult to be made into hay than clover; and affirms, that with one quartern of oats any gentleman will be well ſatisfied with the condition of his horſes, even *coach-horſes*[2].

Saving Seed.

Mr. Miller, from his own experience, commends Engliſh ſeed in preference to foreign. Others ſay that the ſeed is not worth ſaving in England. Rocque directs it to be ſaved, not from the firſt, but from the ſecond growth. The difference between Lucern from Engliſh ſeed which Mr. Belcher raiſed himſelf, and that from French ſeed was amazing; the latter being prodigiouſly ſuperior, ſown the ſame day and on the ſame ſoil[3]. The home ſeed was larger, did not come up ſo ſoon by two days, and then not near ſo thick. Near a month after the foreign was much thicker and ſtronger. In June ſix plants of each were tranſplanted, and on auguſt the 27th the produce being weighed was nearly equal in both; whence it appears that the difference was entirely at ſtarting, and they were equal afterwards.

At preſent, ſays Mr. Belcher, there is far from any reaſon to think it worth while to ſave home-ſeed, more eſpecially as Mr. Harte ſays it is injurious to the plants, which however he did not perceive[4].

Mr. Harte ſays that he has raiſed Lucern ſeed with no great difficulty in England, but that he never could ſee a reaſon for preferring it to foreign ſeed; which will be better ripened than our own, and ſome advantage will reſult from change of ſeed. However he directs thoſe who chooſe to ſave their own ſeed, to take it from the third cutting, to cut off the tops of the ſeeding ſtalks with large horſe-ſciſſors or a ſmall ſickle, juſt after ſun-riſing; to dry the pods on a winnowing-ſheet, and to thraſh them out with a ſhort ſtick, in the ſame manner with clover, and to paſs them through a very fine ſieve. After the ſeed-branches are cut off, the remainder muſt be mown as uſual, and may ſerve as fodder for cart-horſes, and lean cattle[5].

Expenſes.

One main obſtruction to the more general culture of Lucern, has I apprehend been an idea of the great expenſe attending it. Mr. Harte's eſtimate is very high indeed, 6l. 12s. But his culture throughout is adapted entirely to a gentleman. Mago in the Muſeum Ruſticum has reduced the expenſe of the firſt year to 2l. 10s. and the annual charge to 16s.

The following is another caleulation of the expenſe attending the culture of an acre of Lucern, during the firſt year.

Rent, &c.	-	1	10 0
Two ſpring ploughings	-	0	18 0
Harrowings	-	0	2 6
Eight pounds of Seed	-	0	8 0
Drilling	-	0	2 6
Horſe-hoeing in autumn	-	0	2 6
Hand-hoeing in ditto	-	0	5 0
	l.	3	8 6

Second and ſucceeding years.

Rent, &c.	-	1	10 0
Four horſe-hoeings	-	0	10 2
Three hand-hoeings	-	0	12 0
Five mowings	-	0	12 6
Raking, loading and carting	-	0	12 6
Manuring	-	0	12 0
	l.	4	9 2

Or perhaps the expenſes may not be ſet too high at 5l. where the acre is well managed and highly cultivated. Great however as this expenſe is, the crop will anſwer exceedingly well[6].

Another eſtimate of the annual expenſe of an acre of Lucern is thus given by Arthur Young Eſq. in his Six weeks Tour through the Southern Counties.

Rent	-	1	10 0
One cleaning to each of four cuttings at 2s.	-	0	8 0
Four cuttings at 2s. 6d.	-	0	10 0
Hand-weeding and cleaning the rows	-	0	10 0
	l.	2	18 0

But here is nothing charged for four horſe-hoeings; nor for carrying and manuring. If theſe charges be added to the above ſum, this eſtimate will not differ materially from the other. We may preſume therefore that a fair crop of Lucern, will at leaſt pay cent per cent, when it is once eſtabliſhed.

Mr. Young however has obſerved very properly[7], that a plant like Lucern, ſown on well-cleaned land, and kept clean by hoeing afterward, is procured at an expenſe which is ſeldom calculated fairly. Beſides the expences ſtated above, a crop of corn on good land cannot be eſtimated at leſs than 5l. And to balance this, the produce the firſt year is very inconſiderable. The ſecond year muſt be very good, to pay its own charges, and the drawback of the preceding year: now a cultivation, which at the end of two years ſhall have paid nothing in profit, is not worth attention. If it can be got with corn, the caſe is different; and foreign Lucern is all ſown with corn.

When Lucern however is ſown broad-caſt, a ſmall crop of barley or oats may be obtained, ſufficient at leaſt to pay all expenſes, without much damaging the Lucern, if the ſeaſon be favourable. Between the rows of drilled or tranſplanted Lucern, any of the crops uſually drilled may be put in, as Beans, Cabbages, &c. Or Vetches may be ſown in the intervals. Or broad Clover may be mixed with broad-caſt Lucern, or ſown in the ſpaces of that which is drilled or tranſplanted. This practice may in ſome degree meet the above objection to the culture of this valuable plant, and render it worth the attention even of the farmer in point of profit as well as convenience. But even ſuppoſing Lucern not to be ſo profitable as its moſt ſanguine friends believe, and would perſuade us to do ſo; yet ſtill it may be convenient to have a ſmall quantity for ewes and lambs early in the ſpring, for feuling horſes occaſionally, and ſupplying the deficiencies of other foddering crops.

7. *Yellow Medick*, and *Variegated Medick.*

Yellow Medick is hardier than Lucern, roots ſtronger, grows in drier ſoils, yields abundance of fodder very nearly allied to Lucern in quality, and loſes leſs in drying. In the ſandy fields of Suffolk, on the fallows, the ſtrength of its roots defies the plough and the hungry ſheep[8]. If the ſtems are proſtrate, which Linnæus makes one of the ſpecific diſtinctions of Yellow Medick, it would be an objection to the culture of it, becauſe it could not eaſily be mowed. Single plants may have proſtrate ſtems, but when it comes to be cultivated in a thick crop, the ſtems will ſupport one another; and the caſe is the ſame with Trefoil (Medicago lupulina) and many other plants.

Thomas Le Blanc, Eſq. of Cavenham in Suffolk having been ſtruck with the luxuriance of the Yellow

[1] Eſſay 2. 153. [2] Mus. ruſt. 4. 313.
[3] Young's ann. 2. 64. [4] Id. 3. 440. [5] Eſſay 2. 192.
[6] Young's Ann. 8. 165. [7] Annals, 14. 334. note.
[8] Young's Agr. 6. 50. and 15. 278.

Medick in the pooreſt ſoils, determined to have the ſeed gathered, in order to cultivate it. Whilſt engaged in this purſuit, he happened to find the Variegated Medick, and obſerving it to be more luxuriant even than the yellow, it commanded his attention.

It is leſs erect, he ſays, and leſs ſucculent than Lucern; but more ſucculent, and much more luxuriant than the yellow Medick. The ſeed pods partake of the ſhape of each, being leſs twiſted than thoſe of Lucern, but more ſo than thoſe of Yellow Medick. The flowers are beautifully varied in every ſhade of blue and greeniſh yellow, and ſome are almoſt white. His reaſons for preferring it to Lucern are, that it is hardier in bearing cold, that from its habit of branching below the ſurface of the ground, and the ſhoots being much more numerous, it is not choaked by natural graſſes, and that for the ſame reaſon it will not be injured by being fed with ſheep, and that it grows ſpontaneouſly upon the pooreſt ſoils.

In 1783 he began with a ſingle plant, which he tranſplanted into his garden, the ſoil of which is a blowing ſand. In 1784 he gathered the ſeed of it, and in april 1785 he ſowed with it a bed conſiſting of five rows, thirty-nine feet long. The plants came up thick and ſtrong; ſome of them bloſſomed at the beginning of july in the ſame year, and meaſured above two feet in height. Although all the ſeeds were gathered from one plant, yet the flowers differed very much in colour; ſome being almoſt yellow, ſome almoſt white, and others purple of various ſhades. In auguſt the ſame year he took up the ſeedlings, ſix thouſand ſix hundred in number, and tranſplanted them. Some of them meaſured two feet and a half in height. Moſt of the roots were cut through with the ſpade; one which was pulled up meaſured two feet nine inches in length. He likewiſe dug up a few wild plants, which he divided into a great number of ſlips, every one of which grew.

In june 1786 he cut down the garden plant not yet in full bloſſom; it was above five feet high, and weighed four pounds and a half. September the 6th he cut it again when it was only beginning to flower, and it weighed twenty-ſix ounces. The 29th of auguſt he cut ſome plants for ſeed; much of it was loſt by lying on the ground, the ſeaſon being wet; much alſo was unripe, and many young ſhoots were in full bloſſom. The 4th of december the plants were not affected by the froſt: at the ſame time the ſhoots of Lucern were entirely deſtroyed.

In february 1787 he obſerved many healthy young plants, ſelf ſown, where he had ſaved ſeed the preceding year, ſome of them an inch and half high, which muſt have come up before winter, and have ſtood the froſt unhurt; the ſituation indeed was ſheltered. At the end of february Le Blanc's Medick was not ſo forward as Lucern. A few days afterwards, both were equally cut off by the eaſterly winds. In december, he allotted for farther experiments, a piece of very poor ſandy land, containing five roods; it had borne Saintfoin, which was quite worn out; and he had juſt taken from it a crop of carrots: the ground was by no means ſo clean from couch-graſs as it ought to have been: the ſubſoil ſand, and to a great depth. A bottom of chalk would probably be more favourable to it.

On the 17th of december he tranſplanted ſome roots which meaſured four inches in circumference. The 19th he tranſplanted a bed of ſeedlings out of the garden, fine ſtrong plants, they had been ſown the beginning of april, and had been cut down when in full flower. They were ſet in rows, twelve inches aſunder.

In 1788 at the beginning of april, upon the ſame piece of land, he ſowed the ſeed ſaved laſt year, in drills twelve inches aſunder; and in the midſt of it four rows of Lucern ſeed, at the ſame diſtances, in order to aſcertain their comparative value. He mowed the crop this firſt year to feed weaned calves: the food was good, but the produce trifling.

In june 1789 Le Blanc's Medick was in bloſſom before the Lucern, and much fuller of flower. Both the tranſplanted and ſown flowered luxuriantly: he ſaved it for ſeed, but it produced a very ſmall quantity: in november he dreſſed it with aſhes.

May the 26th 1790, he cut a ſquare yard of Lucern, and an equal meaſure of the Medick adjoining; the Lucern was talleſt, and appeared the larger bundle, but upon weighing them, the Lucern was three pounds three quarters, the Medick four pounds and a quarter. The crop of Medick was very fine, and had the appearance of having been ſown broad-caſt, the intervals being ſo filled up, that the drills could not be diſtinguiſhed, whereas the rows of the Lucern were very apparent.

The 2d of june he began to cut it for ſoiling eleven cart horſes, a large tumbrel load every day: it was not in flower, nor arrived at its full growth, but he cut it ſo early to prevent any graſs ſeeding in it. The five roods laſted the eleven horſes fourteen days: it was excellent food, and the horſe-keeper acknowledged it to be heartier than tares. The plants raiſed from ſeed are better than the tranſplanted ones.

He afterwards let it ſtand for ſeed, which being a very unequal crop, and ripening at different times, he gathered by hand, at the end of ſeptember and the firſt week in october: the quantity of it was very inconſiderable, and being very ſmall, it was troubleſome to threſh and clean it.

Mr. Young remarks upon this very ſatisfactory account of the introduction of a new plant into culture, that may bid fair to rival Lucern itſelf, that Mr. Le Blanc's farm at Cavenham being on a poor blowing ſand, he has very happily fixed on a plant which appears to thrive better on ſuch ſand than in richer ſoils. Mr. Young tried it in moiſt loams, worth 15s. an acre, but never could get the plants to do ſo well as on the pooreſt ſands[a].

8. *Hop-Medick.*

This plant has been much ſown of late years for ſheep feed in open fields, where it is a conſiderable improvement, firſt for the ſweet food, and then to help the land by ploughing it in getting a good crop of wheat after it on indifferent ſoils. Mr. Zappa of Milan, ſays that it likes deep ground, rich and expoſed to the ſun, multiplies very well from the ſeed, grows chiefly in the ſpring, flowering at the beginning of may (in the Milaneſe) and ripening the ſeed at the beginning of june; it grows but little towards the end of ſummer and in autumn. It is cut with Poa trivialis, fifteen inches high, but is naturally procumbent. It is very nutritious, and increaſes milk in cattle[b]. It is cultivated under the name of *Trefoil* or *Black Nonſuch*, and it ſeems as if ſome of the *Trifolia* or genuine Trefoils would anſwer the purpoſe of the farmer as well as this Medick, which has uſurped the name, to the excluſion of all others.

The Earl of Orford obſerved two luxuriant patches of it left untouched in the month of may, in a field of various graſſes, eaten bare by a flock of ſheep indifferently kept[c]. He might have obſerved the ſame of White Dutch Clover, or any other plant, however valuable, when run up to ſeed. But ſheep prefer a ſhort ſweet bite of natural graſs, though almoſt bare, to any thing elſe.

The ſeed of this plant falls ſo readily, that great loſs enſues from moving it, and in threſhing the leaſt ſtroke clears it. It is a good way therefore to threſh it in the field on a cloth, which is moved to the ſeed, and not the ſeed to the cloth[d].]

9. *Sea Medick.*

This plant is propagated by ſeeds, ſown upon a warm border of dry ſoil in the ſpring, where the plants are deſigned to remain; when the plants are come up, two or three of them may be tranſplanted into ſmall pots, to be ſheltered in winter, becauſe in very ſevere froſt, thoſe which are in the open air are frequently deſtroyed; though it will endure the cold of our ordinary winters, in a dry ſoil and ſheltered ſituation. The remaining plants require only to be thinned and kept clean. It may alſo be increaſed by cuttings, planted in june or july in a ſhady border, covering

[a] Young's tour. 1. 277. [b] Id. 6. 49.
[c] Id. 16. 48. [d] Id. 20. 508.

them close with a glass to exclude the external air: they will take root in about six weeks, and may then be either planted in a warm border or in pots, and treated in the same way as the seedling plants.

10. *Variable Medick.*

Some of the varieties are common in flower-gardens among other annuals under the names of *Snails* and *Hedge-hogs*, from the singular form of their seed-vessels. They are propagated by seeds sown in the middle of april, where they are to remain; they require no culture but to be thinned, and kept clean.

[The variety called Heart Trefoil or Heart Clover, but more properly Heart Medick or Spotted Medick, is frequently very luxuriant among Lucern, Saintfoin and Trefoil, and might be cultivated for the same purpose as the latter, but on account of its hairiness and the roughness of the seeds, it should be cut or pastured when young.

MEDICAGO. See *Trifolium* and *Trigonella*.

MEDICK. See *Medicago*.

MEDIUM. See *Campanula* and *Convolvulus*.]

MEDLAR. See *Mespilus*.

MEDUSA'S HEAD. See *Euphorbia*.

[MEESIA. (*From David Meese, Gardener in the University of Franeker.*)

Lin. gen. Schreb. n. 1653. *Hedw. fund.* 2. 97.

Mnii species *Linn. Schmid. ic. t.* 57. *f.* 4.

Class. 24. 3. Cryptogamia Musci.

GENERIC CHARACTER.

Caps. oblong. *Peristome* double: *outer* with sixteen short blunt teeth; *inner* with as many sharp cilias, distinct or connected by network.

Males approaching the females, or discoid on a different plant.

MEESIA Gærtn. See *Walkera*.

MELAGO-CONI. See *Piper*.

MELALEUCA. (*From* μελας, *black, and* λευκος, *white.*)

Lin. gen. Reich. n. 978. *Schreb. n.* 839. *Gærtn. t.* 35. *Juss.* 323.

Class. 18. 4. Polyadelphia Polyandria.

Nat. order of *Myrti*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* turbinated, five-cleft, half superior.

COR. *Petals* five, rounded, inserted into the inner margin of the calyx.

STAM. *Filaments* many, very long, united in five bundles. *Anthers* incumbent.

PIST. *Germ* turbinate, fastened to the bottom of the calyx. *Style* one, filiform, upright. *Stigma* simple.

PER. *Capsule* subglobular, half-inferior, or half covered with the calyx, three-celled.

SEEDS oblong, when unripe linear-chaffy; when ripe usually winged.

ESSENTIAL CHARACTER.

Cal. five-cleft, half superior. *Pet.* five. *Filam.* many, very long, in five bodies. *Style* one. *Caps.* three-celled.

SPECIES.

1. Melaleuca Leucadendron. *Aromatic Melaleuca.*
Lin. syst. ed. 13. 582. *ed.* 14. 698. *Reich.* 3. 587. *ed.* 15. 736. *mant.* 105. *suppl.* 342. *a. Smith in Linn. transf.* 3. 274. *Lour. cochinch.* 468. *ed. Willd.* 573.
Myrtus Leucadendron. *Lin. spec.* 676.
Arbor alba. *Rumph. amb.* 2. 72. *t.* 16.
Leaves alternate lanceolate acuminate obliquely sickled five-nerved, branchlets and petioles smooth.
2. Melaleuca viridiflora. *Green-flowered Melaleuca.*
Gærtn. fruct. 1. 173. *Smith in Linn. transf.* 1. 275.
M. Leucadendron β. *Lin. suppl.* 342.
Leaves alternate elliptic-lanceolate coriaceous five-nerved, branchlets and petioles pubescent.
3. Melaleuca laurina. *Spurge-Laurel-leaved Melaleuca.*
Smith in Linn. transf. 3. 275.
Leaves alternate obovate-lanceolate one-nerved, peduncles axillary dichotomous pubescent.
4. Melaleuca thymeloides. *Thymelea-like Melaleuca.*
Smith in Linn. transf. 3. 275.
Leaves alternate ovate mucronate-pungent many-nerved, flowers lateral, calycine teeth striated mucronate.

5. Melaleuca ericifolia. *Heath-leaved Melaleuca.*
Smith in Linn. transf. 3. 276.
Leaves scattered or opposite linear nerveless subrecurved awnless, flowers lateral clustered towards the top of the branchlets.
6. Melaleuca nodosa. *Knotted Melaleuca.*
Smith in Linn. transf. 3. 276.
Metrosideros nodosa. *Gærtn. fruct.* 1. 172. *t.* 34. *f.* 6.
Leaves scattered linear mucronate-pungent straight, flowers glomerate towards the top of the branchlets.
7. Melaleuca armillaris. *Diosma-like Melaleuca.*
Smith in Linn. transf. 3. 277.
Metrosideros armillaris. *Gærtn. fruct.* 1. 171. *t.* 34. *f.* 5.
Leaves scattered linear mucronate recurved at top, flowers lateral, filaments very long linear radiate-multifid at top.
8. Melaleuca genistifolia. *Broom-leaved Melaleuca.*
Smith in Linn. transf. 3. 277.
Leaves scattered lanceolate mucronate three-nerved many-dotted, flowering-branchlets terminating loose, filaments radiate-multifid at top.
9. Melaleuca linarifolia. *Toadflax-leaved Melaleuca.*
Smith in Linn. transf. 3. 278.
Leaves opposite linear-lanceolate three-nerved many-dotted beneath, flowering-branchlets terminating loose, filaments pinnate.
10. Melaleuca thymifolia. *Thyme-leaved Melaleuca.*
Smith in Linn. transf. 3. 278.
Leaves opposite elliptic-lanceolate nerveless, flowering branchlets lateral very short few-flowered, filaments branched to the middle.
11. Melaleuca hypericifolia. *St. John's-wort-leaved Melaleuca.*
Smith in Linn. transf. 3. 279.
Leaves opposite elliptic-oblong one-nerved, flowers clustered, filaments very long linear radiate-multifid at top.
Melaleuca lucida. See Metrosideros diffusa.
Melaleuca villosa. See Metrosideros villosa.
Melaleuca scoparia. See Leptospermum scoparium.
Melaleuca virgata. See Leptospermum virgatum.
Having referred Leptospermum *to this genus, I have subjoin it, from Dr. Smith's botanical characters, in the third volume of the Linnean Transactions.*

LEPTOSPERMUM. (*From* λεπτος, *slender, and* σπερμα, *seed.*)

Forst. gen. t. 36. *f*—*l. Juss. gen.* 323. *Gærtn. t.* 35.

Class. 12. 1. Icosandria Monogynia.

Nat. order of *Myrti*.

ESSENTIAL CHARACTER.

Cal. five-cleft, half-superior. *Petals* five with claws, longer than the stamens. *Stigma* capitate. *Capf.* four or five-celled. *Seeds* angular.

SPECIES.

1. Leptospermum scoparium.
Forst. gen. n. 6. *Smith in Linn. transf.* 3. 262.
Melaleuca scoparia. *Lin. syst.* 699. *suppl.* 343. *Forst. fior. austral. n.* 210. *excl.* 78.
Philadelphus scoparius linifolius. *Ait. hort. kew.* 2. 156. 2. *a.*
Tea Plant. *Cook's voy.* 1. 100. *t.* 22.
β. Leptospermum squarrosum. *Gærtn. fruct.* 174. *t.* 35.
Philadelphus scoparius myrtifolius. *Ait. hort. kew.* 2. 156. 2. β.
Leaves ovate mucronate obsoletely three-nerved, calyxes smooth, teeth membranaceous coloured.
2. Leptospermum aromaticum.
Philadelphus aromaticus. *Ait. hort. kew.* 2. 156. 3.
Leaves linear-lanceolate nerveless quite entire, calycine segments coloured deciduous.
3. Leptospermum flavescens.
Smith in Linn. transf. 3. 262.
Leaves linear-lanceolate obtuse nerveless, calyxes smooth, teeth membranaceous coloured naked.
4. Leptospermum attenuatum.
Smith in Linn. transf. 3. 262.
Leaves lanceolate-linear acute three-nerved, calyxes silky-villose, teeth membranaceous coloured almost naked.

5. Lep-

5. Leptoſpermum lanigerum.
Smith in Linn. tranſ. 3. 263.
L. trinerve. *White's voy.* 229 *tc.*
Philadelphus laniger. *Ait. hort. kew.* 2. 156.
α. caneſcens. *Leaves oval, with canefcent villoſe hairs.*
β. piliger. *Leaves lanceolate-oblong hairy ſubreflex at top.*
Myrtus amboinenſis montana. *Rumph. amb.* 2. *t.* 18 ?
Leaves obovate-lanceolate three-nerved, calyxes ſilky villoſe, teeth leafy permanent.

6. Leptoſpermum parvifolium.
Smith in Linn. tranſ. 3. 263.
Leaves obovate nerveleſs, branchlets and calyxes hairy, teeth membranaceous coloured.

7. Leptoſpermum arachnoideum.
Smith in Linn. tranſ. 3. 263.
L. arachnoides. *Gærtn.* 1. 174. *t.* 35.
Leaves awl-ſhaped pungent, branchlets rough-haired, calyxes and teeth villoſe.

8. Leptoſpermum juniperinum.
Smith in Linn. tranſ. 3. 263.
Leaves linear-lanceolate pungent, branchlets ſilky, calyxes ſmooth, teeth membranaceous coloured naked.

9. Leptoſpermum baccatum.
Smith in Linn. tranſ. 3. 264.
Leaves linear-lanceolate pungent, branchlets rough-haired, calyxes ſmooth, teeth membranaceous coloured pubeſcent, capſule herried.

10. Leptoſpermum ambiguum.
Smith in Linn. tranſ. 3. 264.
Leaves linear recurved at the tip, calyxes ſmoothiſh, teeth leafy lanceolate naked, ſtamens longer than the corolla.

11. Leptoſpermum virgatum.
Forſt. gen. 48. *n.* 7.
Melaleuca virgata. *Lin. ſyſt.* 699. *ſuppl.* 343. *Forſt. ſer. auſtral. n.* 211.
Leaves oppoſite linear-lanceolate nerveleſs, umbels terminating.

DESCRIPTIONS, *&c.*

According to the obſervations of Dr. Smith, in his excellent treatiſe on the botanical characters of ſome plants of the natural order of Myrti, this genus is not naturally diſtinct from Metroſideros, the union of the filaments being all that diſtinguiſhes Melaleuca; for in the reſt of the fructification, as well as in habit, they agree. Accordingly the younger Linnæus, the two Forſters and Schreber unite them, and Juſſieu ſeems inclined to do ſo. But at the ſame time they confound with it the true genus of Leptoſpermum, than which nothing can be more diſtinct. Gærtner preſerves all three ſeparate; but ſeveral of his ſpecies of Metroſideros prove to be Melaleucæ.

1. This is a tree with a black trunk and white branches, whence the name Melaleuca. Leaves quite entire, almoſt veinleſs, petioled. Fructifications ſeſſile, agglutinated, ſcattered, below the leaves [a].

Loureiro deſcribes it as a middle-ſized tree, with a lofty flexuoſe trunk, and few, irregular, aſcending branches. Bark thick, pale, lamellated, ſeſſile and tough. Leaves flat, ſtraight, aſh-coloured, ſweet-ſmelling, hardiſh, ſcattered. Flowers white, ſeſſile, in long ſpikes towards the end, where it breaks out again into leaves. Bractes minute, ovate, acute. Calyx tubular, five-cleft; tube roundiſh, coriaceous, browniſh red; ſegments rounded, deciduous. Petals roundiſh, concave, longer than the calyx. Filaments about forty, in five or ſix bundles, unequal, placed upon the edge of the tube of the calyx. Anthers very ſmall, ovate. Germ three-lobed, ſurrounded by the calyx. Style equal to the ſtamens. Stigma thickiſh. Capſule roundiſh, opening at top, half-clothed with the truncated calyx, the ſegments having fallen off. Seeds many, very ſmall, compreſſed-angular.

Native of ſome parts of the Eaſt Indies and Cochinchina. From it is diſtilled the green aromatic oil called *Cajeput*, from *Caya Puti*, a white tree, which is the Malay name; whence Linnæus gave the name of Leucadendron to this ſpecies [b]. The oil has the taſte of Pepper-Mint, but ſtronger and colder, and a ſmell like turpentine; but it ſeldom comes to Europe unadulterated [c]. A decoction of the leaves is much uſed in Cochinchina, as a tonic, &c. The bark is very ſerviceable in caulking boats, covering houſes, &c [d].

2. This is unqueſtionably a diſtinct ſpecies from the preceding, with which the younger Linnæus confounded it. The leaves are much more thick and rigid, ſtraight, not falcated, nor ſo much pointed, of a lighter colour, with generally five, but ſometimes ſeven nerves. The footſtalks and youngeſt branches are downy, which is not the caſe in M. Leucadendron [e]. Gærtner remarks that the calyx is toothleſs. The flowers are pale yellowiſh green.

Native of New South Wales [f]. Introduced in 1775, by John Reinhold Forſter, L. L. D. [g]

3. This is nearly allied to M. ſuaveolens of Gærtner, with which its inflorescence and fructification almoſt entirely agree, but the leaves of that are much broader and elliptical. Thoſe of M. laurina have a great reſemblance to Daphne Laureola. Neither is this ſpecies at all aromatic, which M. ſuaveolens ſhould ſeem by its name to be. That comes from the hotter parts of New Holland, near Endeavour river. Specimens of this were brought to Sir Joſeph Banks from New South Wales by Governor Phillip.

4. This has altogether the habit of a Styphelia. The leaves are thick-ſet, twiſted, harſh, pungent and ſtriated, exactly as in ſeveral of that genus, and very ſlightly aromatic, ſo that it could hardly be taken for one of the Myrti, except by the fructification. The flowers are white, ſurrounding the lower part of the youngeſt branches in very ſhort cluſters. Calyx downy, with erect rigid ſpinous ſtriated permanent teeth. Petals ſmooth, membranous. Stamens twice as long as the calyx.

Gathered near Port Jackſon by Mr. David Burton.

5. The dried leaves taſte ſtrongly of coriander ſeeds. Flowers white, growing in ſhort cluſters round the branches, as in the following, but not quite ſo near the top. Its leaves differ widely from that ſpecies, being much ſmaller, not pungent nor rigid, but a little recurved. The young bark is of a ſilvery white.

6. Leaves numerous, ſcarcely an inch long, very narrow, though broader than thoſe of M. ericifolia, ſtiff and ſharp-pointed. Flowers ſmall, whitiſh, cluſtered round the tops of the youngeſt branches, ſo as to appear like little heads; but after flowering the branch is protruded beyond them, and the ripening capſules remain inveſting it in an annular manner. Gærtner's figure repreſents them in their moſt advanced ſtate, apparently bleached by expoſure to the air [h]. His deſcription is—Calyxes in the middle of the branchlets aggregate, ſuberoſe, ſpherical, toothleſs, very ſmooth, ſhining, ſnow-white, ſmalliſh. Capſules immerſed, three-celled.

7. This has much the habit of a *Dioſma*, in the leaves eſpecially, which are very diſtinctly marked, in a garden ſpecimen, with a row of reſinous ſpots on each ſide the midrib at the back; but theſe are leſs viſible in the wild plant. Flowers white, cluſtered about the lower part of the branches, in the form of a long ſpike. The footſtalk or claw of the united filaments is very long before it branches off, even thrice the length of the petals [i]. Calyx, according to Gærtner, ſubglobular, ſuberoſe, thick, five-toothed. Capſule immerſed, three-celled.

8. This is, in ſome reſpects, like M. nodoſa, but the leaves are lanceolate rather than linear, not above half ſo long as in that ſpecies, nor ſo rigid and pungent. The branches terminate in looſe ſpikes, from the top of which the branch is at length continued, as in the other ſpecies. Flowers ſeſſile, in alternate pairs, white. Claw of the ſtamens twice as long as the petals before the filaments branch off.—Sent from Port Jackſon by Mr. David Burton.

9. This is a large tree, the bark of which is very thick and ſpongy, ſerving the purpoſe of tinder. The branches are clothed with tapering glaucous leaves, thrice as long as in the laſt ſpecies, and from the ſummits ſpring ſeveral young branches, let with a ſeries

[a] Linn. mant. [b] Smith. [c] Loureiro. [d] Smith. [e] Id. [f] Hort. kew. [g] Smith. [h] Id.

of oppoſite ſeſſile ſolitary white flowers, not, as in that, in pairs ranged alternately, beyond which the branch is ſoon protruded. The eſſential character however of the ſpecies conſiſts in the filaments, which are very long, being pinnated, or ranged with ſtamens on each ſide, more or leſs regularly, from near the baſe to the ſummit. The leaves have a flavour like nutmeg.

10. Flowers purple, ranged along the branches of a year or two old, in little ſhort oppoſite ſpikes; which however ſoon prove to be real branches by the leaves ſhooting out at their ends, this lateral mode of inflorescence being common to almoſt the whole genus, M. laurina and ſquarroſa only having axillary branching flower-ſtalks; and no Melaleuca having been yet ſeen with terminating flowers.

The teeth of the calyx in this are permanent, and the whole of that part, as well as the back of the leaves, abounds with a fragrant eſſential oil, lodged in pellucid prominent dots. Mr. Fairbairn preſented flowering ſpecimens of this ſpecies to the Linnæan Society from Cheliea garden.

11. The flowers grow in a cylindrical form round the branches, and have ſome reſemblance to thoſe of *Metroſideros lanceolata*, commonly called *citrina*, occaſioned by the radiated crimſon filaments projecting in every direction. The claws of thoſe filaments are very long, linear, and of a dull yelloviſh hue like the petals.

It is the moſt beautiful of the genus, is plentiful in the Engliſh gardens, and was generally taken for an Hypericum, till it produced its elegant flowers. It grows in ſwampy grounds, and is found, like all here deſcribed, except the firſt, in New South Wales [a].

LEPTOSPERMUM.

Deſcription, &c.

When that part of the Dictionary was printed in which this genus ſhould regularly have ſtood, Dr. Smith's valuable obſervations on it were not publiſhed; they are therefore added here, rather than be wholly omitted, or reſerved for a diſtant appendix.

To this genus naturally belong many ſhrubs, which were referred by Dr. Solander to *Philadelphus*. Forſter confounded with them, under the name of *Leptoſpermum*, another moſt diſtinct genus, the *Metroſideros* of Banks and Solander. Gærtner firſt ſeparated all theſe, and really underſtood this genus, though he did not point out the genuine eſſential character, the capitate ſtigma, which, as well as the ſhortneſs of the ſtamens, clearly diſtinguiſhes it from *Metroſideros*. With *Philadelphus* it has no reſemblance in habit, nor ſcarcely any botanical characters in common. *Philadelphus* is clearly and ſtrikingly diſtinguiſhed by its more or leſs deeply quadrifid ſtyle, and ſimple ſtigmas, without adverting to the broad baſe of the petals, or the differences pointed out by Gærtner in the fruit.

The younger Linnæus and Schreber have confounded *Leptoſpermum* as well as *Metroſideros*, with *Melaleuca*, with which the latter only has any great natural affinity. Dr. George Forſter has fallen into the ſame error in his Prodromus.

Many of the ſpecies are to be ſeen in the Engliſh gardens, and ſeveral have often flowered. There are other ſpecies in the gardens, which Dr. Smith had not yet ſeen in ſufficient perfection to diſcriminate them [b].

1. This is a ſmall tree or ſhrub, ſometimes growing to a moderate height, and generally bare on the lower part, with a number of ſmall branches growing cloſe together towards the top; the younger ones ſilky. Leaves ſmall and pointed, like thoſe of the Myrtle; alternate, ſcattered, ſubſeſſile, quite entire, ſpreading, flat, even, dotted, dark green above, pale underneath. Flowers ſolitary, terminating, ſeſſile at the ends of the twigs, white, the ſize of thoſe of the Cherry. Bractes roundiſh, imbricate, concave, deciduous, ſurrounding and covering the calyx up to the middle. Calyx hemiſpherical: teeth ovate, concave, alternate with the petals, white within, red without, deciduous. Petals white, three times as long as the calyx. Filaments about twenty or twenty-four, ſhorter by half than the petals, inſerted in a ſingle row into the margin of the calyx. Anthers twin, roundiſh. Capſule hemiſpherical, umbilicated with the calyx, plano-convex above, excavated at top, five-ſtreaked, five-celled, five-valved, opening at top. Seeds many, very ſmall, linear, cylindric, extremely ſlender [c].

It grows commonly in dry places near the ſhores, in New Zealand. The underwood in Adventure bay, Van Diemen's land, chiefly conſiſts of this ſhrub.

The leaves were uſed by Captain Cook's ſhips crews as tea, whence they named it the Tea plant. The leaves have a very agreeable bitter flavour, with a pleaſant ſmell, when freſh; but loſe ſomething of both, when dry. If the infuſion was made ſtrong, it proved emetic to ſome, in the ſame manner as green tea. It was alſo uſed with ſpruce leaves, in equal quantity, to correct their aſtringency in brewing beer from them; and they rendered the beer exceedingly palatable [d].

This is the moſt commonly cultivated ſpecies in England, and flowers continually. Dr. Smith received it from the garden of Meſſrs. Lee and Kennedy, by the name of *Philadelphus floribundus*, along with three other ſpecimens, which he ſuſpects to be varieties of this. They were called *P. rubricaulis*, *P. rubriflorus*, and the original *P. aromaticus* [e].

This is called in the Kew catalogue *Philadelphus ſcoparius linifolius*, or narrow-leaved Philadelphus.

β. Is called there *Ph. ſcoparius myrtifolius*, or Myrtle-leaved Philadelphus. It was introduced into that garden in 1772, and flowers in June and July. This is a very ſlight variety, according to Dr. Smith, with ſhorter and broader leaves. It is however the *Lept. ſquarroſum* of Gærtner; of which he ſays the calyx is cloſely united with the capſule, and terminated by an unequal repand toothleſs margin: the capſules ſubglobular, flatted a little, umbilicate, five-celled, five-valved: the ſeeds linear, very numerous, ferruginous.

2. Dr. Smith, not having ſettled this ſpecies, omits it. It was obſerved in New Zealand by the Right Honorable Sir Joſeph Banks, and was introduced into the Kew garden in 1772. It flowers there in July and auguſt [f].

3. The flowers appear to be of a fine yellow in the dried ſpecimens.

4. The flowers ſeem to be white, and generally grow two together on ſhort flower-ſtalks, which are ſilky like the calyx.

5. This ſpecies varies with ſmooth and downy leaves; and the calyx is ſometimes merely ſilky, ſometimes clothed with long and thick projecting down.

Some varieties of it are in the gardens; eſpecially β of *Hort. Kew.* which has ſmall downy twiſted leaves, with a little recurved point; and is commonly called *Philadelphus pubeſcens*. It may be a diſtinct ſpecies [g].

Introduced in 1774, by Tobias Furneaux, Eſq. It flowers in June and July [h].

6. Of this Dr. Smith, having only one ſpecimen, and not having ſeen it alive, ſays no more than it is very diſtinct.

7. Of this alſo he has but a ſingle ſpecimen, which agrees well with Gærtner's figure, and the original ſpecimen at Sir Joſeph Banks's [i].

Capſule, according to Gærtner, half-inferior, covered as with a bark with the very thin woolly five-toothed calyx, globular, flatted a little, five-celled, five-valved. Receptacle a globular tubercle at the inner angle of each cell, faſtened to the axis of the fruit. Seeds very numerous, ſmall, oblong, thickening outwards, angular, ferruginous.

8. Dr. Smith has not had an opportunity of obſerving the flowers freſh. Mr. Fairbairn gave it him under the name of *Philadelphus dioſmifolius*.

9. This is a low depreſſed ſhrub. The flowers ſeem to be yellow, and by the appearance of the dried fruit it muſt be very pulpy.

10. This is the only ſpecies that has the ſtamens longer than the corolla, which is a character of *Metroſideros*; but as it differs from that genus, and agrees with *Leptoſpermum*, in the much more important

[a] Forſter, edcul. [b] Cook's 2d voy. 1. 99 to 101. & 3d 1. 108.
[c] Smith. [d] Hort. kew. [e] Smith. [f] Hort. kew.
[g] Smith. [h] Hort. kew.

character of the capitate ſtigma, as well as in habit, Dr. Smith does not heſitate to refer it to this. The flowers are white, and appeared magnificently in the garden of George Hibbert, Eſq.

Dr. Smith received all theſe ſpecies (except the ſecond) from New South Wales[1].

11. The under ſurface of the leaves is covered with dark reſinous ſpots[2].

Perhaps, ſays Dr. Smith, this ought to be added to the liſt of known ſpecies, but the two ſpecimens in the Linnæan herbarium are ſcarcely ſufficient to ſatisfy his doubts. The ſtamens ſeem to be regularly ten. If the fruit therefore be one-celled or two-celled, it may be an *Imbricaria*, with double the number of ſtamens. If the capſules ſhould be found to have three or four cells, it may be a decandrous *Baeckia*; with which genus its oppoſite leaves, as well as the ſize and appearance of the flowers agree; whereas the Leptoſpermums have alternate leaves. It muſt be left for future conſideration[3]. In the mean time it may ſtand here.

For the reaſon given above reſpecting Leptoſpermum, *I have added*

FABRICIA. (*So named from* Fabricius.)

Gærtn. t. 35.

Claſſ. 12. 1. Icoſandria Monogynia.

Nat. order of *Myrti* Juſſ.

ESSENTIAL CHARACTER.

Calyx five-cleft, half ſuperior. *Pet.* five, ſeſſile. *Stigma* capitate. *Capſ.* many-celled. *Seeds* winged.

SPECIES.

1. Fabricia myrtifolia.

Gærtn. fruct. 1. 175. *Smith in Linn. tranſ.* 3. 265. *Calycine teeth nearly orbicular, capſules ten-celled.*

2. Fabricia lævigata.

Gærtn. fruct. 1. 175. *Smith in Linn. tranſ.* 3. 265. *Leaves obovate, calycine teeth triangular, capſules eight-celled.*

DESCRIPTIONS, *&c.*

The numerous cells of the fruit, from eight to ten, and eſpecially the winged ſeeds, ſufficiently diſtinguiſh this genus from *Leptoſpermum*, to which it is next akin.

1. This ſpecies is twice as large as the ſecond in all its parts. Calyx hemiſpherical, with the teeth nearly orbicular. Petals rounded, concave, ſeſſile or without any claw. Capſule covered to the middle by the calyx, which becomes toothleſs, thick, aromatic; it is umbilicate, coriaceous, ten-celled, ten-valved. Receptacle central, globular, ten-grooved. Seed in each cell one or two, ſmall, compreſſed, brown, terminated by a large membranaceous wing. It was named *Philadelphus myrtifolius* by Solander.

2. Leaves alternate, obovate, ſmooth, very obſcurely three-nerved or five-nerved, of a light glaucous green. Teeth of the calyx triangular. Capſules axillary, ſeſſile, eight-celled. In each cell from five to eight ſmall winged ſeeds. Dr. Smith has received it from New South Wales, and it is plentiful in the gardens about London, but has never yet flowered.

PROPAGATION AND CULTURE.

All theſe plants muſt be kept in the dry Stove or glaſs-caſe, and may be increaſed by cuttings.

MELAMPODIUM. (*From* μελας, *black, and* πους, *a foot.*)

Lin. gen. n. 989. *Reich. n.* 1072. *Schreb. n.* 1338. *Gærtn. t.* 169. *Juſſ.* 188.

Claſſ. 19. 4. Syngeneſia Polygamia Neceſſaria.

Nat. order of *Compoſitæ Diſcoideæ. Corymbiferæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Common* five-leaved, flat: *leaflets* ſubovate, the length of the flower, ſpreading very much.

COR. *Compound* radiated. *Corollets* hermaphrodite in the diſk: *Female* about five in the ray.

Proper of the Hermaphrodite one-petalled, funnel-form, five-toothed, erect:—of the Female, ligulate, ovate, entire or three-toothed.

STAM. in the Hermaphrodites: *Filaments* five, very ſmall. *Anther* cylindric, tubular.

PIST. in the Hermaphrodites: *Germ* very ſmall. *Style* briſtle-ſhaped, the length of the corolla. *Stigma* obſolete.—In the Females: *Germ* ſubovate, compreſſed, with rugged ſides, the top flat and membranaceous. *Style* very ſhort.

PER. *Calyx* unchanged.

SEEDS in the Hermaphrodites none: in the Females ſolitary, obovate, compreſſed, four-cornered, prickly at the ſides, crowned with a heart-ſhaped, involuted, converging calycle.

REC. chaffy, conical: *chaffs* lanceolate, coloured, the length of the florets.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Recept.* chaffy, conical. *Down* one-leafed, involuted, converging.]

SPECIES.

1. Melampodium americanum.

Lin. ſpec. 1303. *ſyſt.* 790. *Reich.* 3. 923. *hort. cliff.* 425. *Gærtn. fruct.* 2. 436.

Calendula decumbens. *Mill. dict. n.* 9.

Caltha americana. *Houſt. reliqu.* 9. *t.* 21.

Stem upright, leaves ſublinear with one tooth on each ſide.

[2. Melampodium auſtrale.

Lin. ſpec. 1303. *ſyſt.* 790. *Reich.* 3. 923. *Loeſl. it.* 268.

Stem decumbent, leaves oval ſerrate.

3. Melampodium humile.

Swartz prodr. 114. *Ait. hort. kew.* 3. 269

Stem upright, leaves lyrate-toothed ſeſſile.

DESCRIPTIONS, *&c.*

1. Stems many, round, herbaceous, villoſe, procumbent. Leaves oppoſite, an inch and half long, and an inch broad, uſually divided into five ſegments, but ſometimes entire, hairy on both ſides, but chiefly at the back, where they are alſo hoary. Peduncles axillary, one-flowered. Calyx ſingle, compoſed of five broad mucronate hirſute ſegments. Corolla yellow. A crown of ſhortiſh ſeeds, covered with a rough bark ſucceeds radial florets[4].

Mr. Miller deſcribes the leaves as long, narrow, and indented on their edges in two or three places oppoſite to each other, ſo as to appear like three, five, or ſeven lobes. Peduncles long and naked, terminated by a ſingle yellow flower, about the ſize of the Field Daiſy. [Miller's deſcription of the leaves agrees with Houſtoun's figure: but Linneus's ſpecific character does not agree either with that or his deſcription.

According to Gærtner, there are about ten female florets in the ray. Receptacle flat: chaffs oblong, blunt, membranaceous, the inner ones gradually longer, ſo that the diſk of the flower appears to be conical. Seeds obovate, flatted on both ſides, brown; the back arched, ſtriated, the belly curved and narrowed to an edge, the ſides flat, rugged with tubercles. Crown cotyloid, ſtanding obliquely on the top of the ſeed, pale ſtraw-coloured, formed of a lamina, which when ripe becomes ſomewhat cartilaginous, one-leafed, obcordate; the edges are bent in ſo as to form two grooves within, or a cleft along the middle divided into two ſwelling lips.

Found by Houſtoun near La Vera Cruz, in ſandy ſoil, in the year 1731, flowering in the month of march, and bearing ripe ſeed[5], which he ſent to Mr. Miller, who raiſed the plants in Cheſſea garden.

2. Found by Loefling in South America. Forſkahl aſcribes hooked hairs to the ſeeds[6].

3. Found in Jamaica and St. Domingo by Swartz. Introduced in 1782, by Mr. Gilbert Alexander. It flowers from june to october[4].

Theſe are all annual plants.]

PROPAGATION AND CULTURE.

Sow the ſeeds in the ſpring on a hot-bed, and when the plants are fit to remove, put them into pots filled with light ſandy earth, and plunge them into the tanpit, ſhading them from the ſun, giving them air in warm weather, and treating them as other tender plants from the ſame countries.

Melampyro affinis ſ. cognata. See *Acanthus* and *Barleria.*

[1] Smith. [2] Linn. ſuppl. [3] Smith. [4] Houſt. reliqu. [5] Id. [6] Juſſieu. gen. [4] Hort. kew.

MELAMPYRUM. (Μελαμπυρον, *of Theophraſtus. From* μελας, *black, and* πυρος, *wheat.*)
Lin. gen n. 742. *Reich. n.* 800. *Schreb. n.* 999. *Tournef. t.* 73. *Juſſ.* 101. *Gærtn. t.* 58.
Claſſ. 14. 2. Didynamia Angioſpermia.
Nat. order of *Perſonatæ. Pediculares* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, four-cleft: diviſions ſlender, permanent.
COR. one-petalled, ringent. *Tube* oblong, recurved. *Border* compreſſed. *Upper lip* galeated, compreſſed, emarginate, the lateral little margins reflex. *Lower lip* flat, upright, the length of the upper, half-three-cleft equally, blunt, marked with two riſings in the middle.
STAM. *Filaments* four, awl-ſhaped, curved, concealed beneath the upper lip; two ſhorter. *Anthers* oblong.
PIST. *Germ* acuminate. *Style* ſimple, ſituation and length of the ſtamens. *Stigma* blunt.
PER. *Capſule* oblong, oblique, acuminate, compreſſed; upper margin convex; lower ſtraight; two-celled, two-valved, opening by the upper ſuture: partition contrary.
SEEDS ſolitary or one in each cell (according to Linnæus two) ovate, gibbous, elongated at the baſe.

ESSENTIAL CHARACTER.

Cal. four-cleft. *Cor.* upper lip compreſſed, with the edge folded back. *Capſ.* two-celled, oblique, opening on one ſide. *Seeds* two, gibbous.

SPECIES.

1. Melampyrum criſtatum. *Creſted Cow-wheat.*
Lin. ſpec. 842. *Juſſ.* 550. *Reich. 3.* 110. *fl. ſuec. n.* 545. *Hudſ. angl.* 269. *Wither. arr. ed.* 3. 544. *Engl. bot. t.* 41. *Relh. cant. n.* 456. *Hall. helv. n.* 311. *Crantz. auſtr.* 300. *Scop. carn. n.* 757. *Pall. it.* 1. 20. *Pollich pal. n.* 584. *Krock. ſilef. n.* 972. *Villars dauph.* 2. 414. *Kniph. cent.* 11. *n.* 71. *Riv. mon. t.* 81. 1. *Plnk. phyt. t.* 99. *f.* 2. *Bauh. biſt.* 3. 440. 2. *Raii biſt.* 775. 3. *ſyn.* *286. 1.
M. luteum anguſtifolium. *Bauh. pin.* 234.
M. lut. linariæ folio. *Bauh. prodr.* 112.
M. villoſum ſpica purpurea quadrata. *Mor. biſt. ſ.* 11. *t.* 23. *f.* 2.
Spikes quadrangular, bractes heart-ſhaped compact tooth-letted imbricate.
2. Melampyrum arvenſe. *Purple Cow-wheat.*
Lin. ſpec. 842. *Juſſ.* 550. *Reich.* 3. 111. *fl. ſuec. n.* 546. *Gærtn. fruct.* 1. 244. *Hudſ. angl.* 270. *Wither. arr. ed.* 3. 545. *Engl. bot. t.* 53. *Hall. helv. n.* 310. *Reyg. gen.* 1. 159. *n.* 1. *Crantz. auſtr.* 301. *Neck. gallob.* 265. *Pollich pal. n.* 585. *Fl. dan. t.* 911. *Krock. ſilef. n.* 973. *Villars dauph.* 2. 415. *Kniph. cent.* 11. *n.* 71. *Riv. mon. t.* 80.
M. purpuraſcente coma. *Bauh. pin.* 234. *Raii ſyn.* *286. 3. *Mor. biſt. ſ.* 11. *t.* 23. *f.* 1.
M. purpureum. *Ger. emac.* 90. *f.* 2.
M. muris ſ. Triticum vaccinum. *Bauh. biſt.* 3. 439. 2. *Raii biſt.* 774.
Triticum vaccinum. *Dod. pempt.* 541. 2. *Lob. elſ.* 33. 1. *ic.* 1. 37.
Cratægonon flore vario. *Park. theat.* 1327. 4.
Spikes conical looſe, bractes tooth-briſtled coloured.
3. Melampyrum nemoroſum. *Wood Cow-wheat.*
Lin. ſpec. 843. *Juſſ.* 550. *Reich.* 3. 111. *fl. ſuec. n.* 547. *Hall. helv. n.* 309. *Scop. carn. n.* 756. *Gært. ingr.* 97. *Reyg. gen.* 1. 159. *Crantz. auſtr.* 302. *Fl. dan. t.* 305. *Krock. ſilef. n.* 974. *Villars dauph.* 2. 415. *Kniph. cent.* 11. *n.* 72.
M. ſylvaticum. *Riv. mon. t.* 81. 2.
M. cæruleæ coma. *Bauh. pin.* 234. *Raii biſt.* 775. *Barrel. ic.* 769. 1. *Mor. biſt. ſ.* 11. *t.* 23. *f.* 5.
M. cæruleum. *Ger. emac.* 90. *f.* 3.
Parietaria ſylveſtris. 1. *Cluſ. biſt.* 2. 44.
Flowers directed the ſame way lateral, bractes toothed, the uppermoſt coloured barren, calyxes woolly.
4. Melampyrum pratenſe. *Meadow Cow-wheat.*
Lin. ſpec. 843. *Juſſ.* 550. *Reich.* 3. 112. *fl. ſuec. n.* 548. *lapp. n.* 240. *Gærtn. fruct.* 1. 244. *Hudſ. angl.* 270. *Wither. arr. ed.* 3. 545. *Engl. bot. t.* 113. *Lightf. ſcot.* 324. *Relh. cant. n.* 458. *Hall. helv. n.* 308. *Reyg. ged.* 1. 159. *Crantz. auſtr.* 304. *Neck. gallob.* 265. *Scop. carn. n.* 758. *Pollich pal. n.* 586. *Krock. ſilef. n.* 975. *Villars dauph.* 2. 416. *Kniph. cent.* 11. *n.* 73.
M. luteum latifolium. *Bauh. pin.* 234. *Beſl. eyſt. eſt. t.* 150. *f.* 2. *Mor. biſt. ſ.* 11. *t.* 23. *f.* 3.
M. latifolium flore albo, labio inferiore duabus maculis luteis diſtincto. *Tourn. par. Dillen. in Raii ſyn.* *286.
Cratægonon album. *Ger.* 84. 1, 2. *emac.* 91. 1.
C. vulgare. *Park. theat.* 1326. 1.
Parietaria ſylveſtris. *Beſl. eyſt. eſtiv.* 12. *t.* 2. *f.* 2. *Gærtn.*
Flowers directed the ſame way lateral, leaves in diſtant pairs, corollas cloſed.
5. Melampyrum ſylvaticum. *Yellow Cow-wheat.*
Lin. ſpec. 843. *Juſſ.* 550. *Reich.* 3. 112. *fl. ſuec. n.* 549. *lapp. n.* 240. *Hudſ. angl.* 270. *Wither. arr. ed.* 3. 546. *Lightf. ſcot.* 325. *Relh. cant. n.* 457. *Hall. helv. n.* 307. *Crantz. auſtr.* 303. *Scop. carn. n.* 759. *Gmel. ſub.* 190. *Fl. dan. t.* 145. *Krock. ſilef. n.* 976. *Villars dauph.* 2. 416. *Kniph. cent.* 9. *n.* 65.
M. ſylvaticum flore luteo, ſ. Satureia lutea ſylveſtris. *Bauh. biſt.* 3. 441. *Raii biſt.* 775. *ſyn.* *286. *biſt.* 775. 4.
Flowers directed the ſame way lateral, leaves in diſtant pairs, corollas gaping wide.

DESCRIPTIONS, *&c.*

1. The whole plant is nearly ſmooth; extremely branched; branches oppoſite. Leaves oppoſite, ſeſſile, linear but tapering to a point; thoſe beneath the branches reflex, on the branches parallel. Flowers in cloſely imbricated ſpikes, forming heads, terminating the ſtem and branches. Bracteal leaves large, purpliſh, finely toothed, the middle tooth lengthened into a long reflex horn, the upper ones with ſhort horns, but none without: theſe bractes being folded at the back, and cloſely preſſed together at the edges, form a kind of ſquare, with concave ſides, the horns being at the angles. Flowers reddiſh. Others ſay yellow, and white. According to Relhan, the helmet is purpliſh or white, with a yellow edge: Pollich aſcribes the ſame colours to it; and adds, that the beard or lower lip is yellowiſh within, and ſtreaked with purpliſh lines on the outſide. Villars ſays that the flowers are red or white. Krocker, that the corolla is variouſly coloured, but that the beard and inſide of the throat are commonly yellow, and that the whole varies to white. Mr. Woodward remarks, that he has never obſerved the flowers to be yellow, though he has ſeen thouſands of plants in Ripton and other woods in Huntingdonſhire. In the autumn they grow eighteen inches or two feet high; and where there are numbers together, the numerous diverging branches are ſo entangled that it is very difficult to extricate them[a]. It is common in the woods of Bedfordſhire, and in Madingley and Kingſton woods, Cambridgeſhire. Found among corn in Walton-field near Wakefield, Yorkſhire, by Dr. Richardſon. Braybrook wood, Newton and Yarwell in Northamptonſhire. Ray obſerved it in mountainous woods near Geneva; and it is found in many other parts of the continent. It flowers in June and July.

2. Stem upright, ſlightly hairy, branched. Leaves oppoſite, lanceolate, lengthened to a point, nearly ſeſſile, ſlightly downy. Flowers in an oval head, with each a long lanceolate purpliſh bractle, pinnatifid with ſetaceous teeth at the baſe, entire upwards[b]. Corolla yellow and duſky purple[c]. Capſule like that of the fourth ſpecies, but more gibbous, and when open bifid at top. Seeds larger by half, pale yellow, ſhining, with a thick, ſungoſe, white beak[d]. Theſe ſeeds, when ground with corn, give a bitterneſs and a grayiſh caſt to the bread, but do not render it unwholeſome[e].

This is a weed in corn in many parts of Europe, among wheat in the more ſouthern parts, and among

[a] Woodw. MS. [b] M. [c] Withering. [d] Gærtner. [e] Linn. ſuec.

rie in the northern. Found alſo in Japan. In England it is not very common. Mr. James Sherard found it near Lycham in Norfolk; Mr. Woodward and Mr. Crowe near Norwich. Ray did not know that it was a native of England, when he publiſhed his hiſtory.

3. Root ſmall. Stem a foot and half high, upright, brachiate, four-cornered. Leaves either entire and ovate-acuminate, or ſomewhat ſagittate, eared and toothed at the baſe, rough, hirſute beneath, with hiſpid edges; petiole ſhort, thick and hirſute; the branches and leaves are very diſtant. Flowers ſingle or two together in the axils of oppoſite braſtes, not forming a perfect ſpike. Bractes blue-violet, laciniated at the baſe or toothed, woolly underneath and not blue; the upper ones blue on both ſides. The plant is readily known by this *coma* or knot of barren bractes. Corolla herbaceous-yellow, with the origin of the throat and gape deeper yellow; the tube purple and curved inwards; lower lip trifid, more lengthened out than in the other ſpecies, orange-coloured. Anthers bearded at the baſe. Calyx coloured, woolly, on a ſhort petiole[†].

Linnæus ſeems ſtruck with the beauty of the plant, and the ſplendour of the flowers. "Coma foliorum "violacea, ſubtus lucente fulvo florum colore, lucos "umbroſos ita exhilarat hæc planta, ac ſi aulam ipſius "Floræ aut Auroræ intrares." He remarks alſo that it is not a native either of England, or of ſeveral provinces of Sweden[*]. It is frequent in Upland and Scania, Denmark, Switzerland, Carniola, Auſtria, Sileſia, Dauphiné, &c. Ray found it between Grenoble and the Grande Chartreuſe. It flowers in july and auguſt.

4. Leaves lanceolate, greatly tapering towards the point, all ſerrated, but the ſerratures extremely fine, and the edges of the leaves being rather turned back, they are not very readily ſeen. Stem feeble, cylindrical towards the bottom, four-cornered upwards. Calyx purpliſh without; ſegments with minute ſtiff briſtles along the edge; the two upper longer. Corolla full yellow, very much compreſſed; the notch in the upper lip but barely perceptible; lower lip with two orange-coloured riſing plaits; tube ſtraw-coloured. Filaments ſupporting what appears a ſingle anther, which is ovate, compreſſed, hairy at the edges, and opening at the front edge, diviſible into four portions, but as readily breaking in any other direction; after flowering ſeparating into two or four parts. Style corresponding to the bend of the upper lip, riſing over the anther, and preſenting its ſummit to the opening, whence the pollen eſcapes. Seed-veſſel a yellow glandular ſubſtance at the baſe on the fore part, doubled down, and ſo briſtle as not to admit being ſtraightened[‡]. It is thus deſcribed by Gærtner. Capſule ovate, attenuated into a blunt beak, compreſſed, with a longitudinal groove on both ſides, without brown, within ſilky white: partition very narrow, almoſt obſolete. Seed ſolitary, ovate-oblong, ſmooth, whitiſh, ſomewhat ſhining, elongated at bottom into an umbilical corneal ſpongy beak.

This ſpecies is thus accurately deſcribed by Pollich. Root hardiſh, whitiſh, fibrous. Stem upright, or decumbent, erect towards the top, obſcurely four-cornered, ſlightly pubeſcent, reddiſh green. Branches oppoſite. Leaves oppoſite, ſeſſile, linear-lanceolate, bluntiſh, quite entire, bright green and ſlightly pubeſcent above, netted underneath; the larger ones more than two inches long, and three lines wide, purpliſh at the baſe; the floral leaves ſmaller and a little reflex, with two or four ſharp toothlets at the baſe. Flowers ſolitary, ſubſeſſile by pairs in the axils of the leaves, chiefly on one ſide and forming a one ſided ſpike. Bractes a pair of leaves to each pair of flowers. Theſe are a little more than two lines in diameter, and almoſt eight lines in length. Calyx purpliſh-green, ſmooth; teeth lanceolate, acuminate, the upper ones ſomewhat reflex, and leſs deeply divided. Corolla yellow; tube compreſſed, triangular, white at the baſe and ſmooth; helmet blunt, ſlightly cleven at the top, the edge a little turned back, pubeſcent within; beard blunt with three blunt toothlets, and two ſmall ſmooth elevations at the throat. Anthers green and yellow, converging above, villoſe at the baſe and edge. Germ ovate, compreſſed ſmooth, with a roundiſh yellow nectary at the baſe of it. Style white, ſmooth, bent in at top, ſtanding out a little from the cleft of the helmet; ſtigma blunt, white. Pollich ſeems to regard this and the *ſylvaticum* as one ſpecies.

Mr. Woodward informs us, that our ſpecies ſo frequent in the woods of Norfolk and Suffolk, and other parts of the kingdom, in a clayey ſoil, was looked upon to be the *M. ſylvaticum* of Linnæus; but from a doubt which occurred to him in the ſpring of the year 1785, he was induced to believe it to be *M. pratenſe*, and that *ſylvaticum* was unknown in England, at leaſt in thoſe counties. This doubt was afterwards confirmed by Dr. Smith's aſſuring him, that the ſpecimen of M. pratenſe in the Linnean herbarium correſponded exactly with our plant. He believes however that the *ſylvaticum* of Linnæus is merely a variety; and ſuch was the opinion of Linnæus himſelf in his early writings. In Flora Lapponica 194. he gives *M. pratenſe*, which is ours, as the ſpecies, and *ſylvaticum* as the variety; thus diſtinguiſhing them: in the firſt, the ſtem is more upright, the leaves more upright and converging, the corolla white but becoming yellow towards the lips, the mouth or the lips cloſed, and it inhabits meadows and drier places: in the ſecond, the ſtem is more nodding, the leaves altogether ſpreading, the corolla entirely fulvous, and much ſhorter than in the preceding, the mouth open and gaping, and it inhabits woods and buſhy places.

If Melampyrum latifolium flore albo, labio inferiore duabus maculis luteis diſtincto. *Tourn. par. Raii ſyn. ed.* 3. *286. 2*. be *M. pratenſe*; and M. ſylvaticum flore luteo, &c. *Bauh. hiſt. Raii ſyn.* *286. 2. be *M. ſylvaticum*; then Dillenius regarded the former as a variety only of the latter.

Other authors diſtinguiſh them. Haller thus deſcribes his n. 308. which is Linneus's *Mel. pratenſe*. Stem weak, a long ſpan in height. Leaves very long lanceolate, the loweſt entire, the middle ones having a few large teeth at the baſe, the uppermoſt trifid, haſtate, with reflex hooks. Flowers in pairs, as in the next ſpecies, ſeſſile in the axils, all on one ſide. Corolla white; tube long, ſlender, wrinkled, widening in front. Gape, like that of a fiſh, converging; helmet yellow; pale at the edge; lips converging; two riſings divide the beard into three very ſhort teeth: theſe riſings are deep yellow. Anthers glued together. Lightfoot's and Relhan's deſcriptions are chiefly taken from Haller. According to Krocker, it differs from *ſylvaticum* in having a ſmaller calyx, of a purpliſh green colour, conſtantly marked with purple lines and ſmooth: corolla compreſſed, bent upwards, ſmooth, cloſed, variegated yellow and red, or more often entirely yellow, with a white tube; beard purple on the outſide, trifid. Anthers converging, yellowiſh green, villoſe. Leaves parallel to the horizon, varying in their inciſions; the lower ones on ſhort petioles, ligulate; the uppermoſt jagged, haſtate, beneath veined and ſlightly pubeſcent. Stem upright or decumbent, obſcurely four-cornered, pubeſcent, from ſix inches to a foot in length.

Dr. Stokes remarks, that the lower lip of the corolla is ſtraight, not bent downwards as in *M. ſylvaticum*. Dr. Withering adds, that *M. pratenſe* has been frequently miſtaken for *ſylvaticum*, probably becauſe it generally grows in woods, or on the ſkirts of them; but this is not the only inſtance in which too much attention to a trivial name has been the occaſion of error.

It is an obſervation of Linneus's, that where this plant abounds, the butter is yellow and uncommonly good; that kine are very fond of it, though they reject the *avenæ*, that ſheep and goats eat it, and that horſes and ſwine refuſe it; that the latter however are very fond of the ſeeds.

5. According to Linneus, this differs thus from the preceding. Stem more nodding, leaves fully ſpreading, corolla only half as long, entirely yellow, and not with the tube white, mouth or opening between the lips gaping wide. But *M. pratenſe* has ſometimes the whole

[†] Krocker. [*] Fl. ſuec. [‡] Withering.

whole of the corolla yellow, so that colour, as usual, must not be too much trusted. Stem upright or nodding, weak, branched, leafy. Leaves very entire, all undivided, very long, lanceolate'.

Haller describes the stem as upright or nodding, weak, branched and leafy. Leaves quite entire, very long, lanceolate. Flowers in pairs, sessile in the axils, all pointing the same way, the whole of a deep yellow, gaping wide, the beard more deeply trifid; compared with the leaves three times less than in the preceding. Fruit ovate-conical, curved inwards.

Relhan describes the stems as square, reddish, smooth: leaves linear-lanceolate, veined, quite entire, smooth, almost sessile. Bractes jagged. Flowers in pairs, sessile, remote. Calyx coloured. Corolla yellow, gaping a little; lower lip convex, three-toothed.

According to Villars, it is smaller in all its parts, and the leaves are very narrow and entire, the flowers also are smaller, paler and open, the calyx is square at the base.

Krocker says, that this has a very small root; is lower in stature; the stem roundish, a span or half a foot in length, branched, villose, angular; leaves quite entire, linear-lanceolate, yellowish green; peduncles hirsute; the calyx has four raised streaks; corollas shorter by half, gaping wide, yellow all over; helm not compressed but roundish, smooth on the outside, bearded with yellow hairs within, emarginate and folded back at the edge; by which marks it may easily be distinguished: lower lip flat, trifid, yellow with red lines. Anthers sagittate, like those of Euphrasia, greenish yellow, bearded on one side, toothed at bottom. Capsule ovate-compressed, triangular, two-celled, with many testiculate seeds.

Native of many parts of Europe in woods. Much rarer than the preceding in England, if it differs from it, or if the true *sylvaticum* of foreign authors be found with us. Found at Wick Cliffs by Mr. Swayne. Stechworth, White-wood, and Hadley-wood in Cambridgeshire. In the way from Taymouth to Lord Breadalbane's cascade, and about Finlarig at the head of Loch-Tay.

All the species are annual. Leaves opposite. Flowers opposite, accompanied by bractes, forming a terminating spike.]

PROPAGATION AND CULTURE.

These plants are seldom cultivated in gardens. Some of them indeed are common weeds, but not noxious in England. The second sort grows very plentifully among corn in Flanders and other parts of the continent, and is said to make the bread dark, and to affect the head in the same manner with Darnel; but Ray affirms that he has often eaten this bread, without perceiving any disagreeable taste in it, and that it was not accounted unwholesome by the country people; Tabernæmontanus also declares, that he has often eaten it without harm, and that the bread in which it is mixed is even not unpleasant. It is a delicious food for cattle, and might be cultivated for fattening oxen.

The seeds of all these plants should be sown in the autumn soon after they are ripe, otherwise they seldom grow the first year. When the plants come up, weed them in the spring whilst young. As soon as they begin to show their flowers, cattle may be turned in upon a spare hurdled off; for if they are permitted to run over the whole field, they would trample down the crop, and destroy a great part of it.

The third sort makes a pretty appearance with its purple tops during the months of july and august, and deserves a place in the flower garden among other annuals.

[MELAMPYRUM. See *Barleria, Hebenstreitia, Ranunculus, Selago.*

MELANDRIUM. See *Lychnis.*

MELANIUM. See *Lythrum* and *Viola.*

MELANOMPHALE. See *Ornithogalum.*

MELANOSCHOENUS. See *Schoenus.*]

MELANTHIUM. (*Melanthion of Theophrastus and Dioscorides. From* μελας, *black, and* ανθος, *a flower.*)

[*Lin. gen. n.* 454. *Reich. n.* 489. *Schreb. n.* 618. *Juss.* 47. *Gaert.* Wurmbea. *Thunb. gen.* 18. *Schreb. n.* 617.

Class. 6. 3. Hexandria Trigynia.

Nat. order of *Coronariæ. Juncі*, Juss.

GENERIC CHARACTER.

CAL. none, unless the corolla be so called.

COR. *Petals* six, ovate-oblong, spreading, with linear longer claws, permanent.

STAM. *Filaments* six, filiform, erect, the length of the corolla, into which they are inserted above the claws. *Anthers* globular.

PIST. *Germ* conical, striated. *Styles* three, distinct, curved. *Stigmas* blunt.

PER. *Capsule* ovate, three-cornered, three-grooved, three-celled, composed of three capsules united within.

SEEDS very many, compressed, half-ovate.

ESSENTIAL CHARACTER.

Cor. six-petalled. *Filam.* from the elongated claws of the corolla.

SPECIES.

1. Melanthium virginicum. *Virginian Melanthium.*
Lin. spec. 483. *Syst.* 348. *Reich.* 2. 126. *Gron. virg.* 59. *Pluk. amalth. t.* 434. *f.* 8. (Asphodelo affinis.)
Flowers panicled, petals with claws hirsute on the outside.

[2. Melanthium lætum. *Spear-leaved Melanthium.*
Ait. hort. kew. t. 488.
Raceme oblong, petals sessile, leaves smooth lanceolate-linear, stem-leaves remote.]

3. Melanthium sibiricum. *Siberian Melanthium.*
Lin. spec. 483. *Syst.* 349. *Reich.* 2. 127. *amoen.* 2. 349. *t.* 4. *f.* 11. *Gmel. sib.* 1. 45. *t.* 8? (Ornithogalum.)
Panicle very long, petals sessile, leaves linear acuminate.

4. Melanthium capense. *Spotted-flowered Melanthium.*
Lin. spec. 483. *Syst.* 349. *Reich.* 2. 127. *amoen.* 6. *obs.* 12. *p.* 87. *Thunb. prodr.* 67.
M. punctatum. *Mill. dict. v.* 3.
Petals dotted, leaves lanceolate corded.

[5. Melanthium indicum. *Indian Melanthium.*
Lin. syst. 349. *Reich.* 2. 127. *mant.* 226.
Petals linear-lanceolate, leaves linear.

6. Melanthium cochinchinense. *Cochinchinese Melanthium.*
Lour. cochinch. 216. *ed. Willd.* 268.
Petals sessile, leaves three-sided, flowers solitary axillary.

7. Melanthium viride. *Green-flowered Melanthium.*
Lin. syst. 349. *Suppl.* 213. *Thunb. prodr.* 67.
Leaves ovate-lanceolate, corolla reflex.

8. Melanthium ciliatum. *Fringe-leaved Melanthium.*
Lin. syst. 349. *Suppl.* 213. *Thunb. prodr.* 67.
Leaves ensiform corded, flowers in spikes, petals with claws.

9. Melanthium triquetrum. *Rush-leaved Melanthium.*
Lin. syst. 349. *Suppl.* 213. *Thunb. prodr.* 67.
Leaves three-cornered smooth, flowers in spikes.

10. Melanthium monopetalum. *One-petalled Melanthium.*
Lin. syst. 349. *Suppl.* 213.
M. spicatum. *Burm. cap.* 11. *Houtt. nat. hist.* 12. 429. *t.* 85. *f.* 2.
M. wurmbeum. *Thunb. prodr.* 67.
Wurmbea capensis. *Thunb. gen.* 1. 18. *Lin. syst.* 348. *Lin. transf.* 2. 231.
Corolla one-petalled, leaves corded lanceolate.]

DESCRIPTIONS, &c.

1. Flower-stalks from six to eight inches high, branching at top into three or four divisions, with two or three linear leaves below the flowers. Corolla of a dusky colour, rarely succeeded by seeds in England.

Native of Virginia and other parts of North America. [Cultivated by Mr. Miller in 1768. It flowers in june and july.

2. Native of North America. Introduced in 1770, by George W. Earl of Coventry. It flowers in june[a].

3. Root bulbous, oblong. Leaves radical, half a foot long, linear, acuminate, striated, attenuated into the petioles. Stem naked, a foot high, round, surrounded by a single, linear, short leaf. Flowers panicled: peduncles alternate, one-flowered, the lower

[1] Withering.

[a] Hort. kew.

peduncle longer, with alternate pedicele. Bractes lanceolate, ſeſſile, acuminate, at the baſe of each peduncle, coloured, very ſhort. Petals lanceolate, reflex, permanent, white. Nectary obconiate, bifid, faſtened to the baſe of the petals. Filaments awl-ſhaped, ſhorter by half than the corolla, and faſtened to it at the baſe of the nectary. Styles erect, awl-ſhaped. Capſule acuminate, with compreſſed valves. Seeds oblong, membranaceous, angular.

It differs from the firſt ſpecies in having the petals ſeſſile, and the filaments not rigid and permanent. The appearance however is quite the ſame with that [b]. Native of Siberia.

Willich is of opinion, that Gmelin's name belongs rather to Anthericum ramoſum.

4. Stem quite ſimple. Leaves embracing, ſheathing at bottom, the ſheath widening at top: there are four of them on the ſtem, the uppermoſt and loweſt very ſmall. Raceme terminating. Petals oval, with very ſhort claws. Stamens generally inſerted into the receptacle [c].

Native of the Cape of Good Hope. Introduced, according to the Kew Catalogue in 1788. Miller however ſeems to have cultivated it in 1768.

5. Root bulbous. Herb the ſtature of *Ornithogalum luteum*. Stem ſimple, upright, ſmooth and even. Stem-leaves three, longer than the ſtem. Peduncles terminating, commonly two; one one-flowered, the other two-flowered: floral leaves two, wider, ſhorter. Flowers ſhorter than the leaves, dark purple. Stamens and piſtils ſhorter than the corollas. Capſule triangular, ſmooth and even, the ſize of a Coffee ſeed.—Native of Tranquebar in the Eaſt Indies [d].

6. Stem ſix feet high, ſhrubby, round, ſlender, branched, procumbent, with ſhort ſcattered prickles. Root conſiſting of a bundle of oblong, fleſhy, reddiſh-brown tubers. Leaves linear, ſtellate-tern, quite entire, ſmooth, ſmalliſh, unequal. Flowers white, on one-flowered peduncles. Seeds roundiſh, very black, rugged, one or two of each only ripen.—Frequent in dry hedges in China and Cochinchina. It is allied to the preceding [e].

7. Stem half a foot high, leafy, ſubpubeſcent. Leaves alternate, ſeſſile, upright. Peduncles alternate, ſide-flowering, filiform, one-flowered, the length of the leaves. Flowers drooping. Petals narrow-lanceolate, purple, narrower at the baſe with the edge converging, and yellow. Stamens ſhort.—Found at the Cape of Good Hope by Thunberg [f] and Maſſon [g], and introduced by the latter in 1788 [h].

8. Leaves ſhorter than the ſtem. Petals white, lanceolate.—Found at the Cape of Good Hope by Thunberg.

9. Found at the Cape of Good Hope by Thunberg [i] and Maſſon. Introduced by the latter in 1788 [k].

10. Root globular, ſmooth. Stem none, or a finger's length, round, ſimple, ſheathed, ſtriated. Leaves three, alternate, ſheathing or cowled at the baſe, lanceolate-ſubulate, channelled, longer, diſtich, even, recurved. Spike an inch long, flexuoſe. Flowers alternate, ſomewhat remote, whitiſh, with the teeth black at the edge. It varies with white and purple corollas, with a black and purple edge, with a ſhorter and longer tube. It reſembles *M. capenſe*. The one-petalled corolla is not ſufficient to make this of a ſeparate genus, ſince the proportion of the tube varies in this and M. ſibiricum, and it may eaſily be divided by a needle.—Found at the Cape of Good Hope by Sparrmann [l], Thunberg and Maſſon. Introduced by the latter in 1788 [m].]

PROPAGATION AND CULTURE.

1, 2, 3. Plant the roots in a border of light earth, not too dry. They will produce their flowers, but ſeldom increaſe.

4, &c. Plant the roots in a border, covered in winter with a garden frame; and treat them in the ſame way as is directed for Ixia.

[a] Linn. amoen. [b] Idem. [c] Linn. mant. [d] Loureiro. [e] Linn. ſuppl. [f] Hort. kew. [g] Linn. ſuppl. [h] Hort. kew. [i] Linn. ſuppl. [k] Hort. kew. [l] Linn. ſuppl. [m] Hort. kew.

[MELANTHIUM. See *Veratrum*.]

[MELASMA. See *Gerardia*.]

MELASTOMA. (*So named by Burman from* μελας, *black, and* στομα, *a mouth; becauſe the pulp blackens children's mouths in eating the fruit.*)

Lin. gen. n. 544. *Juſſ.* 389. *Schreb. n.* 742. *Burm. Gaert. t.* 176. *Vahl.* 329. Acinodendron. *Edit. prior.* Fothergilla. *Aubl.* 175. Mavetta. *Aubl.* 176. Tibouchina. *Aubl.* 177? Tococa. *Aubl.* 174?

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Calycanthemæ*. *Melaſtomæ*. Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, ventricoſe at the baſe, four or five-cleft, permanent.

COR. *Petals* four or five, roundiſh, inſerted into the throat of the calyx.

STAM. *Filaments* eight or ten, inſerted into the calyx, ſhort. *Anthers* long, ſomewhat curved, upright, one-celled, gaping at top with an oblique hole. *Scales* two, very ſmall, diverging, annexed to each filament below the anther, the rudiment of another cell.

PIST. *Germ* roundiſh, in the belly of the calyx. *Style* ſubulate, ſtraight. *Stigma* blunt or headed.

PER. *Berry* two, three, four or five-celled, wrapped up in the calyx, roundiſh, crowned with a cylindric rim.

SEEDS very many, neſtling.

ESSENTIAL CHARACTER.

Cal. five-cleft, bell-ſhaped. *Petals* five, inſerted into the calyx. *Berry* five-celled, wrapped up in the calyx. (*Capſule* with a ſoft pulp, five-celled, opening in five parts at top. *G.*)

SPECIES.

1. Melaſtoma Acinodendron.
Lin. ſpec. 558. *ſyſt.* 403. *Reich.* 2. 284. *hort. cliff.* 162. 1. *Plak. mant. t.* 264. *f.* 2. (Acinodendron). *Plum. ic.* 142 *f.* 2. (Groſſularia).
Leaves toothletted with three nerves or thereabouts ovate acute.

2. Melaſtoma groſſularioides.
Lin. ſpec. 558. *ſyſt.* 403. *Reich.* 2. 285. *Plak. phyt. t.* 249. *f.* 4.
Leaves toothletted triple-nerved ovate acuminate.

3. Melaſtoma ſcabroſa.
Lin. ſpec. 558. *ſyſt.* 403. *Reich.* 2. 285. *Swartz obſ.* 174. *Brown. jam.* 219. 5. *t.* 24. *f.* 3.
Leaves triple-nerved toothletted ovate rugged hirſute, flowers axillary aggregate ſeſſile eight-flowered.

4. Melaſtoma hirta.
Lin. ſpec. 559. *ſyſt.* 404. *Reich.* 2. 285. *Swartz obſ.* 175. *Plak. phyt. t.* 264. *f.* 1.
Leaves toothletted five-nerved ovate-lanceolate, ſtem hiſpid.

[5. Melaſtoma fragilis.
Lin. ſyſt. 404. *ſuppl.* 236. *Vahl ecl.* 1. 44.
Leaves ſerrate five-nerved veined, racemes with ſeſſile flowers all directed one way.

6. Melaſtoma aſpera.
Lin. ſpec. 560. *ſyſt.* 404. *Reich.* 2. 286. *fl. zeyl. n.* 172. *Gaertn. fruct.* 2. 203. *Rumph. amb.* 4. 135. *t.* 71.
Katom-kadali. *Rheed. mal.* 4. 91. *t.* 43. (ſec. Gærtn.) *Raii hiſt.* 1493. *Burm. zeyl.* 154. *t.* 72. *ind.* 105.
Leaves quite entire three-nerved lanceolate rugged.]

7. Melaſtoma holoſericea.
Lin. ſpec. 559. *ſyſt.* 404. *Reich.* 2. 286. *hort. cliff.* 162. 2. *Swartz obſ.* 176. *Vahl ecl.* 1. 42? *Plak. mant. t.* 250. *f.* 2. (Acinodendrum). *Breyn. cent.* 3. *t.* 2. & *f.* in *p.* 4. (Arbor racemoſa) *Mayer. bruſ.* 117.
Leaves entire three-nerved ſeſſile ovate acute villoſe-ſilky, racemes bracteate, branches two-parted, ſtem acutely quadrangular.

[8. Melaſtoma ſtrigoſa.
Lin. ſyſt. 404. *ſuppl.* 236.
Leaves quite entire three-nerved ſtrigoſe ovate, flowers ſolitary.

9. Melaſtoma ſeſſilifolia.
Lin. ſpec. 558. *ſyſt.* 404. *Reich.* 2. 286. *Brown. jam.* 219. 1. 24. *f.* 1. 2. *Plak. phyt. t.* 249. *f.* 2.
Leaves quite entire triple-nerved ſpatulate ſeſſile tomentoſe underneath.]

10. Melastoma malabathrica.
Lin. spec. 559. *Jacq. amer.* 2. 286. *f.* 254. *n.* 171. *Gaertn. fruct.* 2. 201. *Burm. zeyl.* 155. *t.* 73. *ind.* 104. *Forst. for. austral. n.* 193. *Rheed. mal.* 6. 87. *t.* 42. (Kelladi). *Rumph. amb.* 4. 137. *t.* 73. (Fragarius niger).
Leaves quite entire five-nerved lanceolate-ovate rugged.
11. Melastoma levigata.
Lin. spec. 559. *Jacq. amer.* 2. 287. *Gaertn. fruct.* 2. 204. *Swartz obs.* 176. *Brown. jam.* 219. *t.* *Sloan. jam.* 2. 140. *Raii dendr.* 26. (Grossularia).
Leaves quite entire five-nerved ovate-oblong levigated acuminated, even about the edge.
12. Melastoma dilcolor.
Lin. spec. 560. *Jacq. amer.* 130. *t.* 84. *pict.* 65. *t.* 125. *Plum. ic.* 142. *f.* 1. (M. procera. *Swartz*). *Sloan. jam.* 2. 86. *t.* 198. *f.* 1. (Grossularia). *Pluk. phyt. t.* 264. *f.* 4. (Arbor americana).
Leaves quite entire five-nerved oblong acuminate smooth and even at the edge, racemes cymed, flowers eight-stamened.
13. Melastoma octandra.
Lin. spec. 560. *Jacq. amer.* 204. *Reich.* 2. 287. *Osb. it.* 213.
Leaves quite entire three-nerved ovate smooth hispid at the edge.
14. Melastoma grossa.
Lin. syst. 404. *Suppl.* 236.
Leaves quite entire five-nerved subcordate rugged.
15. Melastoma crispata.
Lin. spec. 560. *Jacq. amer.* 204. *Reich.* 2. 288. *Rumph. amb.* 5. 66. *t.* 35. (Punis murenarum).
Leaves quite entire five-nerved in fours, branches curled.

Species from Swartz.

* *Ten-stamened, with three-nerved leaves.*

16. Melastoma procera.
Swartz prodr. 68. *Plum. ic.* 142. *f.* 1.
Stem arborescent, leaves three-nerved somewhat toothletted smooth, raceme terminating spikes simple erect, calyxes truncated.]
17. Melastoma patens.
Swartz prodr. 68.
M. umbellata. *Mill. dict. n.* 10.
Leaves three-nerved, somewhat toothletted cordate hirsute, raceme terminating patulous, flowers distinct twice-stamened.
18. Melastoma rigida.
Swartz prodr. 69.
Leaves three-nerved somewhat toothletted ovate subcordate rigid rugged behind, panicles terminating ferruginous-hirsute.
19. Melastoma quadrangularis.
Swartz prodr. 69.
Leaves three-nerved entire ovate-lanceolate smooth, nerves coloured, branches quadrangular, raceme straight, terminating.
20. Melastoma scandens.
Swartz prodr. 69.
Leaves three-nerved toothletted ovate acute smooth, raceme terminating, spikes mostly pointing one way, stem climbing.
21. Melastoma montana.
Swartz prodr. 69.
Leaves three-nerved toothletted oblong acute smoothish, raceme terminating with pallulous spikes, petals retuse, calyx truncate.
22. Melastoma trinervia.
Swartz prodr. 69.
Leaves three-nerved without any marginal nerve, oblong attenuated at the base and tip entire, smooth on both sides thinnish, racemes almost simple terminating.
23. Melastoma ramiflora.
Swartz prodr. 69.
Leaves three-nerved entire ovate-lanceolate somewhat rugged, branches flower-bearing, flowers peduncled somewhat clustered.

** *Ten-stamened, with triple-nerved leaves.*

24. Melastoma prasina.
Swartz prodr. 69.
M. levigata. *Aubl. guian.*
Leaves triple-nerved quite entire broad lanceolate ovate, panicle terminating spreading very much.

*** *Ten-stamened, with five-nerved leaves.*

25. Melastoma argentea.
Swartz prodr. 70. *Sloan. jam.* 2. 84. *t.* 199. *f.* 1. (Grossularia).
Leaves five-nerved somewhat toothletted ovate smooth, tomentose and white underneath, panicles terminating spreading.
26. Melastoma elata.
Swartz prodr. 70.
Leaves five-nerved serrate-toothletted oblong coriaceous, ferruginous-tomentose underneath, panicles terminating spreading, flowers sessile.
27. Melastoma Tamonea.
Swartz prodr. 70.
Tamonea guianensis. *Aubl. guian.* 441. *t.* 175.
Grossulariæ fructu arbor maxima. *Sloan. jam.* 2. 84. *Pluk. phyt. t.* 264. *f.* 4.
Leaves five-nerved oblong-lanceolate ovate entire, tomentose-hoary underneath, racemes compound terminating, racemelets brachiate, bradles in pairs under the flowers.
28. Melastoma albicans.
Swartz prodr. 70.—an, holosericea. *Vahl enl.* 1. 42.
Leaves five-nerved entire ovate acute smooth above, tomentose whitish-ferruginous underneath, racemes terminating erect, flowers clustered sessile.
29. Melastoma impetiolaris.
Swartz prodr. 70.
Leaves five-nerved toothletted subsessile oblong acuminate coriaceous tomentose-ferruginous underneath, panicles terminating and axillary erect.
30. Melastoma splendens.
Swartz prodr. 70. *Plum. ic.* 140.
Leaves five-nerved entire oblong acuminate smooth on both sides, shining above, panicles terminating erect.
31. Melastoma coriacea.
Swartz prodr. 70.
Leaves five-nerved cartilaginous-toothletted ovate wrinkled smooth coriaceous, branches and petioles strigose, branches of the panicle four-cornered.
32. Melastoma strigillosa.
Swartz prodr. 71.
Leaves five-nerved somewhat toothletted subcordate acuminate, strigose-hoary above tomentose underneath, racemes axillary solitary, flowers peduncled clustered.

**** *Eight-stamened, with three-nerved leaves.*

33. Melastoma fascicularis.
Swartz prodr. 71.
Leaves three-nerved entire ovate acute rugged, branches flower-bearing, flowers shortly peduncled clustered.
34. Melastoma angustifolia.
Swartz prodr. 71.
Leaves three-nerved linear-lanceolate entire hoary underneath, branches wand-like, panicles terminating, flowers erect.
35. Melastoma Micranthus.
Swartz prodr. 71.
Leaves three-nerved toothletted oblong acute furrowed, racemes axillary reclining, flowers acuminate.
36. Melastoma capillaris.
Swartz prodr. 71.
Leaves three-nerved somewhat toothletted broad-lanceolate attenuated smooth, peduncles capillary three-flowered axillary.
37. Melastoma rubens.
Swartz prodr. 71. *Brown. jam.* 219. *n.* 8.
Leaves three-nerved toothletted ovate-lanceolate acuminate very smooth, branches and petiolet coloured, racime terminating, flowers clustered dioecous.
38. Melastoma purpurascens.
Swartz prodr. 71.
Leaves three-nerved entire oblong acute striated very smooth, racemes lateral patulous, flowers distinct.
39. Melastoma glabrata.
Swartz prodr. 71.
Leaves three-nerved somewhat toothletted ovate acute smooth coriaceous, peduncles terminating solitary one-flowered.

40. Melastoma alpina.
Swartz prodr. 73.
Leaves three-nerved entire ovate coriaceous smooth, peduncles simply trichotomous, flowers diffuse.

41. Melastoma hirsuta.
Swartz prodr. 72.
Leaves three-nerved somewhat toothletted broad-lanceolate attenuated hirsute, peduncles axillary three-flowered divaricated.

42. Melastoma hirtella.
Swartz prodr. 72.
Leaves three-nerved hispid at the edge, peduncles very short axillary three-flowered.

43. Melastoma microphylla.
Swartz prodr. 72.
Leaves three-nerved somewhat toothletted ovate obtuse, hispid above, tomentose underneath, peduncles trifid axillary.

44. Melastoma tetrandra.
Swartz prodr. 72.
Leaves three-nerved entire oblong acuminate emarginate at the base smooth somewhat convex, raceme erect terminating, flowers four-stamened.

***** *Eight-stamened, with triple-nerved leaves.*

45. Melastoma virgata.
Swartz prodr. 72.
Leaves triple-nerved entire ovate lanceolate acuminate very smooth, branches flower-bearing, racemes decussated diffused scattered.

46. Melastoma Æleagnoides.
Swartz prodr. 72.
Leaves triple-nerved entire broad-lanceolate whitish-tomentose underneath, peduncles terminating trichotomous, flowers solitary.

****** *Eight-stamened, with five-nerved leaves.*

47. Melastoma umbrosa.
Swartz prodr. 72.
Leaves five-nerved toothletted broad-ovate acuminate rough-haired on both sides, branchlets flower-bearing, racemes dichotomous spreading, branches and petioles hirsute.

48. Melastoma pilosa.
Swartz prodr. 72.
Leaves five-nerved toothletted oblong acute hirsute underneath, racemes lateral hirsute.

49. Melastoma hispida.
Swartz prodr. 72.
Leaves five-nerved somewhat toothletted ovate acute, strigose-hirsute above, netted-tomentose underneath, panicles terminating divaricated.

50. Melastoma aquatica.
Swartz prodr. 73. *Aubl. guian.* 430. *t.* 169.
Leaves five-nerved cordate acute crenulate, rough-haired above, even underneath, panicles terminating trichotomous diffused.

From Forster.

51. Melastoma glabra.
Forst. flor. austral. n. 194.
Leaves quite entire three-nerved elliptic-lanceolate rugged, calyxes cut round.

From Vahl.

52. Melastoma grandiflora.
Vahl symb. 3. 59. *Aubl. guian.* 414. *t.* 160.
Leaves cordate five-nerved serrulate, both they and the stem rough-haired, peduncles bifid, five stamens barren.

* *Twelve-stamened.*

53. Melastoma calyptrata.
Vahl ecl. 1. 40.
Leaves elliptic-lanceolate attenuated three-nerved smooth obsoletely toothletted, flowers panicled.

** *Ten-stamened, with three-nerved leaves.*

54. Melastoma aromatica.
Vahl ecl. 1. 41.
Tibouchina aspera. *Aubl. guian.* 445. *t.* 177.
Leaves ovate stalked, somewhat hairy underneath, nerves and stem strigose, calyxes with imbricate bractes at the base.

55. Melastoma crenata.
Vahl ecl. 1. 41.
Hispid, leaves subcordate oblong crenate acuminate, racemes axillary few-flowered the length of the petiole.

56. Melastoma decussata.
Vahl ecl. 1. 42.
M. racemosa. *Aubl. guian.* 406. *t.* 156?
Leaves lanceolate-oblong serrulate ciliate very smooth above, spikes racemed two-parted, flowers clustered.

*** *Ten-stamened, with five-nerved leaves.*

57. Melastoma elegans.
Vahl ecl. 1. 44. *Aubl. guian.* 427. *t.* 164.
Hispid, leaves cordate unequally crenate-toothed, racemes in the forkings and terminating few-flowered.

58. Melastoma psyllophora.
Vahl ecl. 1. 45.
Tococa guianensis. *Aubl. guian.* 437. *t.* 174.
Leaves ovate attenuated toothletted ciliate, petioles hispid shuddery at the tip.

59. Melastoma capitata.
Vahl ecl. 1. 45.
Leaves broad lanceolate quite entire, heads terminating involucred, branches four-cornered, filaments appendicled.

*** *Eight-stamened, with three-nerved leaves.*

60. Melastoma triflora.
Vahl. ecl. 1. 46.
Leaves elliptic-lanceolate quite entire, branches petioles and calyxes strigose, flowers axillary subpedunculed in threes.

**** *Eight-stamened, with triple-nerved leaves.*

61. Melastoma acuminata.
Vahl ecl. 1. 47.
Leaves ovate outwardly toothletted acuminate hoary underneath, corymbs terminating fastigiate.

62. Melastoma verticillata.
Vahl ecl. 1. 47.
Leaves ovate oblong attenuated toothletted villose rugged above, racemes axillary, flowers in whorls.

63. Melastoma lateriflora.
Vahl ecl. 1. 48.
Leaves obovate acuminate setaceous-subserrate smooth, peduncles intrafoliaceous aggregate one-flowered.

***** *Eight-stamened, with five-nerved leaves.*

64. Melastoma coccinea.
Vahl ecl. 1. 48.
Leaves elliptic-ovate acuminate smooth quite entire, thyrse terminating, pedicules and pedicels knotted hispid.

65. Melastoma sessiliflora.
Vahl ecl. 1. 49.
Villose-subtomentose, leaves lanceolate-ovate toothletted subpetioled, flowers axillary sessile in a sort of whorl.

From Loureiro.

66. Melastoma septemnervia.
Lour. cochinch. 273. *ed. Willd.* 335.
Leaves seven-nerved quite entire lanceolate-ovate hispid.

67. Melastoma dodecandra.
Lour. cochinch. 274. *ed. Willd.* 336.
Leaves five-nerved quite entire smooth, flowers twelve-stamened.

DESCRIPTIONS, *&c.*

These are trees or shrubs. Leaves opposite, strongly nerved at the back. Flowers oppositely corymbed, panicled or spiked, axillary and terminating, sometimes (as in n. 3. 12. 33 to 50. 60 to 65.) four-petalled and eight-stamened with a four-celled fruit, Species 53. and 67. have twelve stamens. Calyx in most of the species contracted above the fruit, and prominent beyond it, in some equal to the truncated fruit and not contracted. The petals in some are appendicled on one side. Germ, according to Linnæus, wrapped up in the calyx: according to Jacquin subinferior;—to Gærtner, superior; or as Aublet says, sometimes inferior, sometimes superior. Aublet mentions some with a three-celled, others with a two-celled fruit, some with a capsular fruit divisible into valves, some with a calyx two-bracted on the outside, some with an herbaceous stem more

allied to Rhexia, one with five barren ſtamens, one with a ten-toothed calyx. This genus has now been augmented ſo much by modern diſcoveries, that it requires farther examination, and perhaps to be diſtinguiſhed into ſeveral genera. Fothergilla of Aublet belongs to this genus[a]. Melaſtoma is diſtinguiſhed from Rhexia principally by the fruit, which in the former is a berry, in the latter a capſule. Number is no criterion in this genus. Theſe trees are chiefly natives of the Weſt Indies; ſome few of the Eaſt Indies.]

1. This becomes a large tree, having many crooked branches, covered with a brown bark. Leaves ſmooth, entire, above five inches long, and two broad in the middle, with three deep veins running through them; both ſides are of a light green, the edges are ſharply indented, and they end in acute points. The fruit grows in looſe ſpikes at the end of the branches, is thinly placed in the ſpikes, and of a violet colour.

[Native of South America. It is an obſcure ſpecies. Sloane's plant, aſſigned to this by Linneus, belongs to M. argentea of Swartz[b], n. 25.

2. This was found in Surinam by Bartſch[c]. Mr. Miller has one under this name, but he refers to the third ſpecies, which is not this plant.

3. Stem ſhrubby, ſcarcely a fathom in height, branched, hirſute: branches erect, round, hirſute. Leaves larger, ſubdecuſſated, ovate, attenuated, blunt, toothletted, triple-nerved, rugged with papillas which terminate in a hair and are excavated underneath, hirſute-tomentoſe. Petioles long, looſe, round, thick, hirſute. Flowers axillary, very much cluſtered, ſeſſile, extremely minute, whitiſh red, eight-ſtamened. Calyx four-cleft, purple, hirſute, with the hinder ſegments awl-ſhaped, minute. Petals four, ſcarcely larger than the calyx, lanceolate, acute, ſpreading, white. Filaments eight longer than the corolla, knee-jointed. Anthers linear, acute. Germ inferior, covered by the calyx. Style columnar, thickiſh. Stigma blunt. Berry minute, roundiſh, ſurrounded and crowned by the calyx, hirſute, rufous, four-celled.—Native of the cooler mountains of Jamaica, flowering in november and december[d].

4. Stem ſhrubby, a fathom in height, hiſpid. Branches upright, hirſute, round; branchlets ferruginous-hiſpid. Leaves ovate or ovate-lanceolate, acuminate, toothletted, five-nerved, wrinkled, ſoft, very hirſute. Petioles longiſh, round, hirſute. Flowers axillary and terminating, largiſh: pedunckes very ſhort, aggregate, (three or four) hirſute. Calyx five-cleft, hirſute with blood-red hairs: ſegments ovate, augmented behind with linear, acute, erect, hirſute ſegments. Petals five, ovate, white. Filaments ten, inſerted into the calyx within, ſhort. Anthers oblong, bifid. Germ ovate. Style thick, round. Stigma blunt, concave. Berry cloathed and crowned by the calyx, hirſute, blue, five-celled.

It varies with a ſix-cleft calyx, ſix petals, twelve ſtamens, and a ſix-celled berry.

Native of the woody mountains of Jamaica, flowering in ſpring and autumn[e].

5. This is a ſtiffiſh ſhrub. Leaves on ſhort petioles, ovate, five-nerved, even, ſerrate, ciliate, netted, very brittle. Raceme terminating, brachiate; racemelets trifid, floriferous from the baſe. Flowers directed one way, upright. Anthers in the bottom of the umbilicus, ten. Fruits larger, globular, like pear, ſmooth, with an excavated umbilicus—ſmaller, with the umbilicus cloſed by five ſcales.

Found at Surinam by Dalberg[f]. Probably alſo native of Mexico and Braſil, if it be Texanari of Hernandez, and Coa-ghiyryo of Margraaf, and Piſo, as Vahl ſuppoſes from conſulting Margraaf's ſpecimen.

6. In Herman's ſpecimen, the leaves of M. malabathrica are narrower, more ſmooth, three-nerved. Calyxes leſs hiſpid, collected into racemes, not terminating the ſtem, as in that[g]. Calyx cylindric-urceolate, obſoletely grooved, ſmooth. Capſule ovate, ſlightly narrowing upwards, five-celled, opening by five cleſts at top, the edges of the cleſts bent back, inſomuch that a careleſs obſerver might ſuppoſe there were ten apertures. Seeds very ſmall[h].—Native of the Eaſt Indies.

7. Stem ſhrubby, rough-haired, with membranaceous corners. Leaves cordate at the baſe, acuminate, whitiſh underneath, nine-nerved with three nerves thicker. Racemes oppoſite, ſubdivided, with a ſeſſile flower in the forkings; the laſt pedicels three-flowered. Corollas rather large. Calyx oblong, five-cleft: ſegments lanceolate, acute. Petals five, obovate roundiſh, blunt, ſpreading, longer than the ſegments of the calyx, violet-purple. Filaments ten, the length of the corolla, filiform, purple. Anthers very long, ſickle-ſhaped. Germ oblong. Style long, curved. Stigma thickiſh. Fruit a berry[i].

Swartz affirms that the plant thus deſcribed is the ſame with M. holoſericea in the Linnean herbarium. Vahl informs us that Linneus confounded two different ſpecies under this name; the firſt deſcribed by him from the ſpecimen in Clifford's herbarium, the ſecond received many years later, which from ſome reſemblance he took to be the ſame. The plant deſcribed by Vahl is the ſame with that which is deſcribed by Linneus in the Species Plantarum, and different from that which is deſcribed above from Swartz, and is in the Linnean herbarium.—Native of Jamaica and Braſil.

8. This is a ſhrub with the ſtem rugged from ſtrigæ preſſed cloſe to it. Leaves ſubpetioled, ſtrigoſe above, the nerves only ſtrigoſe underneath. Pedunckes oppoſite or terminating, one-flowered, drooping, generally two-leaved. Calyx very ſtrigoſe. Corolla purple.—Found in New Granada by Mutis[k].

9. Native of Jamaica.

10. This is a tree with rugged branches. Leaves petioled, broad-lanceolate, rugged above with whitiſh briſtles, beneath chiefly on the nerves, ſcarcely ſerrate on the edge except by ſtiffiſh briſtles as on the upper ſurface; five diſtinct nerves run from the baſe to the top, the outermoſt of which is near the edge. Calyxes at the tops of the branches, hiſpid with whitiſh briſtles[l]. Capſule cloathed with the urceolate calyx, rugged with rigid briſtles preſſed cloſe, ovate, five-celled, opening at top by five cleſts: cells ſtuffed with a ſoft dark blood-red pulp. Seeds numerous, ſmall, kidney form-globular, of a dun colour[m].—Native of the Eaſt Indies.

11. This is an upright ſhrub, the height of a man. Stem ſmooth and even. Branches upright, from round angular, ſmooth and even. Leaves petioled, oppoſite and decuſſated, lanceolate-ovate, ſmooth on both ſides, very thin, ſometimes wrinkled a little underneath, ſomewhat ſhining, deep green. Racemes terminating, compound, erect, panicled: branches oppoſite, decuſſated; branchlets alſo oppoſite: flowers cluſtered, on ſhort pedicels, white, ſmall. Calyx ſuperior, five-toothed: teeth blunt, ſhort. Petals five, inſerted below the teeth, ſubſeſſile, roundiſh, entire. Filaments ten, fixed to the calyx below the petals, longer than the corolla, knee-jointed. Anthers erect, perforated at the top. Germ roundiſh. Style erect, longer than the ſtamens. Stigma thickiſh, truncate, concave. Berry roundiſh, at firſt white, then blue and at length black, five-celled, with a very dark blue juice[n]. According to Gærtner, the fruit is globular, grooved, the ſize of the common red Currant. Seeds large in proportion to the ſize of the fruit, angular, lucid, yellowiſh with a broad dark ſpot at the umbilicus. Embryo ſubcylindric, ſubſpiral, making a turn and half.—Native of Jamaica.

12. This tree is about fifteen feet high, with ſubreclining, aſh-coloured branches, the younger ones tomentoſe. Leaves ſometimes very ſlightly crenate at the edge, green and ſmooth above, tomentoſe and yellowiſh underneath, petioled, the inner nerves uniting before they arrive at the baſe. Racemes branched, tomentoſe, terminating, in pairs. Flowers ſmall, void of ſcent, yellow. Calyx four-toothed. Petals four,

[a] Juſſieu. [b] Obſ. [c] Linn. ſpec. [d] Swartz obſ.
[e] Idem. [f] Linn. ſuppl. [g] Linn. zeyl.

[a] Gærtner. [b] Swartz. [c] Linn. ſuppl.
[d] Linn. zeyl. [e] Gærtner. [f] Swartz.

twice as long as the calyx. Germ roundiſh, tomentoſe, ſubinferior. Style longer than the ſtamens. Berry ſubglobular, four-celled. Seeds very ſmall, neſtling. Juice of the berry purple *.—Native of the Weſt Indies, flowering in march.

13. Native of the Eaſt Indies.

14. This is a tree with ſtiffiſh, round, hiſpid branches. Leaves cordate, ovate, ſtiffiſh with hairs, very thick and tomentoſe. Flowers at the ends of the branches, ſubſeſſile. Calyx ſtout, ſtrigoſe with hairs. Corolla a little hairy on the outſide.—Found in New Granada by Mutis †.

15. This ſhrub, when alone, grows erect, and throws out long branches, which lie on the next trees or ſhrubs; when it is next to a tree, it ſhoots right up, and fixes itſelf into the bark by fibres, at the ſame time throwing out its long lateral branches.—Native of Amboina ‡.

16 to 50. We have here a prodigious harveſt of new ſpecies found by Swartz in the Weſt Indies. N. 24. in Jamaica, Hiſpaniola, &c. N. 25, 27, 29, 32, 34, 40, 43, 46, 49, 50, are natives of the Weſt Indies in general. N. 30. of Hiſpaniola. N. 31. of Montſerrat. N. 47. of St. Chriſtophers: and all the reſt of Jamaica. I have to lament that the deſcriptions are not yet publiſhed, or at leaſt not arrived in England.

Aublet has twenty-one ſpecies under the name of Melaſtoma, beſides others under different names. Some of theſe are the ſame with thoſe of Swartz.

24. M. praſina is M. lævigata of Aublet, who thus deſcribes it. Trunk four inches in diameter, and five or ſix feet high, with a whitiſh, ſolid, compact wood. Branches and twigs from the top, long, four-cornered. Leaves pale green, ſlightly toothed at the edge, ending in a point, five-nerved; nerves red. Flowers very ſmall. Petals five, white. Filaments ten. Berry blue, ſmall, not very ſucculent, four or five-celled.—Native of the Weſt Indian iſlands and Guiana.

25. Trunk as thick as the human thigh, with a ruſſet-coloured bark almoſt ſmooth, very ſtraight, and twenty feet high. Branches and twigs oppoſite, ſquare. Leaves ſeſſile, a foot and half long, and half as broad in the middle, very green above, white beneath and ſmooth, having five large ribs. Flowers white §.

27. This is a middle-ſized tree, with a trunk four or five feet high, and four or five inches in diameter, covered with a gray bark. Wood white and briſtle. Branches long, ſubdivided, red, having four blunt corners. Leaves decuſſated, yelloviſh green above, ſlightly downy and tawny underneath: the largeſt are ſix or ſeven inches long, and three wide. Petiole an inch long, channelled above, convex beneath. Calyx five-toothed, red, with two ſmall leaves or ſcales at the baſe. Petals five, white, with a yellow or red claw. Filaments ten, yellow. Anthers two-celled, each of which opens by two valves, and at the baſe on the outſide is a gland. Berry not very ſucculent, three-celled.—Native of Cayenne and Guiana ‖.

28. Melaſtoma holoſericea of Vahl may probably be the ſame with M. albicans of Swartz.

50. Height about three feet. Stem four-cornered, with ruſſet hairs, throwing out very ſlender branches from the top. Leaves decuſſated, with a very ſhort ruſſet down above, ſmooth underneath, with five and ſometimes ſeven nerves. Petiole ſhort, villoſe, channelled above and convex beneath. Calyx divided into five ſharp lobes. Petals five, white. Filaments ten, on a red diſc, red. Anthers two-celled. Capſule five-celled, and opening at top by five valves.—Native of Cayenne ¶.

51. Native of the Society Iſles. Found in may 1774.

52. Branches herbaceous, four-cornered, rough-haired, as is the whole plant. Leaves two inches long, a little attenuated, five-nerved beſides thoſe on the edge, very ſeldom ſeven-nerved, ſoft on both ſides with abundance of diſtinct hairs. Petioles an inch long. Pedunceles axillary, oppoſite, longer than the leaf, once or twice biſid at top. Pedicels one-flowered; a flower in the forking ſhortly peduncled. A petioled leaf on each ſide at the diviſions of the peduncle, of the ſame ſtructure with the ſtem-leaves, but ſmaller. Flowering calyx oblong, with five linear-ſubulate ſegments, longer than the calyx itſelf, ſmooth within. Petals five with ſhort claws. Filaments ten, five at the bottom of the calyx, on one ſide longer, ſtronger, antheriferous, the length of the corolla, one knee-jointed longer than the reſt: five more ſlender, inſerted into the claws of the petals, ſhorter, without any anthers. Anthers ſtout, attenuated into an awl-ſhaped beak thickened at top. Style the length of the ſtamens. Capſule globular, ſmooth, the ſize of a pea, with a ſlender groove and two raiſed lines.—Cayenne, von Rohr **, and Aublet.

53. Branches four-cornered, ſmooth. Leaves oppoſite, from four to ſix inches long, ſpreading very much, ſharp at both ends, obſcurely toothed outwards, ſmooth on both ſides, having three beſides the marginal nerves. Petioles two inches long, ſubtriquetrous. Panicle terminating, erect, a palm in length: branches ſpreading, the loweſt four, the reſt oppoſite, ſmooth, trichotomous, jointed, as is alſo the common peduncle: joints a little widened at the top; branchlets divaricated, three-flowered. Flowers pedicelled, calyptred: calyptre conical, acute, tranſverſely deciduous. Calyx the ſize of Coriander ſeed, truncate, even, very ſmooth, greeniſh aſh-colour. Petals five, oblong, yellow. Stamens twelve or thirteen, the length of the corolla. Anthers linear, blunt at both ends, yellow on the back, pale at the edge, ſubemarginate at the baſe.—Found at Montſerrat by Ryan.

54. Branches roundiſh at bottom, obſcurely four-cornered at top, covered with ſtrigæ preſſed cloſe and ſubſerruginous, rugged: branchlets floriferous, oppoſite, four-cornered, ſtrigoſe. Leaves oppoſite, an inch long or a little more, acute, three-nerved, ſubtriplicate; the younger ones hairy on both ſides, thoſe which are more advanced ſhining above, very finely ſtriated, ſmooth except in the middle between the nerves and towards the edge; paler underneath, more rugged and hairy; hairs on the younger leaves broad at the baſe, ending in a briſtle, vaniſhing with age. Petiole very ſhort, channelled above, convex beneath, ſtrigoſe. Peduncles from the upper axils, ſolitary, oppoſite, at the ends of the branchlets and branches in threes; the lateral one-flowered, the middle three-flowered, the flowers on ſhort pedicels. Braſtes fix, imbricate, ovate, mucronate, ſhorter than the calyx, covered with ſtrigæ. Calyx oblong, covered with cloſe-preſſed ſtrigæ, broader and longer than in the reſt of the plant; ſegments five, awl-ſhaped, erect, ſmooth within. Petals five, one larger than the reſt, wide, rounded, purple. Stamens ten, below the inſertion of the petals.—Found in Guiana by von Rohr and Aublet.

55. Branches round, purpliſh, as are alſo the petioles, peduncles and calyxes rendered hiſpid by ruſeſcent hairs. Leaves oppoſite, two inches long, ſubhiſpid with yelloviſh hairs, eſpecially about the edge, cut out at the baſe into a ſmall ſinus, with a ſhort blunt point, having three nerves beſides the marginal ones, meeting below the point, paler underneath. Petiole ſhort, channelled above, keeled underneath. Racemes commonly ſolitary, but ſometimes in pairs, ſcarcely longer than the petiole, five-flowered: pedicels oppoſite, ſpreading very much, one-flowered. Calyx oblong: ſegments five, briſtle-ſhaped. Petals oblong. Stamens ten, the length of the corolla. Anthers linear, acute, bluntiſh at the baſe. Berry the ſize of black Pepper.—Native of South America.

56. Branches obſcurely four-cornered, ſmooth, above between the petioles hairy, even, purpliſh. Leaves oppoſite, remote, decuſſated, from two to three inches in length, and ſometimes a little longer, a little acuminate, three-nerved beſides thoſe at the edge; above even, veinleſs, purpliſh at the edge, beneath ſmooth, except that ruſeſcent hairs are ſcattered over the nerves, between the nerves very finely remotely and ſimply veined, veins commonly quite ſmooth, and purpliſh

* Jacquin. † Linn. ſuppl. ‡ Rumphius. § Sloane. ‖ Aublet. ¶ Idem. ** Vahl ſymb.

as are the nerves. Petioles very short, purplish, channelled above, roughish about the edge, but especially towards the tip. Racemes terminating with a branchlet growing out beyond, solitary, brachiate, four inches long. Common peduncles compressed-four-cornered, subvillose at top; partial opposite, very short, two-parted: a minute bracte under the ramifications and each flower. Flowers clustered, smooth, on the upper side of the branchlet. Calyx obsolete ly five-lobed, the size of Mustard seed. Petals five, wedge-form. Stamens ten, the length of the corolla. Anthers curved inwards, bright purple at the sides, whitish within and at the tip, brown on the back, a little longer than the petals. Style the length of the stamens.

Vahl regards the species figured by Aublet t. 156. as the same with this, but it is probably different. He also doubts whether M. ciliata, act. soc. hist. nat. par. 1. 109. be different from this.—Found in Cayenne by von Rohr.

57. Branches round, dichotomous, with a brown bark, those with the petioles, both sides of the leaves, peduncles and calyxes hispid with long distinct bristles; those on the branches thicker at the base, rufescent, spreading very much; those on the leaves and other parts pale yellow. Leaves two or three inches long, acuminate, bluntish; the teeth emarginate with a bristle, alternately a little larger, having five nerves besides those at the edge, the inner ones meeting below the point, simply veined between them. Petioles an inch long, grooved above. Peduncles at the forkings and end of the branches, solitary, sometimes in pairs, an inch and half long; pedicels opposite, commonly four, a little thicker towards the flower, spreading very much, short; the lowest often three-flowered, with the middle flower sessile. The five segments of the calyx bristle-shaped; when in fruit it is subovate. Petals five, oblong, short. Stamens ten, the length of the petals. Anthers pale at the edge, waved, awl-shaped, curved in at the base, a little longer than the filaments. Berries a little smaller than black Pepper.—Found by von Rohr and Aublet in Cayenne.

58. Branches purplish, alternately compressed towards the top, the angles hispid with long spreading purple bristles, the sides smooth and even. Leaves remote, a foot long, five-nerved, the tender ones three-nerved, transversely veined, somewhat netted, marked with lines above along the veins, and having a few yellow hairs scattered between them; they are pale green underneath, with the nerves and veins standing out and purple, the larger ones are pubescent. Petioles two inches long, flat, striated, hispid at the edge, terminated at top by an obovate bladder, an inch long, with some bristles scattered about it. Raceme terminating, upright, a palm or somewhat more in length, subcompounded. Common peduncle alternately compressed, somewhat angular by means of a raised decurrent line, purple, seldom hispid; to the partial peduncles a little wider. Partial peduncles opposite, short; the lowest trifid, the lateral pedicels one-flowered, the middle one three-flowered; the rest three-flowered, with the middle flower sessile. Calyx turbinate, purple, very short, five-toothed, having a few long hairs scattered about the sides and edge. Petals five, roundish. Stamens ten, the length of the corolla. Anthers short, a little longer than the filaments, awl-shaped, purple on the back and at the top, pale about the edge. Style the length of the stamens. Stigma flattened out, orbiculate, a little convex above. Found in Cayenne by von Rohr, in Cayenne and Guiana by Aublet, who fond of multiplying genera, makes this a distinct genus by the country name of Tococa.

59. The branches seem to be scandent; they are acutely four-cornered, compressed at top, with strigose ruggedish angles. Leaves two or three inches long, attenuated, acute, obtuse at the base, five-nerved, having close-pressed hairs scattered over the upper surface, with a small impression to each hair, by no means rugged, greenish yellow underneath, smooth except on the nerves and at the edges, where they are hairy. Petioles short, flat, hairy. Peduncle terminating, erect, an inch long or more. Flowers five or six, collected into a head, sessile. Involucre four-leaved; the two outer leaflets lanceolate, an inch and half long; the two inner ovate, shorter by half; all coloured at the base, the rest very like the leaves, generally five-nerved. Bracte at the base of each flower, membranaceous, lanceolate, almost the length of the calyx, hairy at the back. Calyx smooth, tubular, surrounded at the base by long gray hairs, submembranaceous, nerved, short, five-cleft; segments lanceolate, attenuated, subciliate. Petals five, oblong, shorter by half than the calyx. Stamens ten, longer than the corolla: at the top of the filaments are two little bodies, which are oblong, subpedicelled, yellow, blunt, appendiceled: anthers the length of the filaments, linear, acute, yellow, brown at the back, straight. Germ oblong, crowned by many bristles. Style filiform, the length of the stamens.—Native of the West Indies, where it was found by Schumacher, a Danish surgeon.

60. Branches obtusely quadrangular, covered at top, as are also the petioles and calyxes, with frequent close-pressed bristles. Leaves three inches long and more, attenuated to both ends, acute, three-nerved, besides those along the edge, with yellowish close-pressed bristles along the nerves and veins, those on the branches a little narrower, scarcely rugged, pale green underneath. Petioles short, roundish. Flowers commonly three at each axil, on very short peduncles. Calyx turbinate, obscurely four-toothed. Petals four, ovate. Stamens eight, shorter than the corolla. Anthers short, linear-oblong, blunt, purple, dusky purple on the back.—Native of the Caribbee islands [1].

It differs from M. fasciculata of Swartz, in having broader leaves, rugged above, with soft hairs underneath; flowers infrafoliaceous on longer peduncles several; calyxes smaller, smooth.

61. Branches roundish at bottom, four-cornered towards the top, hoary with meal, dilated below the leaves. Leaves from three to five inches in length, those next the corymb lanceolate, below quite entire; the upper surface very smooth and even, hoary underneath except the marginal nerves springing from the base, veins simple remote, the nerves of the more advanced leaves yellowish; the younger leaves mealy. Petioles and peduncles mealy, flat above, keeled underneath. Corymbs terminating, trichotomous, fastigiate. Universal peduncles in threes, compressed, as are also the partial ones, jointed, with the joints wider at top. Calyx yellowish green, somewhat mealy, globular at the base, contracted above: border somewhat flattened out, obscurely four-lobed. Petals four, oblong, yellow. Stamens eight, a little longer than the corolla. Anthers linear, yellow at the back, whitish at the edge.—Found in Montserrat by Ryan.

62. Branches softly and closely villose, four-cornered, jointed; joints three inches long, gradually shorter upwards, channelled alternately on the opposite sides, by a narrow membranaceous edge standing out. Leaves four or five inches long, triple-nerved besides those on the edge which spring a little above the base, very finely toothletted, ciliate, villose on both sides, especially underneath on the midrib and nerves, rugged above with raised dots, underneath not dotted, less rugged, paler. Petioles closely villose, short, roundish. Peduncles from the alternate axils, solitary, two inches long. Flowers six in each whorl, remote, the lower pedicelled, the upper sessile. Pedicels one-flowered, sometimes two-flowered; the lowest longer, unequal. Calyx four-cleft, villose; segments linear-lanceolate, short, reflex. Petals four, lanceolate, small. Stamens eight, a little longer than the petals. Berry globular, three times the size of Mustard seed.—Native of the Caribbee islands [1].

63. Stem from two to three feet high. Branches round below, four-cornered above, dichotomous, smooth, purplish. Leaves above on the branches, from two to three inches long, oblong, attenuated at the base, subcoriaceous, a little reflex at the edge, the serratures very minute, remote, ending in a short bristle, pressed close to the margin of the leaf, which is triple-nerved,

[1] Forsyth. [1] Idem.

smooth

ſmooth on both ſides, pale underneath, ſomewhat rugged. Petiole an inch long, ſomewhat channelled above, convex underneath. Pedunceles ſix or ſeven, ſhort. Flowers ſmall. Calyx truncated, ſubſtrigoſe when examined with a glaſs. Petals four, ſmall, ovate, attenuated. Stamens eight, the length of the petals. Anthers cuſous, paler at the edge, oblong, blunt at both ends, the length of the filaments. Style longer than the ſtamens. Stigmas blunt, ſubcapitate. Berry the ſize of Coriander ſeed, globular, when examined with a glaſs appearing to have ſtrigoſe cloſe-preſſed hairs thinly ſcattered over it.—Found in the iſland of Montſerrat, towards the tops of the mountains, by Ryan.

64. Branches obſcurely quadrangular, trifid, ſmooth below, above ſubhiſpid with gray ſcattered curled hairs, as are alſo the petioles and pedunculs. Leaves three inches long, ſmooth on both ſides, even, having frequently minute white dots ſcattered over the upper ſurface, eſpecially the younger ones, underneath pale green, netted-veined, nerves and veins yellowiſh: the younger ones marked with lines above along the tranſverſe nerves. Petioles ciliate, ſmoother and thicker towards the baſe. Thyrſe brachiate, a palm in length. Partial pedunculs oppoſite, as are the common pedunculs at the ramifications knotty, the younger ones dirty gray with ſhort hairs, once, twice, ſeldom thrice trichotomous, the laſt branch three-flowered. Pedicels ſhort. A lanceolate leaf on each ſide beneath the loweſt ramifications of the thyrſe. Bractes briſtle-ſhaped. Calyx commonly four-lobed, dotted with white, ſmooth: lobes rounded. Petals four, oblong, ſmooth. Stamens eight. Style longer than the corolla.

Ryan, who diſcovered it in Montſerrat, obſerves that it is a very beautiful ſhrub, from four to ſix feet high, with a regular head like an Orange tree. The large ſcarlet flowers, in thyrſes, cover the whole head. The leaves are wrinkled; and the flowers are ſometimes white.

65. Branches obtuſely quadrangular, tomentoſe with cloſe curled ferruginous hairs, gray-rufeſcent at top. Leaves on very ſhort petioles, from two to three inches long, bluntiſh at both ends, very finely toothletted, above ſomewhat wrinkled and rugged, underneath ſoft, yellowiſh gray, with five nerves beſides thoſe on the edge; the younger leaves are gray-tomentoſe on both ſides. Flowers three or four on each ſide, ſmall. Calycine ſegments four, ovate, ſmall, villoſe on the outſide. Petals four, oblong. Stamens eight, the length of the corolla. Anthers linear-oblong, purple, almoſt the length of the filaments. Berry globular, the ſize of Coriander ſeed.—Found by von Rohr in the Weſt Indies *.

66. Stem ſhrubby, ſix feet high, upright, round, hiſpid, with ſpreading branches. Leaves hairy on both ſides, rugged, petioled. Flowers large, red-purple, on many-flowered, upright, terminating pedunckes. Calyx five-cleft. Petals five, rounded, ſpreading. Filaments ten, brown, bent back, with a long tail hanging down. Berry calycine, ovate, hiſpid, juiceleſs, five-celled. Seeds many, ovate, very ſmall, without any pulp.—Common in Cochinchina.

Fragarius niger of Rumphius, which Linnæus aſſigns to his malabathrica, ſcarcely differs from this except in the number of nerves. M. grandiflora of Aublet (n. 52.) which is ſeven-nerved, is very nearly allied to this, but differs in having the baſe of the leaves cordate, and the ſtamens unequal.

67. This is a ſmall ſhrub, about ten inches high, upright, even. Leaves ovate. Flowers roſe-colored, on few-flowered, terminating pedunckes. Stamens twelve, ſix of which are bent back and have tails; the ſix other interior ones are upright, awnleſs, all fertile. Berry roundiſh, crowned with the ſegments of the calyx, five-celled, many ſeeded.—Native of China about Canton, and Cochinchina.

It differs from M. levigata and diſcolor more in ſtamens than leaves *.

Gærtner remarks, that the fruit in this genus being ſo various, ſome ſpecies bearing genuine berries, others capſules differing in ſituation and number of cells, the eſſence of it, ſo far as concerns the fruit, conſiſts in the ſeeds being void of any albumen, and lying in a ſoft pulp without any proper receptacle, and having a curved embryo.

We are cautioned by Ryan, to whoſe diligence we owe many of the ſpecies from the Weſt Indies, not to attend too much to the ſmoothneſs or hairineſs of the leaves in this genus, that of Pſychotria, and other inhabitants of mountains; becauſe they vary much in this reſpect, according as they grow in a rich ſoil and peaceful valley, or on a rugged brow expoſed to winds and weather.]

Mr. Miller has eighteen ſpecies, natives of the warm parts of America, where he ſays there are many more ſpecies. Moſt of thoſe which he has mentioned were found by Dr. Houſtoun in Jamaica, whence he ſent many of the ſeeds to Europe, ſome of which ſucceeded; but moſt, if not all the plants which were raiſed from them were loſt in the ſevere winter of 1740, ſince which time they have not been recovered in Europe. There is great beauty in the diverſity of leaves in theſe plants; many of them are very large, and moſt of them are of different colours on the two ſurfaces, their under ſide being white, gold colour, or ruſſet, and their upper of different ſhades of green. Their flowers have no great beauty, but for the ſingularity of the leaves, they deſerve a place in all curious collections.

[Mr. Miller's ſpecies are ſo confuſed, that it would be difficult to aſcertain any of them, if many of his ſpecimens did not yet exiſt in the Bankſian herbarium.

1. Melaſtoma Plantaginis folio, as he calls it. His references are the ſame with thoſe which Linnæus puts to his M. Acinodendron, which is very different from this. Miller thus deſcribes it.] It riſes four or five feet high, the ſtem and branches being covered with long ruſſet hairs. Leaves five inches long and two broad, covered alſo with the ſame ruſſet down, having five ribs running from end to end, but the three inner join before they reach the baſe, with ſmall tranſverſe ribs. The fruit is produced at the end of the ſhoots, it is a pulpy blue berry, as large as a nutmeg.

5. [M. groſſulariioides of Miller ſeems to be the ſame with M. levigata of Linnæus, our eleventh ſpecies.] It ſeldom grows more than ſeven or eight feet high, ſpreading out into many ſlender branches, covered with a ſmooth purple bark. Leaves lanceolate, five inches long, and two broad in the middle, ſmooth on both ſides, entire, acute pointed. The flowers are produced in pretty long hanging bunches, of an herbaceous colour, with ſtyles ſtretched out a good length beyond the petals, and permanent. Fruit ſmall, black when ripe.

6. M. bicolor, riſes four or five feet high, dividing into many ſlender branches, which are ſmooth. Leaves lanceolate, three inches long and one inch and a quarter broad, of a lucid green on the upper ſide, but white on the under, having three ribs which join before they reach the baſe, they are entire and placed alternately on the branches. The flowers are produced in a looſe panicle at the end of the branches; they are ſmall, white, and have pretty long tubes. Fruit ſmall, purple.

7. M. malabathrica [very different from the plant of the ſame name in Linnæus. Thus deſcribed by Miller.] Stem angular, ſix or ſeven feet high, ſending out branches oppoſite. Leaves lanceolate, oval, rough, hairy, dark green on the upper ſide, but pale green on the under. The flowers are produced at the end of the branches, two or three ſtanding together; they are large, and of a roſe colour, inclining to purple, ſitting in large hairy calyxes: theſe are ſucceeded by roundiſh purple fruit, crowned by the calyx, and filled with a purple pulp ſurrounding the ſeeds.

8. [M. levigata of Miller is the ſame with M. argentea of Swartz, our n. 25.

10. M. umbellata of Miller is the ſame with M. patens of Swartz, our n. 17.] Stem ſhrubby ten or twelve feet high, covered with a hairy bark, and dividing into many branches towards the top. Leaves heart-ſhaped ending in acute points; they are five inches

* Vahl Enum.

* Lourieo.

inches long and three broad towards the base, entire, dark green above and hoary underneath, with five longitudinal nerves, and many smaller transverse ones; they stand upon hairy footstalks, two inches and a half in length. The flowers are produced at the end of the branches in a sort of umbel; they are of a pale rose-colour, and pretty large, sitting on hairy calyxes, and succeeded by small black fruit, a little larger than Elder-berries.

[There are also specimens of his eleventh species M. racemosa, of his twelfth, M. verticillata, of his acuta, n. 13., of his glabra, n. 14., of his quinquenervia, n. 15., and of his octandria, n. 16.: but whether these correspond with any of the species already set down from Swartz or Vahl, or are distinct from them I cannot determine. Miller's octandria may perhaps be the same with fragilis of Linnæus's Supplement.]

PROPAGATION AND CULTURE.

The best way to obtain these plants is to have the entire fruits put up in dry sand as soon as they are ripe, and forwarded by the quickest conveyance. They should be taken out as soon as they arrive, and the seeds sown in pots of light earth, and plunged into a moderate hot-bed of tanner's bark. When the plants come up, and are fit to remove, plant each in a small pot of light earth, plunging them into the tan-bed. Afterwards treat them in the manner directed for ANNONA.

[MELEAGRIS. See *Fritillaria*.

MELENOUHALL. See *Ornithogalum*.]

MELIA. (*Μελια of Dioscorides. The wood fit for spears, commonly translated the Ash-tree.*)

Lin. gen. n. 527. *Reich. n.* 576. *Schreb. n.* 724. *Gærtn. t.* 180. *Juss.* 265. *Cavan. diss. t.* 207.

Class. 10. 1. Decandria Monogynia.

Nat. order of *Tribiliatæ*. *Melie* Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, very small, five-toothed, upright, blunt.

COR. *Petals* five, linear-lanceolate, spreading, long.

Nectary cylindric, one-leafed, the length of the corolla, with a ten-toothed mouth.

STAM. *Filaments* ten, very small, inserted within the apex of the nectary. *Anthers* not exceeding the nectary, oblong.

PIST. *Germ* conical. *Style* cylindric, the length of the nectary. *Stigma* capitate, with five converging valves.

PER. *Drupe* globular, soft.

SEED. *Nut* roundish, five-grooved, five-celled.

ESSENTIAL CHARACTER.

Cal. five-toothed. *Pet.* five. *Nect.* cylindric, bearing the anthers at its mouth. *Drupe* with a five-celled nucleus.

SPECIES.

1. Melia Azedarach. *Common Bead-tree.*
Lin. spec. 550. *Reich.* 2. 271. *hort. cliff.* 161. 1. *fl. zeyl. n.* 162. *Gron. orient.* 133. *Knipb. cent.* 2. *n.* 44. *Cavan. diss.* 7. 363. *t.* 207.
Azedarach. *Dod. pempt.* 848. *Burm. zeyl.* 40. *Herm. lugdb.* 652. *Rais hist.* 1546.
Arbor fraxini folio, flore cæruleo. *Bauh. pin.* 413.
Pseudo-Sycomorus. *Cam. epit.* 181.
Zizypha canadia. *Grr.* 1306. *f.* 1. *emac.* 1491. *f.* 1.
Leaves bipinnate, leaflets flat, finely with ferruginous dots underneath.

2. Melia sempervirens. *Evergreen Bead-tree.*
Swartz. prodr. 67. *obs.* 171. *Lin. spec.* & *Reich.* 1. β.
Azedarach sempervirens & florens. *Tournef. inst.* 616. *Comm. hort.* 1. 147. *t.* 76.
Leaves bipinnate, leaflets somewhat wrinkled commonly seven.

3. Melia Azedirachta.
Lin. spec. 550. *Reich.* 2. 272. *hort. cliff.* 161. 2. *fl. zeyl. n.* 161. *Cavan. diss.* 7. 364. *t.* 208. *Gærtn. fruct.* 2. 474. *Pluk. phyt. t.* 147. *f.* 1.
Azedarach foliis falcato-serratis. *Burm. zeyl.* 49. *t.* 15. *ind.* 101.
Azadirachta indica, folio fraxini. *Breyn. ic.* 15. *t.* 1.

Arbor indica fraxino similis, olese fructu. *Bauh. pin.* 416.
Aria-bepou. *Rheed. mal.* 4. 107. *t.* 52.
Leaves pinnate.

DESCRIPTIONS, &c.

1. This in warm countries grows to a large tree, spreading out into many branches. Leaflets notched and indented on their edges, deep green above, and paler underneath. The flowers come out from the side of the branches in long loose bunches. Petals blue. Fruit oblong, the size of a small Cherry, green at first, but when ripe changing to a pale yellow. Nut four or five-celled, with one oblong seed in each cell. It flowers in July, but does not often produce seeds. It drops the leaves in autumn, and puts out fresh ones in spring. The pulp surrounding the nut is poisonous, and mixed with grease, it is said will kill dogs. The nuts are bored and strung for beads by the Roman Catholics.

Native of Syria, and now common in Spain and Portugal. [Cultivated in 1656, by Mr. John Tradescant Jun.[a]]

2. This which has been generally regarded as a variety, is thought by Swartz to be a distinct species, differing from that in being smaller and often flowering for two years together, the leaflets which are bright green, are seldom more than seven, wrinkled a little, deeper and more unequally serrate and acuminate.

Native of the East Indies.] Mr. Miller says, that some plants have been introduced into the West Indies, where he is informed they continue flowering and fruiting most part of the year; that he has received the fruit by the name of Indian Lilac, from which he raised many plants, but found them to be the same with that from Syria.

3. This becomes a large tree in India. The stem is thick, the wood of a pale yellow, and the bark of a dark purple colour and very bitter. The branches extend wide on every side. The leaves are compofed of five or six pairs of oblong acute-pointed leaflets, terminated by an odd one: they are serrate, of a light green colour, and of a strong disagreeable odour; they stand upon pretty long footstalks, oppofite or alternate. The flowers are produced in long branching panicles from the side of the branches: they are small, white, and fit in small calyxes, cut into five acute segments. Fruit oval, the size of small Olives, green, turning yellow, and when ripe changing to purple: the pulp is oily, acrid and bitter: the nut is white and shaped like that of the former. [Gærtner describes the fruit as a berried drupe, of an elliptic-globular form, and black, with a soft pulp, and a bony white shell; it has five or six grooves, and five or six cells, a wide little cavern within the base, from which a narrow canal ascends towards the top of the shell, opening into the cells at the top by five or six little apertures. Umbilical chords very short, reaching from the axis to the apex of the seed through the apertures. Seeds solitary, oblong, attenuated to both ends, compressed wedge-form, a little wrinkled, very dark rust coloured. The number of grooves and cells varies. Commelin gives only four cells, Gærtner's specimen had six, but the natural number is five.

Cavanilles has another species from Lamarck's herbarium, native of the East Indies, whence it was brought by Sonnerat.]

PROPAGATION AND CULTURE.

1. This sort is propagated by seeds (which may be obtained from Italy or Spain, where these trees annually produce ripe fruits in the gardens where they are planted:) the seeds or berries should be sown in pots filled with good light fresh earth, and plunged into a moderate hot-bed of tanners bark, where, if the seeds are fresh, they will come up in about a month or five weeks time. When the plants are come up they should be frequently watered, and should have a large share of free air, by raising the glasses every day; in June they should be exposed to the open air, in a well sheltered situation, that they may be hardened before winter. In october the pots should be removed under a

[a] Hort. kew.

hot-bed frame, where they may enjoy free open air when the weather is mild, and be covered in hard froſt. During the winter ſeaſon they muſt be refreſhed gently with water, but by no means repeat this too often, nor give them too much at a time; for their leaves being off, they will not be in a condition to throw off a ſuperfluity of moiſture.

In march following, you may ſhake out the plants from the ſeed-pots and divide them, planting each into a ſeparate ſmall pot, filled with light freſh earth, plunging them into a moderate hot-bed, which will greatly promote their rooting, and increaſe their growth, but they muſt not be drawn too much; and in june you ſhould remove them out into the open air as before, and during the three or four winters, while the plants are young, you muſt ſhelter them, to ſecure them from the cold; but when the plants are grown pretty large and woody, they will endure to be planted in the open air againſt a ſouth wall. The beſt ſeaſon for this is in april, at which time you ſhould ſhake them out of the pots, being careful not to break the earth from the roots, but only pare off with a knife the outſide of the ball of earth; then open your holes and put in the plants, cloſing the earth to their roots, obſerving if the weather is dry, to give them ſome water, which ſhould be repeated twice a week until the plants have taken root; but you muſt obſerve to plant them on a dry ſoil, otherwiſe they will be liable to miſcarry in ſevere froſty weather.

3. This ſort is now very rare in England, and alſo in the Dutch gardens, where ſome years paſt it was more common; it is propagated by ſeeds in the ſame way as the other ſort, but being much tenderer, the plants ſhould be kept conſtantly in the tan-bed while young. In the ſummer they may be placed under a frame, but in winter they muſt be removed into the bark-ſtove, and treated in the ſame way with other plants from the ſame countries. When the plants have obtained ſtrength, they may be treated more hardily, by placing them in winter in a dry ſtove, and in the middle of ſummer they may be placed abroad for two or three months in a warm ſheltered ſituation, but they ſhould not remain too long abroad; and during the winter ſeaſon they ſhould be ſparingly watered: with this management the plants will produce flowers annually, and as they retain their leaves all the year, they are ornamental in winter in the ſtove.

MELIANTHUS. (*From μελι and ανθος, honey-flower.*)
Lin. gen. n. 795. *Reich. n.* 859. *Schreb. n.* 1068. *Juſſ.* 297. *Tournef.* 245. *Herm. lugdb.* 415.
Claſs. 14. 2. Didynamia Angioſpermia.
Nat. order of *Corydales. Rutaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* large, five-parted, coloured, unequal: the two upper ſegments oblong, erect; the loweſt very ſhort, like a bag, gibbous downwards; the middle ſegments oppoſite interior, lanceolate, the uppermoſt ſimple, erect.

COR. *Petals* four, lanceolate-linear, with the tops reflex, from parallel ſpreading, turned outwards, forming the lower lip, as the calyx itſelf does the upper, connected at the ſides in the middle.

Nectary one-leafed, placed within the loweſt ſegment of the calyx, and faſtened to it with the receptacle, very ſhort, compreſſed at the ſides, gathed at the edge, turned downwards by the back.

STAM. *Filaments* four, awl-ſhaped, upright, the length of the calyx; the two lower ſhorter, united at the baſe. *Anthers* coalate-oblong, four-celled in front.

PIST. *Germ* four-cornered, gibbous, four-toothed. *Style* upright, awl-ſhaped, of the ſame length and in the ſame ſituation with the ſtamens. *Stigma* four-cleft, with the upper ſegment larger.

PER. *Capſule* quadrangular, half-four-cleft; angles ſharp, diſtant; cells inflated; partitions open in the centre for a receptacle of the ſeeds, gaping between the angles.

SEEDS in fours, ſubglobular, annexed to the centre of the capſule.

ESSENTIAL CHARACTER.

Cal. four-leaved, the lower leaf gibbous. *Pet.* four, with the nectary within the loweſt. *Capſ.* five-celled.

SPECIES.

1. Melianthus major. *Great Honey-flower.*
Lin. ſpec. 892. *ſyſt.* 581. *Reich.* 3. 204. *hort. diff.* 493. 1. *muſ.* 181. *Mill. illuſtr. Knipb. cent.* 12. *n.* 70.

M. africanus. *Herm. lugdb.* 414. *t.* 415.
Stipules ſolitary faſtened to the petiole.

2. Melianthus minor. *Small Honey-flower.*
Lin. ſpec. 892. *Reich.* 3. 202. *hort. diff.* 493. 2. *Vahl ſymb.* 3. 85. *Knipb. cent.* 8. *n.* 68. *Curt. magaz. t.* 301.
Stipules in pairs diſtinct-racemes axillary elongated, flowers in whorls, bractles linear elongated.

[3. Melianthus comoſus.
Vahl ſymb. 3. 86.

M. africanus minor ſoetidus. *Comm. rar.* 4. *t.* 4. *Raii dendr.* 120.
Stipules diſtinct, racemes infrafoliaceous, flowers alternate, bractles cordate, leaves villoſe above.

DESCRIPTIONS, *&c.*

Theſe are ſhrubby, with alternate unequally pinnate leaves on a winged petiole, with ſtipules either diſtinct or faſtened to the petiole. Flowers in ſpikes either axillary or terminating, each having a bractle. This genus is allied to Tropæolum in the cowl of the calyx, and in the ſituation of the petals and ſtamens, but it more reſembles Dictamnus in the habit, fruit and periſperm; it however differs very much from both *.]

1. Root woody, perennial, ſpreading. Stems many, woody, four or five feet high, herbaceous towards the top. Leaves large, embracing the ſtem at the baſe, where they have a large ſingle ſtipule faſtened on the upper ſide of the footſtalk, with two ears at the baſe, which alſo embrace the ſtem. The leaves have four or five pairs of very large leaflets, deeply jagged into acute ſegments; and between them runs a leafy jagged border or wing along the upper ſide of the midrib, ſo as to connect the leaflets at the baſe; they are of a gray colour. Spikes pretty long, ſpringing from between the leaves towards the top of the ſtalks. Corolla brown or chocolate colour.

[Linnæus remarks, that if this plant be ſhaken whilſt it is in flower, it diſtils a ſhower of nectar. He alſo informs us that it was ſent from the Cape of Good Hope to Thomas Bartholinus in Holland by Hermann, in the year 1672.—It was introduced into England in 1690, by Mr. Bentick *.]

2. This riſes with round, ſoft, woody ſtalks, five or ſix feet high, ſending out two or three branches from the ſide. Leaves not half ſo large as thoſe of the preceding, deep green on the upper, and whitiſh on the under ſide. The flowers come out from the ſide of the ſtalks in looſe hanging panicles, each ſuſtaining ſix or eight flowers, ſmaller than thoſe of the firſt ſort: the lower part of the petals is green, the upper ſaffron-coloured, and on the outſide, in the ſwelling part of the petals, is a bluſh of fine red.

[The leaflets are ſmooth above, houry underneath. Raceme a foot long, upright. Flowers remote, in whorls of four, pendulous. Bractles the length of the calyx. Segments of the calyx lanceolate, attenuated *.

Mr. Curtis remarks, that the ſtem, which is ſhrubby, and from three to five feet high, during the flowering ſeaſon is apt to exhibit a naked appearance, having then fewer leaves on it, and thoſe not of their full ſize; that the foliage has an unpleaſant ſmell; and that the nectar does not flow ſo copiouſly as in the large ſort, but is retained at the bottom of the corolla, and is of a dark brown colour.

Native of the Cape of Good Hope. Cultivated in 1708 by the Dutcheſs of Beaufort *.

3. Branches round, warted below, houry above. Leaves at the ends of the branches, approximating, alternate, five-paired. Leaflets oppoſite, ſeſſile, an inch and half long, lanceolate, deeply ſerrate; the ſerratures ſharper than in M. minor, acuminate, veinleſs, villoſe and greener on the upper ſurface, marked with lines along the nerves, houry underneath, ſoft. Petiole ſomewhat winged with the edge of the leaf running down it. Stipules awl-ſhaped. Racemes al-

* Juſſieu. * Hort. kew. * Vahl. * Hort. kew.

ternate, frequent, below the leaves on the branches, the uppermoſt ſometimes axillary, three inches long, nodding. Flowers approximating. Pedicels and peduncles villoſe-tomentoſe, a little thicker under the flower. Bractes villoſe, a little longer than the pedicel. Two ſegments of the calyx wide, ovate, acute, villoſe; the third linear, inferior. Capſule hoary.

Native of the Cape of Good Hope*.]

PROPAGATION AND CULTURE.

1. This plant was formerly preſerved in a green-houſe as a tender exotic, but if planted in a dry ſoil and a warm ſituation, it will endure the cold of our ordinary winters very well; and if in a ſevere froſt the tops ſhould be deſtroyed, yet the roots will abide, and put forth again the ſucceeding ſpring. The plants which grow in the open air always flower much better than thoſe in the green-houſe, being leſs drawn, which is always hurtful to the flowering of plants. The ſureſt method to have them flower in the open air is to cover the ſhoots in froſty weather with reeds or mats: and if they are planted againſt a ſouth wall and on dry rubbiſh, they may be faſtened up to the wall and covered, and not ſhooting ſo vigorouſly as in rich ground, they will be leſs ſucculent, and therefore not ſo liable to ſuffer by cold.

This plant may be propagated by taking off its ſuckers or ſide ſhoots, any time from march to ſeptember, obſerving to chuſe ſuch as are furniſhed with fibres, and after they are planted and taken root, they will require no farther care but to keep them clear from weeds: they may be alſo propagated by planting cuttings, during any of the ſummer months, which, if watered and ſhaded, will take root very well, and may afterwards be tranſplanted where they are deſigned to remain.

2. This not ſpreading like the firſt, is not propagated ſo eaſily, but cuttings planted upon an old hot-bed, the heat of which is over, and covered cloſe with bell or hand-glaſſes to exclude the air, will take root pretty freely; theſe may be planted in pots and ſheltered in the winter under a common frame for a year or two till they have obtained ſtrength, then they may be planted in a warm border, and treated in the ſame way as the former ſort, with which management I have ſeen them flower much better than any of thoſe which have been treated more tenderly, and theſe plants have perfected their ſeeds in good ſeaſons.

MELICA.

Lin. gen. n. 82. *Reich. n.* 88. *Schreb. n.* 113. *Gærtn. t.* 80. *Juſſ.* 31.

Claſſ. 3. 2. Triandria Digynia.

Nat. order of *Gramina, Graminæ* or *Graſſes.*

GENERIC CHARACTER.

CAL. *Glume* two-flowered, two-valved: *valves* ovate, concave, nearly equal.

COR. two-valved: *valves* ovate, awnleſs; one concave, the other flat and ſmaller. A *corpuſcule* between the florets, turbinate, pedicelled.

Nectary one-leafed, horizontal, ſurrounding the germ, fleſhy.

STAM. *Filaments* three, capillary, thickened at the baſe, connate, the length of the flower. *Anthers* oblong, forked at each end.

PIST. *Germ* obovate, turbinate. *Styles* two, briſtle-ſhaped, ſpreading, naked at the baſe. *Stigmas* oblong, feathered.

PER. none. *Corolla* incloſing and dropping the ſeed.

SEED ſingle, ovate, grooved on one ſide.

OBS. *The peduncled corpuſcule (which is the rudiment of a flower) gives the eſſential character: it conſiſts of two rudiments, or truncated alternate florets, with convoluted pellucid glumes.* Linn.—*Add, that the ſtamens are diloted at the baſe and connate, with a one-leafed nectary.* S.

ESSENTIAL CHARACTER.

Cal. two-valved, two-flowered: with the rudiment of one or two florets that are abortive, between the two others.

SPECIES.

1. Melica ciliata. *Ciliated Melic-graſs.*
Lin. ſpec. 97. *Juſſ.* 112. *Reich.* 1. 181. *Willd.* 381. *Fl. ſuec. n.* 77. *Pollich pal. n.* 83. *Gmel. ſib.* 1. 99. *Hall. helv. n.* 1517. (Arundo). *Hoppe. ſyn. germ. n.* 413. *Krock. ſilef. n.* 130. *Villars dauph.* 2. 88.
Gramen avenaceum montanum lanuginoſum. *Bauh. pin.* 10.
Gr. aven. ſpica ſimplici, locuſtis denſiſſimis candicantibus & lanuginoſis. *Scheuch. gram.* 174.
The outer petal of the lower floret ciliate.

2. Melica gigantea. *Gigantic Melic-graſs.*
Thunb. prodr. 21. *Lin. ſpec. ed. Willd.* 382.
Aira villoſa. *Lin. ſuppl.* 109.
Corollas hirſute awned, panicle whorled, culm upright.

3. Melica geniculata. *Jointed Melic-graſs.*
Thunb. prodr. 21. *Lin. ſpec. ed. Willd.* 382.
Corollas rough-haired, panicle contracted, culm decumbent.

4. Melica decumbens. *Proſtrate Melic-graſs.*
Thunb. prodr. 21. *Lin. ſpec. ed. Willd.* 382.
Corollas hirſute, flowers racemed nodding, culm decumbent.

5. Melica racemoſa. *Racemed Melic-graſs.*
Thunb. prodr. 21. *Lin. ſpec. ed. Willd.* 382.
Corollas rough-haired, racemes drooping, culm creſt.

6. Melica nutans. *Mountain Melic-graſs.*
Lin. ſpec. 98. *Juſſ.* 112. *Reich.* 1. 182. *Willd.* 382. *fl. ſuec. n.* 76. *Iapp. n.* 36. *Schreb. gram.* 62. *t.* 6. *f.* 2. *Gærtn. fruct.* 2. 5. *Wither. arr. ed.* 2. 82. *Curt. lond. n.* 70. *Fl. dan. t.* 962. *Gmel. ſib.* 1. 97. *Hall. helv. n.* 1472. (Poa). *Hoppe. ſyn. germ. n.* 414. *Villars dauph.* 2. 89.
M. montana. *Huds. angl.* 37.
Aira nutans. *Wiggers holſ.* 7.
Gramen montanum avenaceum ſpicatum. *Bauh. pin.* 10.
Gr. aven. locuſtis rarioribus. *Mor. hiſt.* 3. 215. *ſ.* 8. *t.* 7. *f.* 49. (potius 48.)
Gr. montanum ſpicatum. *Cluſ. hiſt.* 2. 218.
Petals beardleſs, panicle nodding ſimple.

7. Melica uniflora. *Single-flowered wood Melic-graſs.*
Retz. obſ. 1. 10. *n.* 9. *Wither. arr. ed.* 2. 81. *Curt. lond.* 5. 10. *Sibth. oxon. n.* 123. *Lin. ſpec. ed. Willd.* 383. *Hoppe. ſyn. germ. n.* 415.
M. nutans. *Huds. angl.* 37. *Pollich pal. n.* 84.
M. Lobelii. *Villars dauph.* 2. 90. *t.* 3. *f.* 3.
Gramen montanum avenaceum locuſtis rubris. *Bauh. pin.* 10. *prodr.* 20. *Scheuch. gram.* 171. *t.* 3. *f.* 16. *D. E. F. Mor. hiſt.* 3. 215. *ſ.* 8. *t.* 7. *f.* 48. (potius 49.)
Gr. aven. rariore grano nemorenſe danicum. *Bauh. hiſt.* 2. 434. *Lob. adv. opp.* 2. 465.
Gr. av. nemorenſe, glumis rarioribus ex fuſco xerampelinis. *Raii ſyn.* 403.
Panicle thin, calyxes two-flowered, one floret hermophrodite the other neuter.

8. Melica ramoſa. *Branching Melic-graſs.*
Thunb. prodr. 21. *Lin. ſpec. ed. Willd.* 383.
Corollas ſmooth awnleſs, panicle contracted, culm branched.

9. Melica capenſis. *Cape Melic-graſs.*
Thunb. prodr. 21. *Lin. ſpec. ed. Willd.* 383.
Corollas ſmooth awnleſs, panicle ſpreading very much, leaves ſubulæform.

10. Melica minuta. *Small Melic-graſs.*
Lin. mant. 32. *ſpec. ed. Reich.* 1. 182. *Willd.* 383. *Juſſ.* 113.
Culm branched, leaves briſtle-ſhaped, petals beardleſs.

11. Melica cærulea. *Purple Melic-graſs.*
Lin. Juſſ. 113. *Reich.* 1. 183. *Willd.* 383. *Wither. arr. ed.* 2. 82. *Curt. lond.* 5. 11. *Lightf. ſcot.* 96. *Relh. cant. n.* 61. *Sibth. oxon. n.* 122. *Fl. dan. t.* 239. *Pollich pal. n.* 85. *Leers herborn. n.* 58. *t.* 4. *f.* 7. *Cullum ſ. angl. ſpec.* 26. *Hoppe. ſyn. germ. n.* 412.
Aira cærulea. *Lin. ſpec.* 95. *Huds. angl.* 33. *Scop. carn. n.* 91.
Poa. *Lin. Iapp. n.* 29.
Arundo. *Hall. helv. n.* 1518.
Gramen arundinaceum enode minus ſylvaticum. *Bauh. pin.* 7. *theat.* 97. *Scheuch. gram.* 209.

Gramen

Gramen pratenſe ſerotinum, paniculâ rara purpuraſcente. *Mor. hiſt.* 3. 201. *ſ.* 8. *t.* 5 *f.* 22.

Gr. prat. ſerot. pan. longa purp. *Raii hiſt.* 1288. *ſyn.* 404.

β. Gr. paniculatum autumnale, pan. ampliore e viridi nigricante. *Scheuch. gram.* 207. *Pollich* 3.

Gr. arund. enode majus montanum. *Bauh. theat.* 66.

Gr. enode majus ſylvar. *Scheuch. gram.* 207. *t.* 4. *f.* 11, 12. *Gouan illuſtr.* 3.

Panicle contracted, flowers cylindrical.

12. Melica papilionacea. *Pea-flowered Melic-graſs. Lin. mant.* 31. *ſyſt.* 113. *Reich.* 1. 183. *Willd.* 384.

M. braſiliana. *Ard. ſpec.* 2. 17. *t.* 6. *f.* 1, 2.

Gramen ſpica brizæ, &c. *Sloan. jam.* 1. 206. *t.* 64. *f.* 1.

Lower valve of the calyx very large coloured, outer petal bifoliate.

13. Melica altiſſima. *Tall Melic-graſs. Lin. ſpec.* 98. *ſyſt.* 113. *Reich.* 1. 184. *Willd.* 385. *hort. upſ.* 20. *Gmel. ſib.* 1. 98. *t.* 20.

β. Gramen avenaceum, loculis rarioribus muticis, virginianum majus. *Mor. hiſt.* 3. 216. *ſ.* 8. *t.* 7. *f.* 51.

Petals beardleſs, panicle contracted directed one way.

[a]14. Melica Falx.

Lin. ſuppl. 109. *ſyſt.* 113.

Cynoſurus falcatus. *Thunb. prodr.* 23. *Lin. ſpec. ed. Willd.* 411.

Spike directed one way compreſſed imbricate.

DESCRIPTIONS, *&c.*

1. Root perennial. Culms ſeveral, upright, from two to three feet high, round, ſmooth, with ſeven ſmooth, purple joints. Leaves lanceolate, mucronate, flat, from three to nine inches long, one or two lines wide, ſmooth underneath, ſlightly pubeſcent above, ſomewhat rugged downwards. A white nerve runs along the back. Ligule white, cloven. Sheaths ſtriated, the lower a little pubeſcent and rugged, the upper ones ſmooth. Panicle erect, cylindric, ſpiked, round, from two to three inches long, four lines wide, when young appearing to be ſmooth, but becoming feathered by age. Branches two or one ſpring from the ſcape, which are ſomewhat rigid, and divided from the very baſe into ſmaller and even very ſmall branches; the final peduncles, on which the flowers are placed either ſingly or in bundles, are very ſhort. Spikelets lanceolate, mucronate, ſtriated, two-flowered, green white and purple, ſhining, compreſſed a little, near three lines long, cloſed, ſcarcely one line wide. Larger glume of the calyx longer than the corolla, lanceolate, mucronate. Outer valve of the corolla, in the larger ſeſſile floret adorned with white feathers ſtanding out; but in the ſmaller pedicelled floret ſmooth; both are awnleſs. Anthers white. Stigmas white, feathered. The ſcape is entirely covered with the ſpikelets [b].

Native of the North of Europe. Introduced in 1771, by Monſ. Richard. It flowers in july [c].

2. Native of the Cape of Good Hope.

3. Is this different from Ehrharta calycina, Smith, ic. ined. 33. which is alſo a native of the Cape? In the Supplement of the younger Linnæus it is named Aira capenſis.

4, 5. Both natives of the Cape of Good Hope [d].

6. Root perennial, ſomewhat creeping. Culms a foot or a foot and half high, ſimple, upright, rugged, ſtriated, ſomewhat angular, below purpliſh. Leaves at the baſe of the culm ſhort ſcale-like, browniſh, as they aſcend becoming longer and narrower, a line and half broad, and ſlightly rugged. Ligule none. Panicle two or three inches long, bending down a little, with the flowers inclining one way, ſimple or branched; peduncles capillary, preſſed a little to the rachis, flexuoſe, upright, villoſe when magnified, eſpecially at the flower, where they are ſomewhat thickened. Spikelets uſually three-flowered; rudiment of the pedicelled floret forming a ſort of club. Calycine valves unequal, blunt, faintly ribbed, at firſt purple and finally of a browniſh hue. Outer valve of the corolla large, many-ribbed, moſt of the ribs ſcarcely reaching half its length; the inner one broad, flat and much ſhorter. Filaments quite diſtinct. Anthers yellow. Germ broad-ovate, pellucid. Styles naked below, above feathery and ſpreading. Nectary two little glumes, fleſhy and truncated [e]. Seed ovate-oblong, attenuated downwards, convex on one ſide, and having a longitudinal groove along the other; ſmooth, ſhining as if oiled, dark-bay and almoſt cheſtnut-coloured [f].

Native of many parts of Europe, particularly the northern countries, in rocky and ſhady ſituations: with us in Yorkſhire, Weſtmoreland and Cumberland; alſo in Scotland. It flowers in july and auguſt.

This plant, as Mr. Curtis obſerves, accords ſo ill with Gramen montanum ſpicatum of Cluſius, which is referred to it by Schreber, Haller and Scheuchzer, that he probably intended ſome other ſpecies.

7. Root perennial. Culm ſimple, a foot and half or more in height, where it is covered with the ſheaths of the leaves ſomewhat angular, rugged and ſtriated, at bottom of a dull purple colour. Stem-leaves about five, yellowiſh green, flat, a line and half or almoſt two lines broad, terminating gradually in a point, feeling rough when drawn backwards between the fingers, on the upper ſide ſomewhat hairy, the edges when magnified appearing finely ſerrate: ligule ſcarcely any, but what is very remarkable, a ſmall ovate leaf with a long point, upright and coloured, riſes from the fore part of the mouth of the ſheath. Flowers in a looſe panicle; the lowermoſt flower-ſtalks growing two together, the one ſhorter than the other, bearing three flowers, and even ſeven or eight when cultivated in a garden; the uppermoſt growing ſingly. Spikelets pedicelled, at firſt of a dark purple colour, beardleſs, each containing two flowers. Calycine valves coloured and ſhining; the outer ovate, concave, five-ribbed, ending in a ſhort point; the inner leſs, ovate-lanceolate, three-ribbed. Hermaphrodite flower ſeſſile, the outer valve large, bellying, with its edges embracing the inner, which is flattiſh, with membranaceous edges turned back, eſpecially near the baſe: ſterile flower pedicelled. Germ ſmooth, ſhining, yellowiſh: ſtyles ſeparate at bottom and ſpreading out: ſtigmas villoſe. Nectary a very minute entire ſcale, at the baſe of the germ. Seed ovate, rather large and blackiſh. The delicacy and ſtriking colour of the panicle, joined to its place of growth, in woods, readily diſtinguiſh this from all our other graſſes [g].

Native of Sweden, Germany, Switzerland, France and England. In moſt of the woods near London. Mungewell, Ardley and Stokenchurch woods in Oxfordſhire, &c.

There is a confuſion in ſome of the ſynonyms of theſe two ſpecies; thoſe of Bauhin and Moriſon are clearly wrong.

8, 9. Natives of the Cape of Good Hope [h].

10. Culms filiform, very narrow, half a foot high, very much branched, covered with the ſheaths of the leaves. Leaves very narrow, rolled inwards, ſpreading a little at the baſe. Racemes terminating, ſimple, capillary, few-flowered. Calyx ſhorter by half than the florets, which are oblong and awnleſs, with a truncated barren pedicelled floret between them.—Found in Italy, by Scopoli [i].

11. Root perennial, thick, whitiſh or browniſh, flexuoſe and villoſe. Culm from a foot to two feet in height, ſomewhat bulbous at the baſe, upright, having only one knot, and that near the baſe, above naked and ſmooth. Leaves for the moſt part three or four, about a hand's breadth in length, blueiſh-green, rather broad, acuminate, ſtiffiſh, the lower ones flat, the upper ones ſomewhat rolled up, hairy at the edges. Ligule none. Sheath ſhort, ſtriated. Flowers in a branched panicle, a hand's breadth or more in length; the branches cloſing together ſo as to form a kind of ſpike. Spikelets containing two, three or four flowers, but moſt commonly three, with the rudiment of a flower in moſt of them: the young ones flattened, the full-grown ones roundiſh, obtuſe, ſlightly diverging. Calycine valves pointed, keeled, with purple edges.

[a] Pollich. [b] Hort. kew. [c] Thunb. prodr. [d] Gærtner. [e] Curtis. [f] Linn. mant. [g] Curtis. [h] Thunberg. [i] Linn. mant.

Valves of the corolla nearly equal, the outer, which is rather larger, embracing the inner, three-ribbed, ſlightly pointed, the edges purple; the inner valve two-ribbed, paler, obtuſe, and a little ſhorter. Nectary, two very ſhort broad truncated emarginate ſcales. Anthers purple. Germ very minute, ſmooth and ſomewhat ovate: ſtyles branched to the bottom and purple.

Linnæus at different periods placed this graſs in different genera: in his Flora Lapponica it appears as a *Poa*; in his Species Plantarum and Flora Suecica as an *Aira*; in his Syſtema Vegetabilium as a *Melica*. If the ſpikelets be examined when the plant is young, they are very like thoſe of Poa, being pointed, flattened, and containing uſually from three to five flowers; as they advance, their form alters, they become rounder, and more like the flowers of Aira aquatica; ſo that if the rudiment were wanting, it might be difficult to determine in which genus it ſhould be placed, but that being preſent, we are under no difficulty in claſſing it with Melica.

This graſs is eaſily known by its having only one knot, and that near the baſe; and by the ſtamens and ſtigmas being of a deep purple colour. Merret's name of Gramen ſpica lavendulæ is very expreſſive of its appearance when in flower.

It is common on wet moors and heaths, flowering from July to the end of September. Being harſh and late, it does not ſeem adapted to agricultural purpoſes. It varies greatly in ſize [1].

The fiſhermen in the iſle of Skie make ropes for their nets of this graſs, which they find by experience will bear the water well without rotting [2].

12. This has the ſtature of the next ſucceeding ſpecies. Panicle rod-like, with ſlender peduncles longer than the flower, branched eſpecially below. Lower valve of the calyx obovate, blunt, very large, coloured; upper valve, only one-ſixth of the ſize, remote from the lower, ſcarioſe and coloured at the top. Flowers two, alternate, beſides the rudiment. Outer petal to each oblong, ſtriated with ſixteen nerves; the middle ones muricated; the ſide ones ciliate with many briſtles; but the apex of the petal is ſcarioſe with a thin even membrane, blunt and coloured. Inner petal ſimple. Rudiment oblong.

Native of Braſil, *Arduini* [3]. Jamaica, *Sloane*.

13. Leaves two lines and a half wide. Panicle often half a foot long, thick and branched, the branchlets preſſed cloſe to the culm. Spikelets three or four-flowered. Calycine valves obtuſely mucronate, the inner longer. Florets alternate, not very remote, ſmaller the higher they are; the outer glume embraces the other and the next floret above; inner valve ſhorter by half or a third, flat or concave outwards, blunt, membranaceous with a green edge. The extreme floret is pitcher-ſhaped, one-valved, permanent, containing the rudiment of a germ with a ſhort ſtyle; it is therefore a female or neuter floret.

Native of Siberia [4]. Introduced in 1770, by Monſ. Richard [5].

β. Is a native of Canada, and differs ſo much in habit that it is probably a diſtinct ſpecies [6].

14. Leaves on the culm two, alternate. Culm a foot and half in height, even, with two joints. Spike a finger's length, imbricate with lateral, lanceolate, acuminate, three-nerved leaflets, a little longer than the flowers, one to each. Flowers pubeſcent, with a white edge. Calycine leaflets flat; the inner ſhorter than the floret. Florets two to each calyx, a larger and a ſmaller, beſides the rudiment. Outer valve of the corolla obovate, white-ciliate, very blunt, emarginate; inner long, narrower, even, lanceolate.

Native of the Cape of Good Hope, where it was found by Sparrmann [7]. Thunberg, who alſo found it at the Cape, has with reaſon removed this ſpecies into the genus *Cynoſurus*; but not having been noticed in this work under that genus, it is inſerted here.

PROPAGATION AND CULTURE.

Theſe graſſes are eaſily propagated by the ſeed, or by parting the roots in autumn. None of them are cultivated for feeding cattle; though both *ciliata* and *nutans* are ſaid by ſome to be very agreeable to ſheep. M. nutans and uniflora being elegant graſſes deſerve a place in curious gardens, together with ſome of the Cape ſpecies.

MELICOCCA. (*So named by Browne, from* μελι, *honey, and* κοκκος *grannm, a grain or ſeed.*)

Lin. gen. n. 472. *Reich. n.* 514. *Schreb. n.* 648. *Jacqu. amer.* 108. *Gærtn. t.* 42. *Juſſ.* 248.

Claſſ. 8. 1. Octandria Monogynia.—Polygamia Dioecia. *Sm.*

Nat. order of *Sapindi*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-parted: *leaflets* ovate, concave, blunt, ſpreading.

COR. *Petals* four, oblong, equal, bent back entirely among the leaflets of the calyx.

STAM. *Filaments* eight, awl-ſhaped, upright, ſhort. *Anthers* oblong, upright.

PIST. *Germ* ovate, almoſt the length of the corolla. *Style* very ſhort. *Stigma* large, ſubpeltate, extended on both ſides, oblique.

PER. *Drupe* barked, roundiſh, bluntly acuminate.

SEED. *Nut* coriaceous, roundiſh, ſmooth.

OBS. PER. *Berry* ovate, acuminate, coriaceous, thickiſh, one-celled.

SEED ſingle (ſeldom two or three) ovate, grooved on one ſide, berried with a glutinous pulp.

ESSENTIAL CHARACTER.

Cal. four-parted. *Pet.* four, bent back below the calyx. *Stigma* ſubpeltate. *Drupe* (or berry) coriaceous.

SPECIES.

1. Melicocca bijuga.

Lin. ſpec. 495. *Juſſ.* 360. *Reich.* 2. 157. *Gærtn. fruct.* 197. *t.* 42. *Swartz obſ.* 146. *Jacqu. amer.* 108. *t.* 72. *pict.* 55. *Brown. jam.* 210. *Pluk. phyt. t.* 207. *f.* 4.

DESCRIPTION, *&c.*

This is a tree with a middle-ſized unarmed trunk. Branches ſpreading. Leaves pinnate, with two pairs of leaflets. Common petiole elongated, almoſt round, but a little compreſſed between the leaflets, ſeldom winged. Leaflets ſubſeſſile or on very ſhort petioles, ovate, acuminate at both ends, entire, nerved, ſmooth on both ſides, bright green. Racemes compound, terminating; branchlets alternate, ſimple, upright, many-flowered. Male flowers more abundant, deciduous, more yellow: the hermaphrodites ſcarcely larger. Nectary and anthers yellow. Drupe twice as large as a nutmeg, with a thin and ſomewhat briſtle bark covering the nut, which has a ſweet acid gelatinous ſubſtance in it, like the yolk of an egg [8].—Gærtner deſcribes it as a ſuperior ovate berry, ſmooth or rugged with ſmall miliary granules, acuminate at top or at both ends, coriaceous thickiſh, one-celled, having a groove on one ſide.

Jacquin was informed at Curaçoa that there were male and female trees, but Swartz has aſcertained that one tree bears hermaphrodite flowers, another male flowers, and that the latter are moſt common. They flower in april, and the fruit is ripe about midſummer.

Native of South America, and cultivated in the Eaſt Indies. Browne ſays it was brought to Jamaica from Surinam; that it thrives well in the low lands about Kingſton, riſing ſometimes to the height of ſixteen or eighteen feet or more; that the fruit is very mellow and grows to the ſize of a large plum, and that it ſeldom brings more than one ſtone or ſeed to perfection. He calls it Genip tree, which is from the Dutch *Knippen*. The Spaniards call it *Monos*. According to Jacquin it is wild about Carthagena, and commonly cultivated at Curaçoa. It was introduced here in 1778, by Thomas Clark, M. D.

MELICOPE. (*So named by Forſter, from* μελι, *honey, and* κωπη *a ſection or inciſion: the nectary being very much cut.*)

Lin. gen. Schreb. n. 656. *Forſt. gen. t.* 28. *Juſſ.* 429. Entogamum, *Banks. Gærtn. t.* 68.

Claſſ. 8. 1. Octandria Monogynia.

[1] Curtis. [2] Lightfoot. [3] Linn. mant. [4] Gmelin. [5] Hort. kew. [6] Willdenow. [7] Linn. ſuppl. [8] Swartz. [9] Hort. kew.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, four-parted, permanent.
COR. *Petals* four, ovate-oblong, acute, longer than the calyx.
Nectary, glands four, large, twin, furrounding the germs.
STAM. *Filaments* eight, awl-fhaped, erect, fhorter than the corolla, inferted into the receptacle on the outfide of the nectary. *Anthers* fubcordate, erect.
PIST. *Germ* four, fuperior. *Style* filiform, longer than the ftamens, deciduous. *Stigma* four-cornered, flatted, concave at the centre.
PER. *Capfules* four, elliptic, compreffed, divaricated, one-celled, gaping at the upper margin.
SEEDS folitary, elliptic, compreffed.

ESSENTIAL CHARACTER.

Cal. inferior, four-leaved. *Pet.* four. *Nect.* Glands four, twin. *Capf.* four, one-feeded.

SPECIES.

1. Melicope ternata.
Forft. gen. 28. *flor. auftral. n.* 166.
Entogonum lævigatum. *Gærtn. fruct.* 1. 331.
Native of New Zealand.

MELICYTUS. (*So named by Forfter, from* μελι, *honey, and* κυτος, *a cavity or hollow: the anthers being faftened to the cavity of the nectary.*)
Lin. gen. Schreb. n. 1513. *Forft. gen.* 62. *Gærtn.* 1. 44. *Juff.* 428.
Claff. 22. 5. Dioecia Pentandria.

GENERIC CHARACTER.

* *Male.*
CAL. *Perianth* five-toothed, very fhort.
COR. *Petals* five, ovate, acute, horizontal, longer than the calyx.
Nectary: fcales five, clubbed, cup-fhaped, excavated at top, ftaminiferous on the infide, upright.
STAM. *Filaments* none. *Anthers* five, ovate-roundifh, four-grooved in front, faftened longitudinally to the nectanes within, and a little longer.
* *Female.*
CAL. and COR. as in the males.
Nectary: five fcales, triangular, acute, incumbent on the germ, fhorter than the calyx.
PIST. *Germ* ovate. *Style* very fhort. *Stigma* flat, four or five-lobed: lobes rounded, fmall.
PER. *Capfule* berried, globular, fmooth, coriaceous, one-celled, four or five-valved.
SEEDS about five, convex on one fide, angular on the other, neftling in the pulp.

ESSENTIAL CHARACTER.

Cal. five-toothed. *Cor.* five-petalled, three times as long as the calyx. *Nect.* five fcales.
MALE. *Anthers* five, without filaments, faftened to the infide of the nectary.
FEM. *Stigma* flattened out, four or five-lobed. *Capf.* berried, one-celled. *Seeds* neftling.

SPECIES.

1. Melicytus ramiflorus.
Forft. gen. 62. *flor. auftral. n.* 371.
M. umbellatus. *Gærtn. fruct.* 1. 206.
Native of New Zealand. Found in Queen Charlotte's Sound november the 10th, 1774.

MELILOBUS. See *Glediftia.*

MELILOT and] MELILOTUS. See [*Medicago, Trifolium,*] *Trigonella.*

MELISSA. (*A bee, from* μελι, *honey.*)
Lin. gen. n. 728. *Reich. n.* 786. *Schreb. n.* 983. *Tournef.* 1. 91. *Juff.* 115. Calamintha. *Tournef.* 1. 92. Horminum. *Ed. pr.*
Claff. 14. 1. Didynamia Gymnofpermia.
Nat. order of *Verticillatæ. Labiatæ,* Juff.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, fubcampanulate, dry-fcariofe, fpreading a little, angular, ftriated, permanent, with a two-lipped mouth. *Upper lip* three-toothed, reflex-fpreading, flat. *Lower lip* fhorter, fharpifh, two-parted.
Cor. one-petalled, ringent. Tube cylindrical. *Throat* gaping. *Upper lip* fhorter, erect, arched, roundifh, bifid. *Lower lip* trifid: middle fegment larger, cordate.
STAM. *Filaments* four, awl-fhaped, two the length of the corolla, two fhorter by half. *Anthers* fmall, converging in pairs.
PIST. *Germ* four-cleft. *Style* filiform, the length of the corolla, inclining along with the ftamens beneath the upper lip of the corolla. *Stigma* flender, bifid, reflex.
PER. none. *Calyx* larger, unchanged, foftering the feeds in its bofom.
SEEDS four, ovate.

ESSENTIAL CHARACTER.

Cal. dry, flattifh above: upper lip fubfaftigiate. *Cor.* upper lip fomewhat arched, bifid; lower lip with the middle lobe heart-fhaped.

SPECIES.

1. Meliffa officinalis. *Officinal* or *common garden Baum* or *Balm.*
Lin. fpec. 827. *Reich.* 3. 83. *hort. cliff.* 307. 1. *vpf.* 163. *mat. med.* 152. *Woodv. med. bot.* 398. *t.* 147. *Hall. helv. n.* 242. *Scop. carn. n.* 739. *Sauv. monfp.* 149. *Villars dauph.* 2. 368. *Krock. filef. n.* 959. *Knoph. cent.* 4 *n.* 48. *Sabb. hort.* 3. *t.* 61. *Zorn. ic.* 134. *Berg. phyt.* 2. 197.
Meliffa. *Riv. mon. t.* 45. *Ger.* 558. *emac.* 689. *Raii hift.* 570.
M. hortenfis. *Bauh. pin.* 229. *Mor. hift. f.* 11. *t.* 21. *f.* 1.
M. vulgaris. *Park. theat.* 40.—odore citri. *Bauh. hift.* 3. 232. *Mor. hift.* 3. 408.
Meliffophyllum. *Blackw. herb. t.* 27.
Apiaftrum f. Meliffophyllum. *Lob. ic.* 277.
β. Meliffa romana. *Roman Baum. Mill. dict. n.* 2.
Racemes axillary verticiled, pedicels fimple.
2. Meliffa grandiflora. *Great-flowered Baum.*
Lin. fpec. 827. *Reich.* 3. 84. *Scop. carn. n.* 732. (Thymus). *Villars dauph.* 2. 369. *Knoph. cent.* 7. *n.* 56. *Curt. magaz.* 208. *Berg. phyt.* 2. 203.
Calamintha magno flore. *Bauh. pin.* 229. *Riv. mon. t.* 46. *Mor. hift. f.* 11. *t.* 21. *f.* 1.
C. montana præftantior. *Lob. ic.* 512. *Ger.* 556. 2. *emac.* 687. *Park. theat.* 37. 2. *Beft. eyft. æft.* 7. *t.* 7. *f.* 1. *Raii hift.* 569.
C. mont. magno flore ex calice longo. *Bauh. hift.* 3. 229.
Peduncles axillary dichotomous the length of the leaves, calycine fegments almoft equal.
3. Meliffa Calamintha. *Mountain Baum* or *Calamint.*
Lin. fpec. 827. *fyft.* 542. *Reich.* 3. 84. *hort. cliff.* 307. 2. *mat. med.* 153. *Hudf. angl.* 263. *Wither. arr. ed.* 2. 626. *Relh. cant. n.* 448. *Hall. helv. n.* 241. *Crantz. auftr.* 285. *Neck. all. palat.* 2. 473. *Villars dauph.* 2. 369. *Knoph. cent.* 4. *n.* 47. *Lindw. edit. t.* 33. *Bulliard fr.* 251. *Zorn. ic.* 111. *Berg. phyt.* 2. 201.
Thymus Calamintha. *Scop. carn. n.* 733.
Calamintha. *Camer. epit.* 481. *Riv. mon. t.* 46.
C. vulgaris. *Park. theat.* 36. *Raii hift.* 569. *fyn.* 243. *Pet. brit. t.* 34. *f.* 1.
C. vulg. officinarum. *Ger. emac.* 687. 3.
C. vulg. vel. offic. Germaniæ. *Bauh. pin.* 228. *Mor. hift. f.* 11. *t.* 21. *f.* 3.
C. flore magno vulgaris. *Bauh. hift.* 3. 228.
C. montana. *Dod. pempt.* 98. 1. *Blackw. herb. t.* 166. *Beft. eyft. æft.* 7. *t.* 7. *f.* 2.—vulgaris. *Lob. obf.* 274. 2. *ic.* 1. 513. 1.
Peduncles axillary dichotomous the length of the leaves, lower lip of the calyx longer than the upper fegments.
4. Meliffa Nepeta. *Field Baum* or *Calamint.*
Lin. fpec. 828. *fyft.* 542. *Reich.* 3. 84. *hort. cliff.* 308. 3. *Hudf. angl.* 263. *Wither. arr. ed.* 2. 626. *Relh. cant. n.* 449. *Curt. lond. n.* 69. *Giffcke ic.* 1. *n.* 14. *Gron. virg.* 1. 65. 2. 90. *Hall. helv. n.* 240. *Sauv. monfp.* 149. *Villars dauph.* 2. 369. *Blackw. t.* 167.
Calamintha odore pulegii. *Ger. emac.* 687. 3. *Raii hift.* 569. *fyn.* 243.—f. Nepeta. *Bauh. pin.* 228.—altera odore pul. foliis maculofis. *Park. theat.* 36. 3.—flore minore, od. pul. *Bauh. hift.* 3. 229. *t.* 230. *f.* 1.
C. folio incano. *Riv. mon. t.* 47.
Pulegium fylveftre f. C. altera. *Dod. pempt.* 98. 2.

C. alt. od. gravi Pul. fol. mac. *Lob. obſ.* 275. 1. *ic.* 513. 2.

β. C. montana præalta, pul. od. *Bocc. muſ.* 2. *t.* 40. & 38. *Knipb. cent.* 7, *n.* 57.

Peduncles axillary dichotomous longer than the leaf, calycine ſegments equal.

5. Meliſſa erecta. *Cretan Baum.*

Lin. ſpec. 828. *ſyſt.* 543. *Reich.* 3. 85.

Calamintha incana, Ocymi folio. *Baub. pin.* 228.

C. fol. et flore parvo incana. *Baub. hiſt.* 3. 230. *f.* 2. *Raii hiſt.* 569.

C. minor incana. *Park. theat.* 36. *t.* 37. *f.* 4.

C. montana vulgaris. *Ger* 556. 1. *emac.* 687. 1.

C. pulegii odore minor. *Bar. ic.* 1166.

Racemes terminating, peduncles ſolitary very ſhort.

6. Meliſſa fruticoſa. *Shrubby Baum.*

Lin. ſpec. 828. *ſyſt.* 543. *Reich.* 3. 85. *D'Aſſa, arrog. n.* 546.

Calamintha hiſpanica fruteſcens marifolia. *Tournef. inſt.* 194.

C. montana incana minor. *Mor. hiſt.* 3. 413. *n.* 6.

Branches attenuated red like, leaves tomentoſe underneath, ſtem ſhrubby.

DESCRIPTIONS, *&c.*

1. Garden or common Baum has a perennial root, and an annual ſtalk, which is ſquare, branching, from two to three feet high. Leaves by pairs at each joint, two inches and a half long, and almoſt two inches broad at the baſe, growing narrower towards the top, indented about the edges; the lower ones upon pretty long foot-ſtalks. The flowers grow in looſe ſmall bunches from the axils in whorls, upon ſingle pedunculs. They are white, or yelloviſh, and appear in july.

[The leaves are hairy above, ſmooth beneath. The whorls are ſhorter than the leaves; the pedicels ſimple and unequal. Stipules ovate-lanceolate. Teeth of the calyx broader, awned. Corolla ſometimes tinged with red [a].

Baum or Balm is a native of the ſouthern parts of Europe, eſpecially in mountainous ſituations, in Switzerland, Carniola, Sileſia, the South of France, Italy. It was cultivated by Gerarde in 1596; and was probably much earlier in our gardens, having been ſo much celebrated among the Arabian phyſicians.

Baum in its recent ſtate has a weak roughiſh aromatic taſte, and a pleaſant ſmell, ſomewhat of the lemon kind, whence its name *Citrago* in Geſner. Anciently it was generally recommended in hypochondriacal affections, and by Paracelſus the *primum ens Meliſſæ* promiſed a complete renovation of man: even Hoffman and Boerhaave, probably biaſſed by the Arabian phyſicians, deemed it an efficacious remedy. It is now only uſed as tea, for a grateful diluent in fevers, either alone or acidulated with the juice of lemons. The eſſential oil probably poſſeſſes no qualities different from many other aromatics and cordials [b].

From the fondneſs of Bees for this plant it has been named *Apiaſtrum*, *Meliſſa*, *Meliſſophyllum* and by contraction *Meliſſophyllum*, and was directed by the ancients, among other herbs, to be rubbed upon the kive, to render it agreeable to the ſwarm. It is known by its Greek name of *Meliſſa* in all the languages of Europe, except the Daniſh, in which it is *Hiertensfryd*, and in Engliſh *Bawme*, *Baum*, *Bauke* or *Balm*.]

Mr. Miller makes a diſtinct ſpecies of the *Roman Baum*, which grows naturally about Rome, and in other parts of Italy. The ſtalks are ſlender, the leaves much ſhorter, the whole plant hairy, and of a ſtrong diſagreeable odour. The flowers grow in whorls, ſitting pretty cloſe to the branches, and are ſmaller than thoſe of the common ſort.

2. This alſo has a perennial root, and an annual ſtalk, riſing about a foot high. Leaves in pairs at each joint, an inch and half long, and three quarters of an inch broad, ſerrate, of a lucid green on their upper ſide, and whitiſh on the under. Single pedunculs come out from the axils, half an inch long, and dividing into two ſmaller ones, each ſuſtaining two flowers upon ſhort ſeparate pedicels. The flowers are large, of a purple colour. It flowers in june, and the ſeeds ripen in auguſt.

Native of Tuſcany, Auſtria, [Germany and the South of France. Cultivated in 1640, according to Parkinſon.—The leaves, when bruiſed, have the ſmell of garden Baum. There is a variety of it with white, and another with red flowers, both much inferior to the purple: it alſo has variegated leaves, as the common garden Baum [c].

3. Root perennial. Stem upright, four-cornered, woolly. Leaves in pairs, petioled, ovate-acuminate, hairy, dotted, very ſlightly ſerrate, much larger than thoſe of M. Nepeta. Pedunculs generally ſhorter than the leaves, ſometimes as long, and near the ends of the branches longer; three-forked, the lateral arms forked. Flowers twice as large as thoſe of M. Nepeta. Calyx with thirteen ribs, ſhort hair, and ſhining globules; ſegments fringed, and the mouth cloſed with long hairs; teeth pointing upwards after the corolla falls off, the three upper equal, the two lower longer and more pointed. Tube of the corolla beſet within with white club-ſhaped hairs: upper lip lilac-coloured within; lower lip pale within, but marked with three round dots, and a few ſhort ſtreaks of a deeper hue. Anthers double, purple; pollen whitiſh. Germs on a glandular receptacle. One ſegment of the ſtigma much longer than the other, and hooked [a].

Native of many parts of Europe, Italy, Spain, France, Switzerland, Auſtria, England, by the ſides of roads and corn fields. It flowers in auguſt.

4. Root perennial, ſomewhat oblique, crooked, round, woody, brown. Stems woody, divided juſt above the baſe into branches, which are from one to two feet in length, aſcending, obſcurely quadrangular, reddiſh towards the baſe, beſet with ſoft horizontal hairs. Leaves in pairs, rather remote, ſcarcely an inch long, on ſhort petioles, ſpreading, ſlightly keeled, reflex at the point, broad ovate, ſubcordate, bluntiſh, ſerrate, the margin rolled back, and ſlightly waved, wrinkled, ſoft, villoſe on both ſides, pale green, with pellucid dots. Flowers in whorls, very ſmall, pale blue, before they expand yelloviſh. Whorls halved, much longer than the leaves, few-flowered. Bractes few, ſmall, awl-ſhaped, one pair at each diviſion. Common pedunculs two, dichotomouſly branched, bearing four or ſix flowers, the laſt generally three flowers, the two outer of which have a pair of bractes, but the middle one is naked. Pedicels unequal, upright. Calyx with fifteen ſtreaks or ribs, beſet on the outſide with ſhort hairs and ſhining glands, ſmooth within, but cloſed at the mouth with long hairs; the three upper teeth equal, the two lower longer, equal, and more pointed; the ſtreaks and teeth of a brown purpliſh colour. Corolla longer than the calyx, ſlightly hairy: upper lip deeply emarginate, plaited at the back; lower lip beſet at the baſe with white club-ſhaped briſtles; lateral ſegments ovate, the middle one kidney-ſhaped, and marked on the inſide with reddiſh purple ſpots. Anthers two-celled, violet-coloured; pollen white. Germs ovate, on an orange-coloured receptacle. Style purpliſh [b].

Native of many parts of Europe, Italy, France, Switzerland, England; with us it chiefly affects dry chalky ſoils, by road ſides and in uncultivated places; flowering in auguſt, or from july to ſeptember.

It is ſometimes confounded with the preceding ſpecies.] Mr. Miller ſays, the ſtalks are longer and bend towards the ground; the leaves larger, more indented on their edges, and having a very ſtrong ſcent like Pennyroyal; the whorls of flowers ſet cloſer together. He appears from this not to have diſtinguiſhed theſe plants rightly. [The leaves and flowers are certainly ſmaller in this; the former more hoary; the whole plant is hairy. Krocker remarks, that the piſtil extends much more beyond the corolla than in the preceding ſpecies.

Both theſe ſeem to have been uſed indifferently in the old practice of medicine under the name of *Cala-*

[a] Krocker. [b] Woodville.

[a] Curtis. [b] Withering, Woodw. M. S. Relhan. [c] Curtis, Withering.

mintha. They have a ſtrong aromatic ſmell, approaching to that of Pennyroyal, and a moderately pungent taſte, ſomewhat like Spearmint; but warmer. Infuſions of the leaves were given as tea in weakneſſes of the ſtomach, flatulent cholics, and uterine obſtructions[1].]

5. Stems ſlender, a little woody. Leaves ſmall, roundiſh, hoary. Flowers ſmall and white, appearing in June. The ſeeds ripen in autumn. This ſpecies ſeldom continues more than two or three years.

[It bears ſome reſemblance to M. Nepeta. Stem humble, about a hand in height, ſtraight, very dark purple. Leaves ovate, ſparingly and bluntly ſerrate. Whorls many, compoſed of one-flowered leafleſs pedunicles, terminating the branches like a raceme. Bractes lanceolate. Calyxes brown. Corollas purpliſh white[2].

Native of the South of Europe. Cultivated by Mr. Miller in 1731[3].]

6. Stems ſlender, ſhrubby, about nine inches long, putting out ſmall, oppoſite ſide-branches. Leaves ſmall, hoary, ovate-acuminate, having much the ſame appearance with thoſe of Marum. Flowers in whorled ſpikes at the end of the ſtalks: they are ſmall and white; appear in July, and the ſeeds ripen in autumn. The whole plant has a ſtrong ſcent of Pennyroyal, and is of a ſhort duration.

[According to D'Aſſo, the ſtems are hoary and a foot high; the leaves ovate-rhomboidal, tomentoſe: flowers ſmall, pale purple.

It was cultivated in 1752, by Mr. Miller[4].]

PROPAGATION AND CULTURE.

1. Garden Baum is eaſily propagated by parting the root in October, time enough for the offſets to be eſtabliſhed before the froſts come on. The roots may be divided into ſmall pieces with three or four buds to each, and planted two feet apart in beds of common garden earth. The only culture they require is to keep them clean from weeds, and to cut off the decayed ſtalks in autumn, then ſtirring the ground between them.

The other ſorts may be increaſed and treated in the ſame manner.

5. If the ſeeds of this be permitted to ſcatter, there will be a ſufficient ſupply of young plants.

6. This may be increaſed by ſeeds, or by cuttings, planted in any of the ſummer months, and ſhaded from the ſun. On a warm border they will frequently live through the winter; but it is prudent to keep a plant or two in pots, ſheltered under a frame, in winter.

[MELISSA. See *Ballota, Cunila, Dracocephalum, Hormimum, Mellitis, Molucella, Perilla, Prafium, Salvia, Satureia.*

MELISSOPHYLLUM. See *Melittis.*]

MELITTIS. *(From μελισσα, a Bee: uſed by Pliny as ſynonymous with Meliſſa.)*

Lin. gen. n. 731. *Reich. n.* 789. *Schreb. n.* 985. *Juſſ.* 116.

Claſſ. 14. 1. Didynamia Gymnoſpermia.

Nat. order of *Verticillatæ*, *Labiatæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, round, ſtraight, with a two-lipped mouth. *Upper lip* higher, emarginate, acute; *lower* ſhorter, bifid, acute, with the diviſions gaping.

COR. one-petalled, ringent: *tube* much narrower than the calyx: *opening* ſcarcely thicker than the tube: *upper lip* erect, roundiſh, entire; *lower* ſpreading, trifid, blunt, middle ſegment larger, flat, entire.

STAM. *Filaments* four, awl ſhaped, under the upper lip, the middle ones ſhorter than the two outer. *Antheræ* converging by pairs in form of a croſs, bifid, blunt.

PIST. *Germ* blunt, four-cleft, villoſe. *Style* filiform, the length and ſituation of the ſtamens. *Stigma* bifid, acute.

PER. none. *Calyx* unchanged, containing the ſeeds at the bottom.

SEEDS four.

OBS. *The lower lip of the calyx is ſometimes crenated.*

[1] Lewis. [2] Linn. [3] Hort. Kew. [4] Ibid.

ESSENTIAL CHARACTER.

Cal. wider than the tube of the corolla. *Cor.* upper lip flat, lower crenated. *Antheræ* croſs-wiſe.

SPECIES.

1. Melittis Meliſſophyllum. *Baſtard Baum.*
Lin. ſpec. 832. *ſyſt.* 544. *Reich.* 3. 91. *hort. cliff.* 309. *Huſſ. angl.* 264. *Wither. arr. ed.* 2. 627. *Curt. lond. n.* 68. *Villars dauph.* 2. 394. *Mill. illuſtr.*
Meliſſophyllum verum. *Fuchſ. hiſt.* 498. *Ger. emac.* 690. *f.* 3. 3. *Park. theat.* 41. 4. *Lob. obſ.* 277. 2. *ic.* 1. 515. 1. *Raii ſyn.* 242.
Meliſſa adulterina. *Bauh. hiſt.* 3. 233. 1, 2.
Lamium montanum Meliſſæ folio. *Bauh. pin.* 231. *Raii hiſt.* 561.
[β. *Alpine Baſtard Baum.*
Jacqu. auſtr. 1. 18. *t.* 26. *Hall. helv. n.* 244. *Scop. carn. n.* 76. *Kreck. ſilef. n.* 960. *Knipb. cent.* 6. *n.* 60. *Riv. mon. t.* 21. (Meliſſophyllum).
Lamium pannonicum verſicolore — & albo flore. *Clus. hiſp.* 2. 37. *f.* 1, 2.
a. With elliptic leaves. β. *With ovate ſubcordate leaves.*
2. Melittis japonica.
Thunb. in Linn. tranſ. 2. 328.
Leaves alternate ovate obtuſe unequally ſerrate, calyx villoſe.]

DESCRIPTION, &c.

1. Root perennial, ſending up in the ſpring three, four or more ſtems, a foot and half high, [or more, upright, with a few branches at the baſe. The whole plant is hairy. Leaves oppoſite, petioled, ovate, elliptic, or ovate-lanceolate, ſomewhat pointed, unevenly and bluntly ſerrate, the ſerratures terminating in purpliſh glands, ſlightly villoſe, wrinkled; petioles channelled above, hirſute, united at the baſe. Flowers large, handſome, growing chiefly on one ſide, in half whorls about ſix flowers together. Pedunels round, ſomewhat hairy, axillary, the length of the petioles. Calyx ſomewhat inflated, veiny, ſmooth except the veins which are ſomewhat hairy: border on the upper ſide turned outwards like a ſpout, with a lanceolate ſegment on each ſide, the lower lip cut off and finely ſerrate: but the diviſions of the lips are inconſtant. Corolla ſlightly villoſe, white ſtained with purple; the middle ſegment of the lower lip full purple edged with white, and the edge finely notched. Filaments villoſe, ſhorter than the corolla. Seeds of a blackiſh colour[5].

Mr Curtis remarks, that the cruciform appearance of the anthers ought not to form a part of the eſſential character, being common to many of the didynamous plants; we may add, that it is a character which is apparent only for a ſhort time.

He remarks farther, that moſt authors deſcribe the Melittis as having an unpleaſant ſmell: the freſh herb when bruiſed partakes of the ſcent of Balm, and of ſtinking Horehound (Ballote); but when dried it becomes delightfully fragrant: the flowers when they firſt open are odoriferous.

Native of ſeveral parts of Europe: with us in the weſtern parts of the kingdom only, as in Devonſhire, about Totnels, Barnſtaple, &c. Hampſhire, in the New Foreſt; Pembrokeſhire, about Haverford Weſt; in woods and ſhady places. It flowers in may or june.

β. Cluſius mentions a variety in all reſpects ſmaller, the leaves more like thoſe of Lamium purpureum, ovate and heart-ſhaped, or at leaſt more inclining to that figure than our plant; the flowers are not ſo large as ours; they are uſually of a pale red, and ſometimes white. It is a native of Switzerland, Auſtria, &c.

Much honey is ſecreted from a gland that encircles the baſe of the germ; hence this is a favourite plant with bees, and it accords well with its name Melittis[6].]

2. Stem upright, villoſe, ſimple, a ſpan high. Leaves petioled doubly ſerrate, villoſe, ſpreading, a finger's length. Flowers peduncled, ſolitary in the axils of the leaves. Peduncle rough-haired, an inch long. Calyxes ſtrigoſe-hirſute, drooping[7].

[5] Curtis, Withering. [6] Curtis. [7] Thunberg.

Native

Native of Japan. When Thunberg publiſhed his Flora Japonica he was not aware that this is different from the European plant.

PROPAGATION AND CULTURE.

1. This is a handſome plant, continuing in flower three weeks or a month, if the ſeaſon is not very hot. As it rarely produces good ſeeds in the gardens, it is uſually propagated by parting the roots; but where the plants are intended for ornament, the roots ſhould not be diſturbed oftener than every third year; nor ſhould they then be divided into ſmall parts, leſt thereby they ſhould not flower the firſt year. The beſt time to remove and part the roots is the beginning of october, that they may have time to get root before the froſt comes on. They ſhould have a loamy ſoil and an eaſt expoſure, where the plants will thrive and produce flowers in plenty.

MELO and MELON. See *Cucumis*.

MELOCACTUS. See *Caſtus*.

MELOCHIA.

Lin. gen. n. 829. *Reich. n.* 894. *Schreb. n.* 1110. *Gærtn. t.* 113. *Juſſ.* 274. *Dill. elth.* 176. *Cavan. diſſ.* 6. 318.

Claſſ. 16. 2. Monadelphia Pentandria.

Nat. order of *Columniferæ*. *Malvaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* (often double: *outer* one-fided, three-leaved: *inner*) one-leafed, half-five-cleft: *ſegments* half-ovate, acute, permanent.

COR. *Petals* five, obcordate, ſpreading, large.

STAM. *Filaments* five, awl-ſhaped, united at the baſe into a pitcher involving the germ. *Anthers* ſimple.

PIST. *Germ* roundiſh. *Styles* five, awl-ſhaped, erect, the length of the ſtamens, permanent. *Stigmas* ſimple.

PER. *Capſule* roundiſh or five-cornered, five-celled, five-valved: valves acute: partitions contrary, doubled.

SEEDS ſolitary or in pairs, on one ſide roundiſh, on the other angular compreſſed.

OBS. *The calyx in ſome ſpecies is double, in others ſingle.*

ESSENTIAL CHARACTER.

Five-ſtyled. *Capſ.* five-celled, one-ſeeded.

SPECIES.

1. Melochia pyramidata. *Pyramidal Melochia.*
Lin. ſpec. 943. *ſyſt.* 611. *Reich.* 3. 304. *hort. cliff.* 342. *Loeſl. itin.* 255. *Gærtn. fruct.* 2. 153. *t.* 113. *Swartz obſ.* 255. *Brown. jam.* 276. 3. *Pluk. phyt. t.* 131. *f.* 3. (Althæa).
Abutilon herbaceum procumbens, betonicæ folio, flore purpureo. *Sloan. jam.* 1. 220.
Flowers umbelled, capſules pyramidal five-cornered, angles mucronate, leaves naked.

2. Melochia tomentoſa. *Downy Melochia.*
Lin. ſpec. 943. *ſyſt.* 611. *Swartz obſ.* 256. *Jacqu. amer.* 193. *Brown. jam.* 276. 1.
Abutilon arboreum ſpicatum, betonicæ folio incano, flore minore purpureo. *Sloan. jam.* 1. 219. *t.* 138. *f.* 2, 3.
Flowers umbelled axillary, capſules pyramidal, five-cornered, angles mucronate, leaves tomentoſe.

[3. Melochia crenata. *Notch-leaved Melochia.*
Vahl ſymb. 3. 86. *t.* 68.
Leaves roundiſh crenate tomentoſe marked with lines, umbels axillary and terminating peduncled.]

4. Melochia depreſſa. *Flat-fruited Melochia.*
Lin. ſpec. 943. *ſyſt.* 611. *Reich.* 3. 305. *Brown. jam.* 276. 2.
Abutilon americanum, ribeſii foliis, flore carneo, fructu pentagono aſpero. *Houſt. M.S. Mill. fig. t.* 3. *f.* 2.
Flowers ſolitary, capſules depreſſed five-cornered, angles blunt ciliate.

5. Melochia venoſa. *Veiny-leaved Melochia.*
Swartz prodr. 97.
Sida piloſa. *Mill. dict. n.* 17.
Peduncles diſtinct terminating many-flowered, leaves ovate ſerrate veined tomentoſe underneath, ſtem hairy.

6. Melochia concatenata.
Lin. ſpec. 944. *ſyſt.* 611. *fl. zeyl. n.* 247. *Pluk. phyt. t.* 9. *f.* 5. (Althæa).
Racemes cluſtered terminating, capſule globular ſeſſile.

[7. Melochia nodiflora.
Swartz prodr. 97. *Vahl ſymb.* 2. 78. *Sloan. jam.* 1. 219. *t.* 135. *f.* 2. (Abutilon).
Flowers conglobate axillary, capſules globular, leaves ovate acuminate ſmooth.

8. Melochia lupulina.
Swartz prodr. 97.
Racemes cluſtered axillary, calyxes inflated membranaceous, leaves ovate-cordate gaſh-ſerrate tomentoſe underneath.

9. Melochia corchoriſolia. *Red Melochia.*
Lin. ſpec. 944. *ſyſt.* 611. *Reich.* 3. 305. *fl. zeyl. n.* 246. *Knipb. cent.* 9. *n.* 66. *Dill. elrh.* 221. *t.* 176. *f.* 217. *Pluk. phyt. t.* 44. *f.* 5. (Althæa). *Rheed. mal.* 9. 143. *t.* 73. (Tsjeru-tiren).
Flowers in ſeſſile heads, capſules roundiſh, leaves ſubcordate ſublobate.]

10. Melochia ſupina. *Proſtrate Melochia.*
Lin. ſpec. 944. *ſyſt.* 611. *Reich.* 3. 306. *Pluk. phyt. t.* 132. *f.* 4. (Alcea).
Flowers in heads, leaves ovate ſerrate, ſtems procumbent.

11. Melochia odorata. *Sweet-ſcented Melochia.*
Lin. ſyſt. 611. *ſuppl.* 302. *Forſt. flor. auſtral. n.* 253.
Panicles peduncled compound, leaves ovate ſubcordate ſublobate biſerrate ſmooth. Suppl.—*cymes corymbed axillary, leaves cordate acuminate ſerrate.* Forſt.

DESCRIPTIONS, *&c.*

There are ſome ſhrubby, others herbaceous, flowers axillary and terminating, ſometimes glomerate [a].

1. Stem ſhrubby at the baſe, branched, a foot high. Branches depreſſed, diffuſed, aſcending, ſimple, ſmooth. Leaves alternate, ovate, acuminate, ſerrate, nerved, ſmooth. Petiole ſhorter than the leaves, ſomewhat erect, ſlender. Flowers peduncled, ſubumbelled. Peduncles lateral, oppoſite to the petioles, ſolitary, the length of the petioles, three-flowered. Corollas ſmall, blood-red, frequently cloſed. Calyx five-toothed; teeth erect, lanceolate, acute. Claws of the petals yellow at the baſe; border ſuberect, entire, blunt [b]. Capſule membranaceous, vaſcular-netted, from a ventricoſe baſe riſing into a ſhort pyramid, having five narrow wings at the corners produced near the baſe into a horizontal dagger-point: the valves open along theſe wings, and are accompanied within by a middle ſeptum. Seeds two, ſeldom only one, ovate, acuminate downwards, convex on one ſide, on the other angular with a longitudinal white line, ſmooth, of a brown ruſt-colour; faſtened by a very ſhort umbilical chord to the central margin of the ſepta or partitions [c]. According to Swartz the ſeeds are ſolitary and oblong—according to Miller, ſolitary, and angular.

Swartz aſſures us, that M. dominicenſis of Jacquin certainly differs from this, the ſtem being four feet high, the leaves two inches long, &c. If ſo, M. pyramidata of Miller is not the ſame with that of Swartz, for he deſcribes it as four or five feet high, and ſays that the flowers are of a pale fleſh-colour.

Browne deſcribes it as a very elegant little plant, commonly ſhooting to the height of three feet or more, ſo ſlender and weak as generally to require ſome ſupport. The umbels of flowers are uſually placed pretty near, and each has five or ſix rays, on a common peduncle.

Native of Brazil and Jamaica. Cultivated by Mr. Miller in 1768.

2. This is an upright ſhrub, little branched, only three feet high in open rocky ſituations, but ſeven feet high in woods. Leaves oblong-ovate, tooth-ſerrate, acute, tomentoſe on both ſides, alternate, petioled, an inch and half long, with a ſtipule on each ſide. Common peduncles ſolitary, ſuſtaining in an umbel at top about five flowers with roſe-coloured corollas. Petals obovate, blunt, a little longer than the calyx, flat, erect, with a ſpreading border, the claws coaleſcing with the body of the filaments. Filaments the length of the corolla. Styles ſhorter than the ſtamens. Seeds one or two, angular [d].

According to Swartz, it is eaſily known from the preceding, by its being a ſhrub often a fathom in

[a] Juſſieu. [b] Swartz. [c] Gærtner. [d] Jacquin.

height,

height, with rod-like branches having a brown bark: leaves ſoft crenate, plaited, tomentoſe: peduncles umbelled, many-flowered: flowers larger, purple. Browne ſays, that the leaves are whitiſh, and the flowers of a light fleſh-colour.

Native of Jamaica, Martinico, St. Martin's and other iſlands of the Weſt Indies.

Swartz ſuſpects that M. domingenſis of Jacquin, which has been generally ſuppoſed to be the ſame with M. pyramidata of Linneus, may be a variety of this ſpecies.

3. This is a ſhrub with a purpliſh bark, and alternate, villoſe-tomentoſe, hoary branches. Leaves diſtant, ſcarcely an inch long or ſmaller, the younger ones tomentoſe on both ſides, ſoft, hoary, plaited, when older ſmoother above and marked with lines. Petioles ſhort, tomentoſe, hoary. Stipules ovate, hairy on the outſide, ſmooth within, one-third of the length of the petiole. Peduncles axillary, ſolitary, the length of the petiole, hirſute. Pedicels umbelled, uſually five, one-flowered; ſeldom ſingle, two-flowered: the length of the peduncle. Bractes briſtle-ſhaped, minute, deciduous, at the baſe of the pedicels. Calyx ſimple; ſegments lanceolate, hirſute, ſhorter by half than the corolla. Germ hirſute. Capſule oblong, five-cornered, hoary, twice the length of the calyx, terminated by the ſtyles, which are hirſute, and rounded at the angles.

Native of South America, where it was obſerved by von Rohr [a].

4. This riſes with a ſhrubby ſtalk five or ſix feet high. Leaves angular, reſembling thoſe of the Currant buſh. Flowers produced ſingly from the ſide of the ſtalk; they are of a fleſh colour, and in ſhape like thoſe of the ſmall-flowering Mallow. Capſules five-cornered, rough, incloſing five Mallow-ſhaped ſeeds.

[Browne ſays, it riſes commonly to the height of two or three feet, throwing out a few ſlender flexile branches on all ſides: the leaves ſpread themſelves every day about noon, to receive the heat of the ſun more freely, but as the air grows cooler, they generally riſe upright, and ſtand almoſt parallel to the ſtem or branches; this mechaniſm of the leaves is greatly forwarded by the knee in the footſtalk of each. It is found in many parts of Jamaica.] According to Miller, it was diſcovered at the Havannah, by Dr. Houſtoun.

5. Stem woody, four feet high, covered with brown hairs, and ſending out a few long ſlender branches, on the lower parts of which are leaves an inch and half long and three quarters of an inch broad, ſlightly ſerrate, and having many longitudinal veins: the upper parts have no leaves for more than a foot in length, and from their ſides come out peduncles two inches long, ſuſtaining ſeveral ſmall yellow flowers in cluſters, having hairy calyxes, cut at the top into ſeveral acute ſegments.

Found in South America by Dr. Houſtoun: [in Jamaica by Swartz.

6. This is a perennial, upright, ſmooth plant, with ſtiff branches. Leaves ſmooth, ovate-oblong, ſerrate, ſublobate at the baſe on both ſides, petioled. Racemes ſeveral in bundles, divaricating [b].

Natives of the Eaſt Indies.

7. This is a ſhrub, with round, alternate, ſmooth, purple branches, a little flexuoſe. Leaves two inches long and more, ſmooth on both ſides, nerve-veined above, with the veins purpliſh underneath, ſerrate, acute. Petioles pubeſcent, ſhort. Stipules lanceolate, briſtle-ſhaped, the length of the flowers, deciduous. Flowers conglomerate in the axils, ſeſſile, ſmall. Bractes ovate, the length of the flowers. Segments of the calyx ovate-acuminate. Corolla longer than the calyx [c].

Native of Jamaica and other iſlands of the Weſt Indies.

8. Native of Jamaica, where it was found by Swartz.

9. This is an annual plant, hardiſh and diffuſed, with rugged, rod-like branches. Leaves bluntiſh, naked, plaited, ſerrate. Flowers terminating. Corollas pale purple with a yellow bottom [d].—Native of the Eaſt Indies. Cultivated in 1732 by James Sherard, M. D. [e] from ſeeds ſent over by Jo. Phil. Breynius [f].]

10. This is an annual plant with trailing ſtalks, and ſmall Betony-ſhaped leaves. The flowers and fruit are produced in cluſters at the ends of the branches.—Native of the Eaſt Indies.

[11. This is ſmooth, but the peduncles are aſh-coloured with a very fine down. The leaves very much reſemble thoſe of the ninth ſort, but are much larger. Panicles on long peduncles and branched. Flowers large [g].

Native of the iſlands of Tanna and Tongataboo in the South Seas.

Viſenia indica of Gmelin; Viſenia umbellata of Houttuyn is the ſame as this [h].]

PROPAGATION AND CULTURE.

Sow the ſeeds on a hot-bed, and when the plants come up treat them in the ſame manner as is directed for SIDA. The ſhrubby ſorts may with care be preſerved through the winter in a ſtove, whereby good ſeeds may be obtained, for they ſeldom ripen their ſeeds well the firſt year, unleſs the plants are brought forward early in the ſpring, and the ſummer proves warm. The other ſorts generally ripen their ſeeds the ſame year they are ſown.

[MELOCHIA. See *Waltheria*.

MELODINUS. (*So named by Forſter, from μηλον an apple, and δινω to turn round; this plant bearing a round fruit like an apple, and having a twining ſtem by which it climbs trees.*)

Lin. gen. Schreb. n. 425. *ſuppl.* 23. *Forſt. gen.* 23. *Juſſ.* 148.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Contortæ. Apocineæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted, permanent: *leaflets* ovate, lying over each other at the edge.

COR. one-petalled, ſalver-ſhaped. *Tube* cylindrical, three times as long as the calyx. *Border* five-parted, flat: *ſegments* ſickle-ſhaped, crenulate, twiſted to the right, ſhorter than the tube.

Nectary in the mouth of the tube, ſtellate: *ſegments* five, cloven, lacerated.

STAM. *Filaments* five, awl-ſhaped, very ſhort, in the middle of the tube. *Anthers* ovate.

PIST. *Germ* globular, ſuperior. *Style* round, the length of the calyx, bipartile. *Stigma* conical, acute.

PER. *Berry* fleſhy, globular, many-ſeeded: with a fleſhy partition.

SEEDS numerous, ovate-roundiſh, flatted a little, neſtling.

ESSENTIAL CHARACTER.

Contorted. Neſt. in the middle of the tube, ſtellate. *Berry* two-celled, many-ſeeded.

SPECIES.

1. Melodinus ſcandens.

Lin. ſyſt. 256. *ſuppl.* 167. *Forſt. flor. auſtral. n.* 125.

DESCRIPTION, *&c.*

This is a very ſmooth ſhrub with a climbing ſtem. Leaves oblong-ovate, veined, quite entire, very ſmooth, oppoſite. It has a great affinity with Rauwolfia.

Native of New Caledonia [i]. Found there the 13th of ſeptember, 1774.

MELON. See *Cucumis.*

MELONGENA. See *Solanum.*

MELON THISTLE. See *Cactus.*]

MELOPEPO. See *Cucurbita.*

MELOTHRIA. (*Altered from* Melothron *of Pliny,* Meadow of Theophraſtus.)

Lin. gen. n. 50. *Reich. n.* 55. *Schreb. n.* 68. *Juſſ.* 395.

Claſſ. 3. 1. Triandria Monogynia.

Nat. order of *Cucurbitaceæ.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, ventricoſe, five-toothed, ſuperior, deciduous.

[a] Vahl. [b] Linn. [c] Hort. kew. [d] Dillenius. [e] Linn. ſuppl. [f] Dryander in Linn. tranſ. 2. 230. [g] Linn. ſuppl. [h] Vahl.

Cor. one-petalled, wheel-ſhaped. *Tube* the length of the calyx, and faſtened all round to it. *Border* five-parted, flat: ſegments broader outwards, very blunt.

Stam. *Filaments* three, conical, inſerted into the tube of the corolla, and of the ſame length. *Anthers* twin, roundiſh, compreſſed.

Pist. *Germ* ovate-oblong, acuminate, ſubinferior. *Style* cylindric, the length of the ſtamens. *Stigmas* three, thickiſh, oblong.

Per. *Berry* ovate-oblong, internally without the partitions three-parted.

Seeds ſeveral, oblong, compreſſed.

Obs. *Two male flowers were ſeen once, beſides the hermaphrodites.*

ESSENTIAL CHARACTER.

Cal. five-cleft. *Cor.* bell-ſhaped, one-petalled. *Berry* three-celled, many-ſeeded.

SPECIES.

1. Melothria pendula.
Lin. ſpec. 49. *ſyſt.* 82. *Reich.* 1. 94. *Willd.* 189. *hort. cliff.* 490. *upſ.* 15. *Gron. virg.* 10. *Knipb. orig. cent.* 4. *n.* 49. *Swartz obſ.* 26. *Brown. jam.* 124. *Pluk. phyt. t.* 85. *f.* 5. *Sloan. jam.* 1. 227. *t.* 142. *f.* 1. (Cucumis). *Plum. ſpec.* 3. *ic.* 66. *f.* 2. (Bryonia).

DESCRIPTION, *&c.*

1. This plant grows wild in the woods in Carolina, Virginia, and alſo in many of the iſlands in America; it creeps upon the ground with ſlender Vines, having angular leaves, ſomewhat reſembling thoſe of the Melon, but much ſmaller. Theſe Vines ſtrike out roots at every joint, which faſten themſelves into the ground, and thereby a larger ſhare of nouriſhment is drawn to the plants, by which means their ſtalks extend to a great diſtance each way, and cloſely cover the ground. The flowers are very ſmall, in ſhape like thoſe of the Melon, and of a pale ſulphur colour.

The fruit, in the Weſt Indies, grows to the ſize of a Pea, of an oval figure, and changes black when ripe; theſe are by the inhabitants ſometimes pickled when they are green.

In England the fruit are much ſmaller, and are ſo hidden by the leaves, as to render it difficult to find them.

[Peduncles filiform, lax, one-flowered [a]. Swartz ſays, that it always appeared to him to be monoecous, inſomuch that it differs from Cucumis only in having a berried fruit, which has exactly the ſame taſte with a green Cucumber.

Stem angular, ſtriated, filiform, weak, ſlender, even, two feet long, annual. Leaves flat, rugged, five-lobed, the front lobe divided with deeper ſinuſes, cordate at the baſe, the margin very ſlightly toothletted, on lax petioles, bent in at the baſe, alternate, remote, the length of the leaf; a very ſimple ſolitary long tendril comes out cloſe to the petiole. Peduncle axillary, ſolitary, briſtle-ſhaped, very long, one-flowered. A branch from the ſame axil, very like the ſtalk. Corolla yellow. Fruit the ſize of a Peony ſeed, tubercled, pendulous [b]. Browne ſays it is remarkable for the ſlender ſtalk and ſmall black oval berries.

It was cultivated in 1759, by Mr. Miller [c].]

PROPAGATION AND CULTURE.

The plants will not grow in the open air here, but the ſeeds muſt be ſown upon a hot-bed, and if the plants are permitted, will ſoon ſpread over the ſurface of a large bed; and when the fruit is ripe, if it ſcatters the ſeeds, the plants will come up where the earth happens to be uſed on a hot-bed again, and if they are ſupplied with water, will require no farther care. This plant is in ſome gardens preſerved for the ſake of variety, but is of no uſe.

[MEMECYLON (*of Pliny.* Μεμεκυλον *of Dioſcorides.*)
Lin. gen. n. 481. *Reich. n.* 522. *Schreb. n.* 657. *Juſſ.* 321. *Gærtn. t.* 127. 179.

Claſſ. 8. 1. Octandria Monogynia.

Nat. order of *Calycifloræ. Onagræ.* Juſſ.

[a] Linn. ſyſt. [b] Linn. hort. cliff. [c] Hort. kew.

GENERIC CHARACTER.

Cal. *Perianth* undivided, ſuperior, bell-ſhaped, turbinate, quite entire, with a pitcher-ſhaped ſtriated baſe, permanent.

Cor. *Petals* four, ovate, acute, ſpreading.

Stam. *Filaments* eight, erect, widened and truncated at top. *Anthers* ſimple, inſerted by their ſides into the apex of the filament.

Pist. *Germ* turbinate, inferior. *Style* awl-ſhaped. *Stigma* ſimple.

Per. *Berry* crowned with a cylindrical calyx.

Seeds

ESSENTIAL CHARACTER.

Cal. ſuperior with a ſtriated baſe and the margin quite entire. *Cor.* one-petalled. *Anth.* inſerted into the ſide of the apex of the filament. *Berry* crowned with a cylindrical calyx.

SPECIES.

1. Memecylon capitellatum.
Lin. ſpec. 497. *ſyſt.* 362. *Reich.* 2. 163. *fl. zeyl. n.* 136. *Burm. zeyl.* 76. *t.* 30. (Cornus).
Leaves ovate bluntiſh, heads axillary ſubpeduncled.

2. Memecylon grande.
Retz. obſ. 4. 26. *n.* 80.
Leaves ovate acuminate, peduncles axillary with many-flowered pedicels.

3. Memecylon umbellatum.
Gærtn. fruct. 2. 207.
β. Id. Ib. 483.

4. Memecylon edule.
Roxb. corom. 59. *t.* 82.
Leaves ovate acute, umbellets compound naked.

DESCRIPTIONS, *&c.*

1. This is a tree with round branchlets. Leaves ſmooth, oppoſite, quite entire, on very ſhort petioles. Peduncles axillary, oppoſite, ſolitary, ſhort, terminated by a head of flowers. Allied to Vaccinium, but the appearance is different.—Native of Ceylon [a].

2. This is a large tree, with round branches. Leaves oppoſite, quite entire, half a foot long. Peduncles alternate, four or five-cleft, with many-flowered pedicels. Anthers incumbent, all curved, perhaps in drying.—Native of the Eaſt Indies. Communicated by Koenig [b].

3. Berry inferior, globular, crowned with the calyx permanent tubular eight-ſtreaked within and ſpreading into a repandly quadrangular margin, or not ſtreaked and merely four-toothed, one-celled, ruſeſcent. Cuticle coriaceous, thin. Pulp watery, fugacious. Seeds two or only one, globular, very ſmooth and even, ſhining, pale cheſtnut coloured, with a depreſſed point at top.

β. Berry ſubglobular, twin, crowned with the bluntly four-toothed calyx, one-celled, two-ſeeded, ſmooth, of a pale ſtraw-colour. Bark becoming very thin and as it were papery by age. Tube of the calyx ſmooth and even within, without any veſtige of ſtreaks. Seeds two, hemiſpherical, very ſmooth and even, ſhining, dun-coloured. The berries are much ſmaller, with a thinner ſmooth bark, the calyx is not at all ſtriated within, the ſeeds are commonly in pairs, and the peduncles of the berries are longiſh and manifeſtly corymbed [c]. Gærtner affirms that this is certainly Samara læta of Linnæus; in which he is probably miſtaken.

4. Trunk very irregular in ſhape and ſize, covered with a dark-coloured ſcabrous bark. Branches numerous nearly erect. Leaves oppoſite ſhort-petioled, ovate, ſmooth, ſhining, firm, entire, with ſcarcely any veins; from three to four inches long, and from two to three broad. Umbellets many, compound, ſmall; from ſcabrous elevations, where the leaves ſtood, over the old woody branches. Peduncles common and partial, four-ſided. Pedicels round, coloured. Seldom more than one ſeed comes to perfection, though in the germs the rudiments of many are to be ſeen.

It is a very common ſmall tree or large ſhrub, in every jungle on the coaſt of Coromandel. It flowers about the beginning of the hot ſeaſon. The ripe

[a] Linn. zeyl. [b] Retzius. [c] Gærtner.

berries are eaten by the natives; they have much pulp of a bluish-black colour, and of an astringent quality.

MEMECYLUM. See *Epigæa*, *Samara*.

MENAIS.

Lin. gen. n. 239. *Reich. n.* 256. *Schreb. n.* 325. *Loefl.* 306. *D. Aymen. Juff.* 128.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Borragineæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* three-leaved: *leaflets* concave, lax, acuminate, ſmall, permanent.

COR. one-petalled, ſalver-ſhaped. *Tube* cylindrical, longer than the calyx. *Border* flat, five-parted, with rounded ſegments.

STAM. *Filaments* five, very ſhort, inſerted into the tube. *Anthers* awl-ſhaped, at the throat of the corolla.

PIST. *Germ* roundiſh. *Style* filiform, the length of the tube. *Stigmas* two, oblong.

PER. *Berry* globular, four-celled.

SEEDS ſolitary, ſubovate, ſharp at one end.

ESSENTIAL CHARACTER.

Cal. three-leaved. *Cor.* ſalver ſhaped. *Berry* four-celled. *Seeds* ſolitary.

SPECIES.

1. Menais topiaria.

Lin. ſpec. 251. *ſyſt.* 218. *Reich.* 1. 488. *Loefl. it.* 306.

DESCRIPTION, *&c.*

Stems round, ſomewhat villoſe. Leaves alternate, ovate, entire, rough.—Native of South America *.

MENANDRA. See *Lechea*.

MENDONI. See *Glorioſa*.

MENISCIUM. (*So named from the fructifications being in the form of a little Creſcent.*)

Lin. gen. Schreb. n. 1630. Aſplenium. *Jacqu. collect.* 2. *t.* 3. *f.* 2.

Claſſ. 24. 2. Cryptogamia Filices, or Ferns.

GENERIC CHARACTER.

Capſules heaped in creſcents, interpoſed between the veins of the frond.

SPECIES.

1. Meniſcium reticulatum.

Aſplenium ſorbifolium. *Jacqu. collect.* 2. 106.

Polypodium reticulatum. *Lin. ſpec. ed. Reich.* 4. 417.

Filix. *Plum. amer.* 6. *t.* 9. *fil.* 92. *t.* 110. *Pet. fil.* 10. *t.* 6.

DESCRIPTION, *&c.*

Root fibrous, black. Fronds ſeveral, pinnate, four feet long. Stipe black, grooved in front, angular, brown, appearing ſomewhat villoſe when magnified. Pinnas very many, alternate with an odd one, on ſhort petioles, from an ovate baſe long lanceolate, acuminate, crenate, a little ſickle-ſhaped at the end, ſmooth above, ſomewhat villoſe along the nerves underneath, from ſix to nine inches long, an inch or an inch and half wide. The midrib is prominent at the back, and at a very obtuſe angle puts forth on both ſides towards the edges numerous parallel nerves, which are alſo prominent: theſe are connected by ſeveral arched veins; whence the pinnas ſeen againſt the light appear like beds in a parterre. On theſe veins are placed as many arched-oblong, parallel, dark-ruſous fructifications, compoſed of very minute ſhining globules, thoſe which are next the midrib larger. They are not ſo cloſe upon the whole as in moſt of the Aſpleniums: nay they ſometimes exhibit diſtinct globules thinly placed.—Native of Martinico *, Brazil, &c.]

MENISPERMUM. (*From* Μην *the Moon, and* Σπερμα *a ſeed. The ſeed being ſhaped like a creſcent.*)

Lin. gen. n. 1131. *Reich. n.* 1238. *Schreb. n.* 1544. *Gærtn. t.* 46 & 70. *Tournef. mem. acad.* 1705. *Juſſ.* 285. *Mill. illuſtr.*

Claſſ. 22. 10. Dioecia Dodecandria.

Nat. order of *Sarmentaceæ*. *Meniſperma*, Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* two-leaved: *leaflets* linear, ſhort.

COR. *Petals* outer ſix, ovate, ſpreading, equal-inner eight, obcordate, concave, ſmaller than the outer, four of them in the inner row wider.

STAM. *Filaments* ſixteen, cylindric, a little longer than the corolla. *Anthers* terminating, very ſhort, bluntly four-lobed.

* *Female.*

CAL. and COR. as in the Male.

STAM. *Filaments* eight, like thoſe of the male. *Anthers* pellucid, barren.

PIST. *Germs* two or three, ovate, curved inwards, converging, pedicelled. *Styles* ſolitary, very ſhort, recurved. *Stigmas* bifid, blunt.

PER. *Berries* two or three, roundiſh-kidney-form, one-celled.

SEEDS ſolitary, kidney-form, large.

OBS. *The above character is from* M. canadenſe, *and ſhould be compared with the fructifications of the other ſpecies: the calyx being ſix-leaved, the corolla ſix-petalled, ſix ſtamens and three piſtils, according to Willich, Miller and others; or, according to Walter (carol.* 247.) *the calyx three-leaved, petals three, ſcales of the nectary ſix, ſix ſtamens, ſix germs without any ſtyles, and ſix berries.* S. Meeſia *of Gærtner, t.* 79. *ſeems allied to it.*

ESSENTIAL CHARACTER.

MALE. *Pet.* four outer, eight inner. *Stam.* ſixteen.

FEM. *Cor.* as in the male. *Stam.* eight, barren. *Berries* two, one-ſeeded.

SPECIES.

1. Meniſpermum canadenſe. *Canadian Moon-ſeed.*

Lin. ſpec. 1468. *ſyſt.* 892. *Reich* 4. 272. *hort. cliff.* 140. *upſ.* 91. *Gron. virg.* 153. 56. *Gmel. ſib.* 3. 107. *n.* 86. *Willich obſ.* 14. *Du Roi barbk.* 1. 405. *Mothe. in obſ. ſoc. econ. Lutr.* 1774. 226. *Mill. illuſt. Tournef. act.* 1705. 237. *Pluk. phyt. t.* 36. *f.* 2. (Hedera).

Leaves peltate cordate roundiſh-angular.

2. Meniſpermum virginicum. *Virginian Moon-ſeed.*

Lin. ſpec. 1468. *ſyſt.* 892. *Reich.* 4. 272. *Gron. virg.* 40. 56. *Dill. elth.* 223. *t.* 178. *f.* 219. *Raii hiſt.* 3. *app.* 253. *n.* 40. (Baccifera, &c.)

Upper leaves undivided, lower peltate cordate lobed.

[3. Meniſpermum japonicum. *Japoneſe Moon-ſeed.*

Lin. ſyſt. 892. *Thunb. jap.* 193.

Leaves peltate rounded-ovate entire.]

4. Meniſpermum carolinum. *Carolina Moon-ſeed.*

Lin. ſpec. 1468. *ſyſt.* 892. *Reich.* 4. 272.

Leaves cordate villoſe underneath.

[5. Meniſpermum Cocculus. *Jagged Moon-ſeed.*

Lin. ſpec. 1468. *ſyſt.* 892. *Reich.* 4. 273. *mat. med.* 216. *Gærtn. fruct.* 1. 219. *Gron. orient* 123. *Blackw.* 1. 389. *Pluk. phyt. t.* 13. *f.* 2. *Retz. obſ.* 6. 34. *n.* 71.

Cocculus officinarum. *Bauh. pin.* 511. *Pluk. mant. t.* 545. *f.* 2.

Tuba baccifera. *Rumph. amb.* 5. 35. *t.* 22.

Leaves cordate retuſe mucronate, ſtem jagged.

6. Meniſpermum criſpum. *Curled Moon-ſeed.*

Lin. ſpec. 1468. *ſyſt.* 892. *Reich.* 4. 273.

Leaves cordate exquiſite, ſtem quadrangular curled.

7. Meniſpermum acutum. *Sharp-leaved Moon-ſeed.*

Lin. ſyſt. 892. *Thunb. jap.* 193.

Leaves cordate behind angular acuminate, ſtem round ſtriated.

8. Meniſpermum orbiculatum. *Round-leaved Moon-ſeed.*

Lin. ſpec. 1468. *ſyſt.* 892. *Reich.* 4. 273. *Pluk. amalth. t.* 384. *f.* 6. *Burm. ind.* 316. *Thunb. jap.* 194.

Leaves orbicular villoſe underneath.

9. Meniſpermum hirſutum. *Hairy-leaved Moon-ſeed.*

Lin. ſpec. 1469. *ſyſt.* 892. *Reich.* 4. 273. *Pluk. amalth. t.* 384. *f.* 7.

Branch-leaves ovate, ſtem-leaves cordate villoſe tomentoſe underneath.

10. Meniſpermum edule. *Eatable Moon-ſeed.*

Vahl ſymb. 1. 80.

Cebatha edulis. *Forſk. deſcr.* 171.

Leaves oblong ſmooth, flowers ſix-ſtamened.

11. Meniſpermum myoſotoides.

Lin. ſpec. 1469. *ſyſt.* 892. *Reich.* 4. 273. *Pluk. amalth. t.* 384. *f.* 3.

Leaves linear-lanceolate hirſute.

* Linn. ſpec. * Jacquin.

12. Menispermum trilobum.
Lin. syst. 892. *Thunb. jap.* 194.
Leaves three-lobed.

13. Menispermum senestratum.
Gærtn. fruct. 1. 219.

DESCRIPTIONS, *&c.*

Flowers in spikes or racemes, supraaxillary or terminating, each furnished with its bracte [a].]

1. Root thick, woody. Stems many, climbing, becoming woody, and rising to the height of twelve or fourteen feet, twisting themselves about the neighbouring plants for support. Leaves large smooth, with the footstalk almost in the middle, and a hollow there on the upper side. The flowers come out in loose bunches from the side of the stem; they are of an herbaceous colour, small, and composed of two rows of oblong oval petals. Stamens very short, ten in the male flowers. Germs and berries two, in the female flowers, channelled, each containing one seed.

[The stem twines in a direction contrrary to the sun's apparent motion, and is smooth and even. Leaves rounded-cordate, five-angled, smooth and even, acuminate. Peduncle two-racemed, supraaxillary, nodding, shorter than the petiole [b].—Native of Virginia, Canada, and Siberia. Cultivated in 1713 by Bishop Compton. It flowers in june and july [c].]

2. This differs from the preceding in the shape of the leaves, which are angular and sometimes heart-shaped, but not peltate, having the footstalk at the base. The stems become woody, and rise nearly as high as those of the first sort. The flowers and berries do not differ from them.

[Stems round, slender, twining. Leaves alternate, bright green, the form, colour and consistence of Ivy leaves, on the upper part of the stem entire, as on old Ivy; on the middle and lower part not unfrequently angular, as in young Ivy; although they have very slender hairs on them, yet they have the appearance of being smooth and shining, especially the younger leaves, for the older ones are subhirsute and less shining; underneath they are of a paler green. The stems and petioles are villose. Flowers in small naked spikes from the upper axils, composed of six short, blunt, whitish petals. The germ and style appear to consist of five or six horns. Berries three, four or five together, black, small, moderately compressed, wrinkled. Seeds compressed, hard, wrinkled.—Native of Virginia and Carolina [d]. Cultivated in the Eltham garden about 1732.

3. Stem herbaceous, twining, striated with several angles, smooth in all parts, simple. Leaves alternate, acuminate, the point blunt and subretuse, glaucous underneath, the nerves running out from the centre, a hand in length. Petioles twining, grooved, scarcely twisted, a finger's length and more. Flowers axillary, decompoundedly subumbelled, pedicelled, dioecous. Peduncles striated, an inch long. Pedicels striated-angular, umbelled, scarcely a line in length. Berries two, obovate-subreniform, compressed, most at bottom, united on both sides by a large oblong groove, muricated, one-valved, one-celled. Seed white.—Native of Japan [e].]

4. This differs from the second sort in its branches not becoming woody as in that. The stems are herbaceous, the leaves entire and hairy, and not more than half so large as those of the second, nor is the plant so hardy, so that it does not produce flowers in England, unless the season prove very warm.—Native of Carolina. [Introduced in 1765 by Mr. John Cree [f]. Mr. Miller however cultivated this with the first and second sorts in 1759.

5. Drupes one, two or three, ovate-globular, fleshy, scarlet, smooth: shell subglobular, bony, somewhat rugged, gibbous on one side, compressed into an angle on the other, one-celled. Receptacle fungous, subcrose, semiglobular, inserted by a thick peduncle into the belly of the shell. Seed solitary, bullate, smoothish, rufescent, with a wide perforation for the receptacle to pass through it, marked with a ridge within [g]. This is not the *Natsjatam* of the Hortus Malabaricus.

The twisting stems are usually the thickness of the human arm or thicker, irregular, and covered with a thick, lacerated, wrinkled bark: the branches terminate in strong simple tendrils. Leaves alternate, firm, a span long, deep green above, very yellow and lanuginose underneath, on long stout petioles, bent in or flexuose near the base. Bunches of flowers a foot and half long, dividing into several lateral ones. Petals six, white, reflex. The flowers have an unpleasant smell. Fruit in bunches like grapes, but smaller; first white, then red, and finally blackish purple; usually two or three, seldom four together, on a thickish, pyramidal, wrinkled peduncle. Pulp soft. Stone round, like that of a Cherry, but a little larger, wrinkled and granulated, having a fissure or aperture on one side, and a white bifid kernel within. These berries are used to intoxicate fish, birds, &c. in order to take them, being made up into a paste [h].—Native of the East Indies.

6. Native of Bengal.

7. Stem twining, simple, all over smooth. Leaves alternate, roundish-ovate, deeply cordate, very long pointed, entire, nerved, somewhat netted, glaucous underneath, smooth, a hand in length and breadth. Petioles loose, round, striated, a little shorter than the leaf.—Native of Japan.

8. The whole of this plant is very finely villose. Stem round, twining, with alternate branches like the stem. Leaves alternate, on very short petioles, the lowest triangular-ovate, the branch-leaves ovate, the uppermost orbiculate, blunt with a point, entire, an inch long, the upper ones gradually smaller. Flowers axillary, panicled, dioecous.—Native of the East Indies and Japan.

9. Native of the East Indies. The heads on Plukenet's figure are galls of some insect.

10. The whole plant is smooth. Leaves petioled, mucronate, the lower ones emarginate. Petioles two lines in length. Peduncles scarcely so long. Calyx six-leaved. Corolla six-petalled. Berries kidney-form, two with the rudiment of a third. Stamens six. Pistils three. In habit so like M. hirsutum, that there is scarcely any limit between them [i].—Native of Arabia.

11. Native of the East Indies. Perhaps it may be only the female of the ninth species, which varies much in the form of the leaves [k].

12. Stem filiform, twining, little branched. All parts of the plant rough-haired and villose. Leaves alternate, acute with a long point, quite entire, nerved, paler underneath, an inch long. Petioles round, villose, reflex at the base. Flowers axillary, racemed, deciduous, dioecous. Peduncle round, very short. Pedicels smooth, one-flowered, scarcely half a line in length. In the male the perianth is three-leaved, very small, smooth, whitish; the segments round, concave: besides three leaves of the calyx, and often two others, very small like a calycle. Corolla three-petalled, bell-shaped, white. Petals rounded, blunt, entire, concave, half a line in length. Nectary six leaves, within the petals and alternate with them, linear, cloven at the top, white, the length of the corolla. Filaments fix, inserted into the leaves of the nectary, bent in at top, whitish, shorter than the nectary. Anthers round, yellow. In the female, the berry is globular, the size of a small pea. Seed single, globular, torulose, filling the berry.

Native of Japan, flowering in august and september [l]. Found also in the province of Kianang in China by Sir George Staunton.

13. Drupe berried, obovate, solitary, pubescent, hoary. Rind thin, becoming coriaceous, closely fastened to the shell; which is large, kidney-form or globular-flatted, bony, thick, crose on the outside, smooth within. Receptacle fungose-fleshy, from the base of the shell on a thick stalk, spread out into an irregular globe, filling the whole cavity of the seed, and diverging into various very irregular processes

[a] Jussieu. [b] Linn. spec. [c] Hort. kew. [d] Dillenius. [e] Thunberg. [f] Hort. kew.

[g] Gærtner. [h] Rumphius. [i] Vahl. [k] Dryander, M. S. [l] Thunberg.

received

received within the plaits of the albumen. Seed ſingle, ſubglobular, flatted a little, ſmooth on the outſide with a tranſverſe line, within hollow, with many turnings and windings, bullate, filled with the ſubſtance of the receptacle, having a wide perforation below. Skin ſingle, membranaceous, very thin, pale. Albumen of the ſame form with the ſeed, fleſhy like an Almond, thin, white, compoſed of two fleſhy laminæ, and diviſded into two leafy-compreſſed cells, in each of which each cotyledon reſides. Embryo almoſt the ſize of the albumen, inverted, green or yellowiſh. Cotyledons leafy, very thin, roundiſh and concave, but variouſly flexuoſe, perforated with many holes and as it were windowed by the impreſſions of the receptacle; ſo entirely ſeparated, that one inhabits the right and the other the left ſide of the ſeed, and both are oppoſite to each other. Radicle awl-ſhaped, very ſhort, ſuperior*. Native of Ceylon.

Gærtner remarks, that the ſpecies of this genus vary much in their number in the flower and fruit; but that they all not only agree in the poſition of the cotyledons, but differ from all other plants in having a diſtinct cell for each cotyledon.

Many of the ſpecies have only ſix ſtamens, and Willich has obſerved that many have three piſtils.]

PROPAGATION AND CULTURE.

1. 2. Theſe are eaſily propagated by laying down the branches in autumn. They will have made good roots by the following autumn, when they may be ſeparated from the old plant, and tranſplanted where they are deſigned to remain. Their branches being ſlender and weak, they require ſupport. If planted near trees, they will thrive better than in an open ſituation.

4. This may be propagated by parting the roots, which ſpread out on the ſide, to that part of them may be cut off every other year; the beſt time for doing this is in the ſpring, a little before the plants begin to ſhoot; theſe ſhould be planted in a warm ſituation and have a light ſoil, for in ſtrong land, where the wet is detained in winter, the roots are apt to rot; therefore if they are planted cloſe to a wall expoſed to the ſouth or weſt, their ſtalks may be faſtened againſt the wall, to prevent their trailing upon the ground; and in this ſituation the plants will frequently flower, and by having a little ſhelter in ſevere froſt, their ſtalks may be preſerved from injury.

MENTASTRUM. See *Hyſtropogon*.

MENTHA. (Menta of *Pliny*. *Muſhe of Theophraſtus*. *From a nymph of that name, daughter of Cocytus, fabled to have been changed into this herb by Proſerpine in a fit of jealouſy. Some derive it from* Mens, *the Mind; others from* Μινθιω, *or* απο του Μινθου, *ſuch is the uncertainty of derivation.*)

Lin. gen. n. 713. *Reich. n.* 771. *Schreb. n.* 967. *Tournef. t.* 89. *Juſſ.* 113.

Nat. order of *Verticillatæ* or *Labiatæ*.

GENERIC CHARACTER.

CAL. *Perianth* one-leaved, tubular, upright, five-toothed, equal, permanent.

COR. one-petalled. *Petals* upright, tubular, a little longer than the calyx. *Border* four-parted, almoſt equal; the upper ſegment wider, emarginate.

STAM. *Filaments* four, awl-ſhaped, upright, diſtant, the two neareſt longer. *Anthers* roundiſh.

PIST. *Germ* four-cleft. *Style* filiform, upright, longer than the corolla. *Stigma* bifid, ſpreading.

PER. none. *Calyx* upright, with the ſeeds in the bottom.

SEEDS four, ſmall.

ESSENTIAL CHARACTER.

Cor. almoſt equal, four-cleft, the broader ſegment emarginate. *Stam.* upright, diſtant.

SPECIES.

1. Mentha Auricularia.
Lin. ſyſt. 532. *Reich.* 3. 41. *mant.* 81. *mat. med.* 147.

M. fœtida. *Burm. ind.* 126.

Alopecuro-Veronica. *Lin. zeyl. n.* 431.

Veronica hirſuta latifolia zeylanica aquatica. *Burm. zeyl.* 228.

2. Mentha ſuiſaca.
Lin. ſyſt. 532. *Jacqu. hort.* 3. 46. *t.* 87. *Vahl ſymb.* 3. 75.

M. longifolia. *Forſk. cat. n.* 289.
Tomentoſe-hoary, ſpikes oblong, leaves ovate-lanceolate ſerrate ſeſſile.

3. Mentha glabrata.
Vahl ſymb. 3. 75.

M. kahirina. *Forſk. deſcr.* 213.
Flowers racemed-verticillate, leaves petioled ovate-lanceolate ſerrate ſmooth.

4. Mentha ſtellata.
Linn. cochinch. 361.
Spikes headed terminating, leaves ſtellate ſerrate.]

5. Mentha ſylveſtris. *Horſe Mint.*
Lin. ſpec. 804. *ſyſt.* 532. *Reich.* 3. 41. *hort. cliff.* 306. 2. *upſ.* 168. *mat. med.* 147. *Huſſ. angl.* 250. *Wilber. arr. ed.* 2. 596. *Reich. cant. n.* 422. *Hall. helv. n.* 227. *Fl. dan. t.* 484. *Pollich pal. n.* 550. *Villars dauph.* 2. 357. *Krock. ſilef. n.* 910. *Knipb cent.* 9. *n.* 67.

M. ſylveſtris longiore folio. *Bauh. pin.* 227. *Mor. hiſt. ſ.* 11. *t.* 6. *f.* 6.

Menthaſtrum. *Eyſhſ.* 292. *Trag.* 20. 1. *Riv. mon.* 51. *Blackw. t.* 292.

M. ſpicatum folio longiore candicante. *Bauh. hiſt.* 3. 221. *Raii hiſt.* 532. *ſyn.* 234. *Petiv. brit. t.* 31. *f.* 11.

β. Menthaſtri aquatici genus hirſutum, ſpica latiore. *Bauh. hiſt.* 3. 222. *Ger. emac.* 685. 5. *Raii ſyn.* 234.
Spikes oblong, leaves oblong ſerrate tomentoſe ſeſſile, ſtamens longer than the corolla.

6. Mentha viridis. *Spear Mint.*
Lin. ſpec. 804. *Reich.* 3. 42. *hort. cliff.* 306. 1. *Huſſ. angl.* 250. *Wilber. arr. ed.* 2. 597. *Woodv. med. bot.* 463. *t.* 170. *Hall. helv. n.* 229. *Villars dauph.* 2. 357. *Krock. ſilef. n.* 911. *Gron. virg.* 167. 89.

Mentha. *Camer. epit.* 477. *Dod. pempt.* 95. 3. 4.

M. romana. *Lob. obſ.* 271. 3, 4. *ic.* 1. 507. 2. & 508. 1. *Ger. emac.* 680. 3.—anguſtifolia ſ. Cardiaca. *Park. theat.* 31.

M. anguſtifolia ſpicata. *Bauh. pin.* 227. *Raii hiſt.* 532.

M. ſpic. fol. longiore acuto glabro nigriori. *Bauh. hiſt.* 3. 220.
Spikes oblong, leaves lanceolate naked ſerrate ſeſſile, ſtamens longer than the corolla.

7. Mentha rotundifolia. *Round leaved Mint.*
Lin. ſpec. 805. *Reich.* 3. 42. *Huſſ. angl.* 251. *Wilber. arr. ed.* 2. 598. *Engl. bot.* 446. *Reich. cant. n.* 423. *Hall. helv. n.* 226. *Pollich pal. n.* 551. *Villars dauph.* 2. 358. *Krock. ſilef. n.* 912.

M. ſylveſtris rotundiore folio. *Bauh. pin.* 227.

Menthaſtrum anglicum. *Riv. mon.* 51.

M. fol. rugoſo rotundiore ſpontaneum, flore ſpicato odore gravi. *Bauh. hiſt.* 3. 219. 2. *Raii hiſt.* 532. *ſyn.* 234. *Petiv. brit.* 31. 12.
Spikes oblong, leaves roundiſh rugged ſnuggy ſnarply ſerrate ſeſſile, bractes lanceolate, ſtamens longer than the corolla.

8. Mentha criſpa. *Curled Mint.*
Lin. ſpec. 805. *Reich.* 3. 42. *hort. cliff.* 306. 3. *upſ.* 168. *mat. med.* 147. *Hall. helv. n.* 230. *Krock. ſilef. n.* 913. *Knipb. cent.* 11. *n.* 75. *Riv. mon. t.* 50. *Linn. cochinch.* 360.

M. criſpa rotundifolia ſpicata. *Bauh. pin.* 227. *hiſt.* 3. 217. *Raii hiſt.* 531. 4.

M. cruciata. *Park. theat.* 31. 2. *t.* 32. *f.* 2.—ſ. criſpa. *Ger. emac.* 680. 2.
Flowers in heads, leaves cordate toothed waved ſeſſile, ſtamens equalling the corolla.

9. Mentha hirſuta. *Round-headed Mint, or Hairy Water Mint.*
Lin. ſyſt. 532. *Reich.* 3. 42. *mant.* 81. *Huſſ. angl.* 252. *Wilber. arr. ed.* 2. 598. *Engl. bot.* 447. *Linn barbara. n.* 436. *Krock. ſilef. n.* 914. *Linn. cochinch.* 361.

M. aquatica

* Gærtner.

M. aquatica f. Sifymbrium hirſutius. *Bauh. biſt.* 3. 224.
Sifymbria Mentha. *Ger.* 555. 2.
Sifymbrium hirſutum. *Raii ſyn.* 233. *t.* 10. *f.* 1.
β. Mentha Sifymbrium dicta hirſuta, glomeruli ac foliis minoribus ac rotundioribus. *Raii ſyn.* 233.
Flowers in denſe compound terminating heads, leaves ovate ſerrate ſubſeſſile pubeſcent, ſtamens longer than the corolla.
10. Mentha aquatica. *Water Mint.*
Lin. ſpec. 805. *ſyſt.* 532. *Reich.* 3. 43. *hort. cliff.* 306. 4. *fl. ſuec. n.* 517. *Huſſ. angl.* 252. *Wither. arr. ed.* 2. 598. *Lightf. ſcot.* 305. *Relh. cant. n.* 425. *Hall. helv. n.* 225. *Scop. carn. n.* 748. *Pollich pal. n.* 552. *Neck. gallob.* 250. *Villars dauph.* 2. 359. *Kreck. ſileſ. n.* 915. *Kniph. cent.* 11. *n.* 74.
M. paluſtris. *Mill. dict. n.* 11.
M. pal. ſpicata. *Riv. mon. t.* 49. *Blackw. t.* 32.
M. rotundifolia paluſtris f. aquatica major. *Bauh. pin.* 227. *Mor. biſt. f.* 11. *t.* 7. *f.* 6.
M. aquat. f. Sifymbrium. *Bauh. biſt.* 3. 223. *Ger. emac.* 684. 1. *Raii biſt.* 533. *ſyn.* 233. *Petiv. brit. t.* 31. *f.* 6.
M. aquat. rubra. *Park. theat.* 1243.
Sifymbrium. *Fuchſ.* 722. *Dod. pempt.* 97.
S. ſylveſtre. *Dalech. biſt.* 677.
Aquatica f. Sifymbria Mentha rubro folio & flore nigra: Menthæ, & Balſamine Officinarum. *Lob. obſ.* 272. 2. *ic.* 1. 509. 1.
Flowers in heads, leaves ovate ſerrate petioled, ſtamens longer than the corolla.
11. Mentha piperita. *Pepper Mint.*
Lin. ſpec. 805. *ſyſt.* 294. *Reich.* 3. 44. *mat. med.* 148. *Woodv. med. bot.* 461. *t.* 169. *Huſſ. angl.* 251. *Wither. arr. ed.* 2. 599. *Kreck. ſileſ. n.* 916. *Zorn. ic. t.* 56.
M. ſpicis brevioribus & habitioribus, foliis Menthæ ſuſcæ, ſapore fervido Piperis. *Raii ſyn.* 234. *t.* 10. *f.* 2. *Petiv. brit. t.* 31. *f.* 10.
Flowers in heads, leaves ovate petioled, ſtamens ſhorter than the corolla.
12. Mentha ſativa. *Marſh Whorled Mint.*
Lin. ſpec. 805. *ſyſt.* 532. *Reich.* 3. 44. *Huſſ. angl.* 253. *Wither. arr. ed.* 2. 600. *Engl. bot.* 448. *Fl. dan. t.* 794.
M. verticillata. *Lin. ſyſt. ed.* 10. 1099. *Huſſ. angl. ed.* 1. 222. *Kreck. ſileſ. n.* 921. *Riv. mon. t.* 48. 1. *Raii ſyn.* 232. *Petiv. brit. t.* 31. *f.* 8.
M. criſpa verticillata. *Bauh. pin.* 227. *Mor. biſt. f.* 11. *t.* 7. *f.* 2. *Raii biſt.* 531.—fol. rotundiore. *Bauh. biſt.* 3. 215. *f.* 216.
M. prima. *Dod. pempt.* 95. 1.
Cruciata Mentha. *Lob. obſ.* 271. 1. *ic.* 1. 507. 1.
M. ſativa rubra. *Ger. emac.* 680. 1.
M. criſpa. *Park. theat.* 324.
Menta. *Fuchſ.* 288.
Flowers in whorls, leaves ovate ſharpiſh ſerrate, ſtamens longer than the corolla.—Stem upright, leaves on winged footſtalks, ovate ſerrate pubeſcent, peduncles and calyx hairy. F. B.
13. Mentha gentilis. *Red Mint.*
Lin. ſpec. 805. *ſyſt.* 533. *Reich.* 3. 44. *Wither. arr. ed.* 2. 600. *Engl. bot.* 449. *Fl. dan. t.* 736. *Villars dauph.* 2. 359. *Kreck. ſileſ. n.* 918. *Sabb. hort.* 3. *t.* 50.
M. rubra. *Huſſ. angl.* 252.
M. hortenſis quarta. *Fuchſ.* 291.
M. verticillata minor acuta non criſpa, odore Ocymi. *Bauh. biſt.* 3. 216. *t.* 217. *f.* 1. *Raii biſt.* 530.
M. hortenſis verticillata, Ocymi odore. *Bauh. pin.* 227.
M. ſuſca f. vulgaris. *Park. Raii ſyn.* 232.
Flowers in whorls, leaves ovate-lanceolate acute nearly ſeſſile ſcarcely hairy, peduncles perfectly ſmooth, teeth of the calyx hairy.
14. Mentha arvenſis. *Corn Mint.*
Lin. ſpec. 806. *ſyſt.* 533. *Reich.* 3. 44. *hort. cliff.* 307. 5. *Fl. ſuec. n.* 516. *Huſſ. angl.* 253. *Wither. arr. ed.* 2. 601. *Lightf. ſcot.* 306. *Relh. cant. n.* 427. *Hall. helv. n.* 223. *Scop. carn. n.* 746. *Pollich pal. n.* 553. *Fl. dan. t.* 512. *Villars dauph.* 2. 360. *Kreck. ſileſ. n.* 917.
Calamintha arv. verticillata. *Bauh. pin.* 229.—M. arv. verticillata hirſuta. *Bauh. biſt.* 3. 217. 2.—procumbens. *Mor. biſt. f.* 11. *t.* 7. *f.* 5.
M. arv. vert. f. aquatica. *Lob. obſ.* 270. 1. *ic.* 1. 505. 2. *Park. theat.* 37. 5.
Calamintha aquatica. *Ger. emac.* 684. 2. *Raii biſt.* 530. *ſyn.* 232. *Petiv. brit. t.* 31. *f.* 5.
Calamintha ſecundum genus. *Fuchſ.* 435.
Flowers in whorls, leaves ovate acute ſerrate, ſtamens equalling the corolla.
[15. Mentha auſtriaca. *Auſtrian Mint.*
Lin. ſyſt. 533. *Jacqu. auſtr.* 5. *t.* 430. *Allion. pedem. n.* 73. *t.* 75. *f.* 2.
Flowers in whorls, all the ſegments of the corolla blunt, leaves ſubovate villoſe, ſtamens ſhorter than the corolla.
16. Mentha canadenſis. *Canadian Mint.*
Lin. ſpec. 806. *Reich.* 3. 45.
Flowers in whorls, leaves lanceolate ſerrate petioled hairy, ſtamens equalling the corolla.]
17. Mentha Pulegium. *Pennyroyal.*
Lin. ſpec. 807. *Reich.* 3. 45. *hort. cliff.* 307. 6. *mat. med.* 148. *Woodv. med. bot.* 466. *t.* 171. *Huſſ. angl.* 254. *Wither. arr. ed.* 2. 602. *Lightf. ſcot.* 306. *Relh. cant. n.* 428. *Hall. helv. n.* 221. *Scop. carn. n.* 747. *Villars dauph.* 2. 361. *Kreck. ſileſ. n.* 920. *Ludw. ed. t.* 195. *Sabb. hort.* 3. *t.* 49. *Regn. bot. Lour. cochinch.* 361.
Pulegium. *Fuchſ. t.* 198. *Bauh. biſt.* 3. 256. 2. *Dod. pempt.* 282. *Camer. epit.* 471. *Raii biſt.* 533. *ſyn.* 235. *Riv. mon. t.* 23. *f.* 1. *Blackw.* 302. *Petiv. brit. t.* 32. *f.* 2.
P. mas Plinii. *Lob. obſ.* 266. *ic.* 1. 500. 1.
P. regium. *Ger. emac.* 671. 1.
P. vulgare. *Park. theat.* 29. *Mill. dict. n.* 1.
P. latifolium. *Bauh. pin.* 221.—regium. *Mor. biſt.* 3. *f.* 11. *t.* 7. *f.* 1, 2. *rem.* 2.
β. P. erectum. *Spaniſh Pennyroyal.*
Mill. dict. n. 2.
Flowers in whorls, leaves ovate blunt ſuberenate, ſtems roundiſh creeping, ſtamens longer than the corolla.
18. Mentha cervina. *Hyſſop-leaved Mint.*
Lin. ſpec. 807. *Reich.* 3. 46. *hort. cliff.* 307. 7. *upſ.* 168. *Hall. helv. n.* 222. *Villars dauph.* 2. 361.
Pulegium cervinum. *Mill. dict. n.* 3.
P. anguſtifolium. *Bauh. pin.* 222. *Mor. biſt.* 3. *f.* 11. *t.* 7. *f.* 7. *Riv. mon. t.* 23. *f.* 2. *Blackw. t.* 304.
Flowers in whorls, bractles ſubulate, leaves linear, ſtamens longer than the corolla.
[19. Mentha perilloides.
Lin. ſyſt. 533. *Reich.* 3. 47.
Ocymum frutescens. *Lin. ſpec.* 832. *hort. cliff.* 315. *fl. zeyl. n.* 225.
Cottam. *Rheed. mal.* 10. 153. *t.* 77.
Racemes lateral diretted the ſame way.

DESCRIPTIONS, *&c.*

Root perennial, commonly creeping. Herb generally ſmelling very ſtrong. Flowers either in axillary whorls, or in whorls forming a ſpike at the top[a].

1. Stem upright, four-cornered with the ſides excavated, ſimple, a foot high, hiſpid with ſtiffiſh hairs. Spike very thick and cloſe. Branches ſhorter from the lower axils[b]. Calyx five-cleft. Corolla four-cleft. Filaments hairy[c].

Native of the Eaſt Indies.

2. Stems villoſe, branched, weak, a foot high, aſcending. Leaves ovate, the ſmaller ones lanceolate, villoſe and green on both ſides, acute, ſharply ſerrate, veined. Spikes very cloſe, about an inch in length, almoſt cylindric, on the branchlets uſually ſolitary, on the top of the ſtem ſeveral, one upright, the next below horizontal. Flowers ſmall. Calyx villoſe, with the border divided into five almoſt equal lanceolate-acuminate toothlets. Corolla pale, funnel-form, almoſt twice as long as the calyx; upper lip cordate or half five-lobed, lower divided into three ovate or oblong blunt ſegments; all violet-coloured in the middle. Filaments and ſtyle twice as long as the corolla. Anthers twin, violet[d].

[a] Jacqu. [b] Linn. zeyl. [c] Linn. mant. [d] Jacquin.

The wild plant is hoary all over, with very ſoft leaves, ſpikes two inches long formed of crouded whorls [a].

Native of Egypt.

3. The whole of this plant is ſmooth and herbaceous. Leaves an inch and half long, nerved, appearing dotted underneath when viewed with a magnifier. Peduncle terminating. Whorls eighteen-flowered, nine on each oppoſite peduncle, umbelled. Bractes linear, the length of the whorl. Stamens ſhorter than the corolla. Style longer [b].

Native of Egypt.

4. Stem herbaceous, upright, four-grooved, one foot high. Leaves in fours, oblong, blunt, ſmooth. Flowers very ſmall, in oblong, heaped, terminating ſpikes. Calyx five-cleft, acute. Corolla twice as long as the calyx, dilated at the baſe, pale violet almoſt white; border ſpreading, legments blunt, ſhort. Filaments longer than the corolla, ſurrounded with long hairs in the middle. Anthers very ſmall. Style equal to the ſtamens. Seeds roundiſh.

Native of Cochinchina [c].

5. Stem upright, four-grooved, branched at top, ſmooth at bottom, but hoary with down towards the top, almoſt wholly covered with leaves, a foot and half or two feet in height, ſometimes three feet, and according to Pollich even ſix feet. Leaves ſmooth above, whitiſh and tomentoſe underneath, or white-tomentoſe on both ſides, with ſlender ſharp ſerratures. Spikes terminating the ſtem and branches, oppoſite, the lower on longer, the upper on ſhorter peduncles, all hoary with cottony down, thick and cloſe with approximating whorls, an inch or an inch and half in length. Calyx hardly a line long, hoary. Corolla twice as long, pale purple. Filaments twice or thrice as long as the corolla [d]. It varies with filaments equal only to the corolla [e]. This circumſtance appears to me a very uncertain mark of ſpecific diſtinction.

Native of many parts of Europe, Denmark, Germany, Switzerland, France, England, in hedges, ditches, marſhy and watery places. With us in Lincolnſhire, Cambridgeſhire, Eſſex, Suffolk, Kent, &c.

6. Horſe-Mint or Water-Mint with a groſſer ſpike was found by Dale near Bocking in Eſſex.

6. This is very nearly allied to the preceding, but it is ſmaller and ſmoother, the leaves are not white, are narrower and more pointed; the ſpikes are thinner, and the corolla is purpliſh red [f].

Native of Germany, Switzerland, France, and England, in watery places and on the banks of rivers, as on the Thames, and near Exmouth in Devonſhire.

Mr. Miller has a variety, which he calls M. glabra (n. 2.) with ſmoother narrower leaves, very ſlightly ſerrated towards the points, which is cultivated in gardens with the other, and not diſtinguiſhed from it.

He has alſo another which he calls M. candicans, with ſhorter broader leaves, the ſerratures more acute, and the under ſides white. The ſtem divides more, and is therefore terminated by more ſpikes, the lower of which is interrupted. The ſcent of this is very like that of Garden Mint (M. viridis). This may perhaps be a variety of M. ſylveſtris.

This ſpecies not being ſo hot to the taſte as Peppermint, and having a more agreeable flavour than moſt of the others is generally preferred for culinary and ſome medicinal purpoſes. The leaves or tops are uſed in ſpring ſalads, and eaten dried as ſauce with lamb and in ſoups.

The preparations of Spear Mint are more pleaſant than thoſe of Pepper Mint, but perhaps leſs effeacious. This herb, as do the other ſorts, contains much eſſential oil, but of an odour leſs agreeable than that of Lavender or Marjoram. It is therefore leſs employed as a cephalic; but it acts very powerfully on parts to which it is immediately applied, and therefore conſiderably on the ſtomach. It acts eſpecially as an antiſpaſmodic, and therefore relieves pains and cholic ariſing from ſpaſm. It will alſo ſtop vomiting dependent on the ſame cauſe, but if it ariſe from an inflammatory irritation in the ſtomach itſelf, or in other parts of the body, it aggravates the diſeaſe. The infuſion of Mint in warm water agrees better with the ſtomach than the diſtilled water. The officinal preparations are an eſſential oil, a conſerve, a ſimple water, and a ſpirit. The conſerve is very grateful, and the diſtilled waters, both ſimple and ſpirituous, are generally thought pleaſant.

Lewis obſerves, that Mint is ſaid to prevent the coagulation of milk; and hence it has been recommended to be uſed with milk diets, and even in cataplaſms and fomentations for reſolving coagulated milk in the breaſts: upon experiment, the curd of milk, digeſted in a ſtrong infuſion of Mint, could not be perceived to be any otherwiſe affected than by common water; but milk, in which Mint leaves were ſet to macerate, did not coagulate near ſo ſoon as an equal quantity of the ſame milk kept by itſelf.

Lewis ſays that dry Mint digeſted in rectified ſpirits of wine, gives out a tincture which appears by day-light of a fine dark green, but by candle-light of a bright red colour. The fact is, that a ſmall quantity of this tincture is green, either by day-light or candle-light, but a large quantity ſeems impervious to common day-light; however when held between the eye and a candle, or between the eye and the ſun, it appears red: ſo that if put into a flat bottle it appears green, but when viewed edgewiſe red [g].

7. Stems from two to three feet high, erect, hairy or ſhaggy, the hairs pointing more or leſs downwards. Leaves ſomewhat cordate, rugged, ſtrongly and ſharply crenate or rather ſerrate, the teeth and points of the ſmall upper ones being often very taper: the under ſide is ſhaggy not hoary, and all the veins are fringed as it were with cloſe hairs. Spikes ſeveral, terminating, erect, ſharpiſh, not very denſely whorled: the bractes lanceolate, hairy, ſharp and projecting. Flowers reddiſh. Calycine teeth broad at the baſe. Stamens always much longer than the corolla.

Our plant is very near, if not the ſame, to what Linnæus intended for *crispa*, in the firſt edition of Species Plantarum; but it is not that of the ſecond edition and all other authors, which has never yet been found in Britain. Ours is alſo *M. ſpicata* γ of that firſt edition.

Native of ſeveral parts of Europe. With us it is rather rare; growing in waſte ground, generally where there is a moiſture; and flowering in auguſt and ſeptember. Shingham, Norfolk [h], near Faulkburn Hall, &c. Eſſex; Cambridgeſhire; Hornſey and Harefield church-yards, Middleſex; near Ruſs, Herefordſhire. Like ſeveral other ſpecies, it is found in the gardens variegated.]

8. Stems hairy, about the ſame height with common Spear Mint. Leaves deeply indented on their edges, waved and curled, light green. Flowers purple, growing in thick interrupted ſpikes at the top of the ſtalks. Calyx cut almoſt to the bottom. Style ſtanding out beyond the corolla.

[Stem branched very much, upright, eighteen inches and more in height. Leaves hirſute, ovate-lanceolate, ſeſſile or on a very ſhort petiole, ſharply toothletted, wrinkled, nerves prominent. Calyxes hirſute. Spikes ſhort, formed of interrupted whorls with ſmall leaves under each [i].]

Mr. Miller ſays that it was brought originally from Denmark, but that Linnæus fixes it as a native of Siberia. [It appears in ſome of the European Floras, but it is only or chiefly found there in gardens, as it is alſo in China and Cochinchina, where it is uſed in medicine.—It was cultivated in 1658 in the Oxford garden [k].

9. Roots long, branched, creeping under water. Stem branched, very generally purpliſh, rough with deflex hairs ſcattered all over it; there it however a denſe tuft of ſimilar hairs, between the inſertions of the foot-ſtalks, which are erect, and the hairs on the foot-ſtalks and leaves alſo point upwards or forwards. The degree of hairineſs throughout the whole plant

[a] Vahl. [b] Hedſon. [c] Loureiro. [d] Krocker. [e] Krocker, Villars, Linn. [f] Woodville and Withering. [g] Haller. [h] English Botany. [i] Hort. Kew.

vari-

varies extremely. Leaves on ſhortiſh foot-ſtalks, ſometimes almoſt ſeſſile, ſpreading, ovate frequently approaching to elliptical, pointed, ſerrate from a little above the baſe to near the tip, paler and moſt hairy beneath, eſpecially about the nerves. Flowers lilac-coloured, numerous, in a large round terminating head, which, when accurately obſerved, is found to be divided into three parts, and is accompanied, at a greater or leſs diſtance below it, by a pair, rarely more, of ſmaller axillary heads. Peduncles and calyx very hairy. Stamens generally longer than the corolla.

When out of the water it grows much ſmaller, more purple, with a ſimple head of flowers; which ſeems to be Hudſon's variety γ, though not very well drawn by Dillenius in Ray's ſynopſis.

Hudſon has conſidered this, perhaps rightly, as the ſame with *M. aquatica* ſ. *Siſymbrium* of John Bauhin, and Ray's Synopſis, which Dr. Smith believes to be *M. piperita* of Linneus, and which is deſcribed in Sir Joſeph Banks's manuſcripts by the name of *M. Siſymbrium*. M. aquatica of Linneus ſeems different from both.

M. hirſuta is very common in clear ditches, rivulets, and other watery places, growing ſometimes among large graſſes and reeds, ſometimes by itſelf. It flowers in auguſt [9].

10. This is not a rough-haired plant. Whorls terminating, cluſtered, forming a head or blunt ſpike. Stamens longer than the corolla. In the preceding ſpecies the leaves are more ſeſſile and hirſute. The piſtil is longer than the corolla, which is deeply four-cleft, and almoſt regular. Calyxes ciliate. They agree in the length of the ſtamens, and the general appearance [10].

Stem reddiſh towards the top, and ſet with a few briſtly hairs pointing downwards. Leaves ovate-lanceolate, a little hairy on both ſides, ſometimes woolly. Branches generally ſhorter than the leaves. Calyx coloured ribbed, hairy without, ſcored within; teeth not quite equal; glands ſemitranſparent. Corolla hairy without, pale red. Filaments half as long again as the corolla, nearly equal [11].

I have kept theſe deſcriptions ſeparate, becauſe Linneus's M. aquatica and ours may probably be different plants. Mr. Miller has two ſpecies, *M. aquatica*, n. 5. and *M. paluſtris*, n. 11.]

11. Our true Engliſh Pepper Mint has ſmooth purple ſtalks. The leaves are ſmaller than thoſe of Spear Mint; they are lanceolate, ſerrate, very dark green, with purple midrib and veins, and they are a little hairy on their under ſide. The ſpikes of flowers are ſhorter and thicker than thoſe of Spear Mint, and are broken or interrupted at bottom. The corolla is of a dark purple colour, and the ſtamens are longer than the corolla.

[Spikes terminating the ſtem and upper branches, conſiſting of from nine to twelve whorls. The lower whorls peduncled, diſtant. In external appearance it correſponds with *M. viridis*, for which it may eaſily be miſtaken; but in that the ſtem is taller, the leaves have ſcarcely any petioles and are narrower in proportion to their length, the ſpikes are longer and compoſed of more whorls. It ſeems to be diſtinct from *M. piperita* of Linneus [12].

Peppermint is found in watery places and by the ſides of rivulets in Hertfordſhire and Eſſex, between Newington and Hornſey.] Mr. Miller found it by the ſide of the river between Mitcham and Croydon in Surry. It flowers in auguſt.

[The ſtem and leaves are beſet with many very minute glands, containing the eſſential oil, which riſes pleniſully in diſtillation [13]. Peppermint has a more penetrating ſmell than any of the other ſpecies, and a much ſtronger taſte, pungent and glowing like Pepper, ſinking as it were into the tongue, and followed by a ſenſation of coldneſs.

Its ſtomachic, antiſpaſmodic and carminative qualities render it uſeful in flatulent colics, hyſterical affections, retchings, and other dyſpeptic ſymptoms, acting as a cordial, and often producing immediate relief. The officinal preparations are an eſſential oil, a ſimple water, and a ſpirit. The Eſſence of Peppermint is an elegant medicine, and ſeems to be the rectified oil diſſolved in ſpirits of wine [14].

12. Root throwing out long creeping horizontal ſhoots, and one erect hairy ſtem, furniſhed all the way up to the flowering part with ſhortiſh axillary leafy branches. Leaves ſharply ſerrate from near the baſe, veiny, clothed on both ſides with ſhort ſcattered hairs, and paler beneath; the baſe of the leaf runs down the foot-ſtalk. Flowers in axillary cluſters from many of the uppermoſt leaves, forming whorls, and each cluſter is more or leſs peduncled. General and partial peduncles thickly covered, eſpecially the ſummit of the latter juſt under the calyx, with white hairs pointing downwards like thoſe on the ſtem, but the calyx itſelf is clothed all over with hairs which point upwards, juſt as in *M. hirſuta*; by which it may be eaſily known from every variety of *M. gentilis*, the peduncles of which are always ſmooth, and the calyx hairy about the top only. Stamens ſhorter than the corolla; in Linneus's ſpecimens they are longer.

It is preſumed by Mr. Edward Forſter, jun. to be the *M. verticillata* of Ray's ſynopſis, having been found by him in the ſpot where it was marked to grow by Dillenius. Dr. Smith has determined the ſame plant to be M. ſativa of Linneus from his herbarium. He ſuſpects after all that this is no more than a worſted variety of M. hirſuta. It flowers in auguſt and ſeptember [15].

13. Stems ſeveral, erect, growing in tufts, about eighteen inches high, with harſh ſomewhat hairy angles, more or leſs reddiſh in the upper part, branched, leafy. Leaves moſt crowded towards the upper part, ſharply ſerrate, veiny, punctuated with ſhining dots, having a few ſhort hairs ſcattered over them, eſpecially about the margin, and along the nerves on the back. Their uſual ſcent is much like that of *M. viridis* or garden mackarel Mint; but nothing is more variable than the ſmell of Mints; (and we may add, than the judgment of different perſons on the ſame ſmell.) Mr. Sole has a variety of this, with the delightful ſcent of Baſil, to which Caſpar and John Bauhin's name alludes.—Bractes lanceolate, ciliate. Peduncles round, red, and always perfectly ſmooth, as is the lower part of the calyx; the upper part only, on or about the teeth, being fringed or clothed with hairs which point upwards. The pellucid globules on the calyx are very conſpicuous. Stamens ſhorter, ſtyle much longer than the corolla [16]; which is pale red, and has white hairs on the outſide and within the tube. Germs on a yelloviſh green fleſhy receptacle [17].

There is a Mint which agrees with this in the calyx and peduncle, but grows much taller, and has large ovate leaves. This many have taken for the true *M. gentilis*, but Dillenius ſeems to have confounded it with the *ſativa*, by his deſcription of the latter in Ray's ſynopſis.

Native of ſeveral parts of Europe in watery places and by the ſides of rivulets. Found by Mr. B. M. Forſter near Walthamſtow, and by Mr. Crowe and Dr. Smith on a ſmall common at Saham in Norfolk [18].

14. The whole plant is covered with ſoft white hairs, of a paler green than in *M. gentilis*. Stem not tinged with red, hairs pointing downwards. Leaves towards the top ovate-lanceolate; towards the bottom roundiſh. Whorls compoſed of two oppoſite ſeſſile umbels. Calyx pale green, beſet with ſoft white hairs, interſperſed with very minute ſemi-tranſparent glands. Corolla hairy within and without. Stamens in ſome plants longer than the corolla.

Native of many parts of Europe in watery places and moiſt corn fields.

It prevents the congulation of milk, and when cows have eaten it, as they will do largely at the end of ſummer, when paſtures are bare, their milk can hardly be made to yield cheeſe; a circumſtance which ſometimes puzzles the dairy-maids [19].

[9] Engliſh Botany. [10] Linn. [11] Withering. [12] Stokes in Withering. [13] Withering.

[14] Woodville. [15] Engliſh Botany. [16] Idem. [17] Withering. [18] Engl. bot. [19] Withering.

15. This resembles M. arvensis very much, but differs from it in being of a lower stature, in its smell, the shortness of the stamens, its greater hairiness, &c. Stems half a foot high and more, upright, almost simple. These, the leaves on both sides, and the calyxes are covered with a very short villous down. Leaves on short petioles, the lowest ovate, the rest lanceolate, acute, serrulate, the midrib hairy underneath. Flowers small, in very close whorls. Calycine toothlets equal. Corolla pale violet, with the upper lip emarginate or semibifid, and thrice as wide as the three segments of the lower lip: the throat is closed with white hairs. Filaments very short, concealed with the anthers in the lower part of the tube. It flowers in july and august.

Native of Austria, in the isles of the Danube [a]; and in Piedmont, according to Allione.

16. Linnæus compares this with his *exigua*, and says that the stem is higher, not branched, very hairy. Leaves narrower by half, sharper, more deeply serrate, of a darker colour, with hairs scattered over them and the calyxes; the teeth of which are almost equal. Corolla four-cleft; the upper segment oblong, longer, entire, the rest equal. Stamens within the tube. Style longer than the corolla.

Native of Canada, where it was found by Kalm [b].

Dr. Smith has discovered, after much investigation, that no such Mint exists as *M. exigua*, and that it is neither more nor less than *Clinia pulegioides*, a plant of North America [c].]

17. Pennyroyal has a fibrous perennial root. Stems smooth, and putting out roots at every joint. Leaves for the most part entire. Flowers towards the upper part of the branches, just above the leaves at each joint, in whorls. Corolla small, pale purple; upper lip entire. Stamens of the same length with the corolla, but the style somewhat longer. It varies with a white flower.

[Stems hairy, branched, with blunt corners. Leaves obovate, thick, slightly toothed, fer underneath with deep semi-transparent dots. Corolla twice as long as the calyx, hairy without. Filaments equal. Pistil as long as the stamens [d].

Native of many parts of Europe, on moist heaths and pastures: flowering in august and september.]

β. Stems erect, near a foot high. Leaves longer and narrower. Whorls of flowers much larger. Stamens longer than the corolla. This has almost superseded our wild one in the markets: the stems being more erect, it is easier to tie in bunches; it comes earlier to flower, and has a brighter appearance. It was sent to Mr. Miller from Gibraltar.

[Pennyroyal has a warm pungent flavour somewhat similar to Mint, but more acrid, and less agreeable. Its active principle is an essential oil, of a more volatile nature than that of Mint, coming over hastily with water at the beginning of the distillation, and rising also in great part with highly rectified spirit; in taste very pungent, and of a strong smell; when newly drawn of a yellowish colour with a cast of green, by age turning brownish.

Pennyroyal certainly possesses the general properties of Mint: it is supposed however to be of less efficacy as a stomachic, but more useful as a carminative and emmenagogue, and is more commonly employed in hysterical affections. We are told by Boyle and others, that it has been successfully used in the hooping-cough; but the chief purpose to which it has long been administered is promoting the uterine evacuation. With this intention Haller recommends an infusion of the herb with steel in white wine. However in the opinion of Dr. Cullen, Mint is in every respect more effectual than Pennyroyal, and nothing but the neglect of establishing principles could have made physicians regard this as a peculiar medicine distinct from the Mints; and accordingly this plant is less frequently used now than formerly. The officinal preparations are a simple water, a spirit, and an essential oil [e].]

18. Stems erect, near two feet high, sending out side branches all their length. Leaves very narrow, and of a thicker substance than those of common Pennyroyal. The whorls of flowers are rather larger, and the stalks are frequently terminated by them. The scent is not quite so strong as that of Pennyroyal. It flowers about the same time. There is a variety with white flowers, which grows taller than the common one with purple flowers. It is by some preferred to Pennyroyal for medicinal use. It is called Hart's Pennyroyal.

Native of the South of France and Italy. [Cultivated in the botanic garden at Oxford in 1648 [f].

19. This resembles *Perilla ocymoides*, and is the only instance of a Mint that is annual. The stamens are shorter than the corolla [g].

Native of the East Indies.]

Miller has some other species, as M. chalepensis, or Aleppo Mint, n. 10. with oblong, toothed leaves, tomentose on both sides and sessile, with very narrow spikes.—M. nigricans, or broad-leaved black Pepper Mint; a larger variety of his M. piperita (n. 6.) not of Linnæus: his M. piperita not being our true one.—M. rubra, or Orange Mint, n. 9. with oblong-ovate, acuminate, toothed, sessile leaves, and interrupted clustered spikes, probably a variety of the viridis or common Spearmint. There is also a Mint of his in the Banksian herbarium, which he names M. hispanica candidissima, fol. serratis, spicis florum longissimis, which seems to be a variety of M. sylvestris.

PROPAGATION AND CULTURE.

Mr. Miller has enumerated seventeen species, which (in the year 1759) he affirms that he had cultivated near thirty years, without observing any change in them.

All the sorts of Mint are easily propagated by parting the roots in the spring, or by planting cuttings during any of the summer months, but they should have a moist soil; and after the cuttings are planted, if the season should prove dry, they must be often watered until they have taken root; after which, they will require no farther care but to keep them clear from weeds: they should be planted in beds about four feet wide, allowing a path about two feet broad between the beds, to water, weed, and cut the plants.

The distance they should be set is four or five inches, or more, because they spread very much at their roots; for which reason, the beds should not stand longer than three years before you plant again, for by that time the roots will be matted so closely, as to rot and decay each other, if permitted to stand longer. Some persons are very fond of Mint salad in winter and spring; in order to obtain which, they take up the roots before christmas, and plant them upon a moderate hot-bed pretty close, covering them with fine earth about an inch thick, and cover the bed either with mats or frames of glass. In these beds the Mint will come up in a month's time, and be soon fit to cut for that purpose.

When the herb is cut for medicinal use, it should be done in a very dry season, just when it is in flower; for if it stand longer, it will not be so well tasted; and if it be cut when it is wet, it will change black and be little worth; this should be hung up to dry in a shady place, where it may remain until it be used.

If the soil be good in which these plants are set, they will afford three crops every year, but after july they seldom prove good; therefore what shoots are produced after that time should be permitted to remain till michaelmas, when they must be cut down close; and after having cleared the beds from weeds, you should spread a little fine rich earth all over them, which will greatly encourage the roots against the succeeding spring.

17, 18. Penny-royal and Hyssop-leaved Mint propagate very fast by their creeping stems, which may be cut off and planted in fresh beds, allowing them at least a foot distance every way. Or the young shoots planted in the spring, will take root like Mint.

The best time for this work is in september, that the plants may be rooted before winter. The young

[a] Jacquin. [b] Linn. spec. [c] Linn. transf. 3. 18. [d] Withering. [e] Woodville, Lewis. [f] Hort. kew. [g] Linn. syst.

plants also will be much stronger and produce a larger crop, than if they were removed in the spring. And if the roots remain so close as they generally grow, they are subject to rot in winter. They love a moist strong soil.

[MENTHA. See *Clinopodium, Origanum, Satureia, Tanacetum Balsamita.*

——— canariensis. See *Bystropogon.*]

——— cataria. See *Nepeta.*

[——— plumosa. See *Bystropogon.*

MENTHASTRUM. See *Mentha, Nepeta.*]

MENTZELIA. (*So named by Plumier from Christian Mentzelius, physician to the Elector of Brandenburgh. He published* Centuria Plantarum circa Gedanum, 1650, 4°: *and* Index nominum plantarum multilinguis, 1682. fol. 1696 & 1715—*in which are a few scarce plants with figures, and an index of some Brasilian plants.*)

Lin. gen. n. 670. *Reich. n.* 723. *Schreb. n.* 907. *Plum.* 6. *Jacqu. amer.* 164. *Juss.* 321.

Class. 13. 1. Polyandria Monogynia.

Nat. order of *Calycanthemæ. Onagræ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, spreading, superior, deciduous: *leaflets* lanceolate, concave, acuminate.

COR. *Petals* five, obovate, acuminate, a little longer than the calyx, spreading.

STAM. *Filaments* many (thirty), the length of the calyx, erect, bristle-shaped, the ten outer membranaceous at top. *Anthers* roundish.

PIST. *Germ* cylindric, very long, inferior. *Style* filiform, the length of the stamens. *Stigma* simple, blunt.

PER. *Capsule* cylindric, long, one-celled, three-valved at top.

SEEDS about six, oblong, angular.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* five-petalled. *Caps.* inferior, cylindric, many-seeded.

SPECIES.

1. Mentzelia aspera.

Lin. spec. 735. *syst.* 494. *Reich.* 2. 587. *hort. cliff.* 492. *amoen.* 5. 498. *Loefl. it.* 223. *Jacqu. amer.* 164. *pict.* 80. *Cavan. ic.* 51. *t.* 70. *Brown. jam.* 249.

DESCRIPTION, &c.

This plant is annual; it rises with a slender smooth stalk, which is stiff, and becomes a little woody, rising more than three feet high, branching out alternately at distances; the branches are distorted, and run into one another; these are garnished with leaves shaped like the point of an halbert, standing alternately on the branches, upon short foot-stalks; they are covered with short hooded prickles, which fasten themselves into the clothes of those who rub against them; and those parts of the branches easily separate from the plants, and adhere to the clothes in like manner as the seeds of Clivers. The flowers come out singly from the joints of the stalk, resting upon a cylindrical germen, which is near an inch in length, narrow at the base, but widening upwards towards to the top. Upon the top of it comes out the calyx, which is spread open after the same manner as that of Onagra; then the petals of the flower spread open upon the calyx: they are of a pale yellow colour.

[Stems numerous, covered with short bowed bristles, three or four feet high, round, yellowish green, the lower branches alternate, axillary, the upper in pairs, forking again and again. Leaves alternate, ovate-lanceolate, doubly serrate, gashed at bottom, dark green above, whitish underneath, on short petioles; on the branchlets they are sessile. Flowers solitary, sessile in the forks of the branches. Calyx hispid. Corolla large, deep sulphur-coloured; petals inserted into the top of the calyx, somewhat fringed towards the tip, and ending in a dagger-point. Filaments yellow, inserted into the calyx in two rows, the ten or twelve outer ones longer, wider at the base, and bowing towards the centre of the flower, the rest upright: anthers ovate, upright. Germ inversely conical, very hispid, almost an inch long: style bristle-shaped, longer than the stamens. Capsule rough, inversely conical, succulent before it is ripe, but then dry, with three longitudinal grooves, and wrinkled. Seeds flatted-ovate, narrower at top, roughened with little prominent points.

Native of America—of La Vera Cruz, according to Miller—of Mexico, according to Cavanilles—of Curaçao, according to Jacquin—of Jamaica, according to Browne. He says it is very common in all the dry savannahs about Kingston: that it seems to be an annual plant, and seldom rises above three or four feet in height. He describes the fruit as a succulent cylindric capsule, well furnished with short rough uncinated bristles, like the rest of the plant, and containing only three or four rugged seeds, compressed on one side, and disposed at some distance from each other, in the pulp.

Jacquin describes it as an annual upright plant; and observes, as Cavanilles does, that the ripe capsule is not at all succulent. Plumier's plant, referred to this, seems to be a different species; the leaves being crenate, all the flowers axillary and not in the forks of the branches, the petals orbiculate and crenulate.]

Cultivated by Mr. Miller, from seeds sent over by Dr. Houstoun.

PROPAGATION AND CULTURE.

As this is an annual plant, which perishes soon after the seeds are ripe, therefore the seeds must be sown on a hot-bed early in the spring, that the plants may be brought forward early in the season, otherwise they will not produce ripe seed in this country. When the plants are come up about an inch high, they should be each transplanted into a separate halfpenny pot filled with light rich earth, and plunged into a hot-bed of tanners bark, being careful to shade them from the sun until they have taken new root; after which time they must be constantly watered every other day in warm weather, and should have fresh air every day admitted to them, in proportion to the warmth of the season, and the heat of the bed in which they are plunged. In about six weeks or two months after transplanting, if the plants have made a good progress, they will have filled the pots with their roots, when they should be shifted into larger pots, which must be filled with light rich earth, and then plunged into the tan-bed in the stove, that they may have room to grow in height, observing as before to water them duly, as also to admit fresh air to them every day in warm weather. With this management they will grow three feet high, and produce ripe seeds at the end of august or beginning of september.

MENYANTHES. [(*Menyanthes is reckoned by Theophrastus and Dioscorides, and* Minyanthes *by Pliny, among coronary trefoils.—Linnæus derives it from one a month, and anthos a flower: because the flower continues open about that time.*)

Lin. gen. n. 202. *Reich. n.* 215. *Schreb. n.* 263. *Gærtn. t.* 114. *Tournef. t.* 15. *Juss.* 98.

Nymphoides. *Tournef. t.* 67.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Precæ. Lysimachiæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted, erect, permanent.

COR. one-petalled, funnel-form: *tube* cylindric-funnel-form, short: *border* five-cleft beyond the middle; *clefts* reflex-spreading, blunt, conspicuously shaggy.

STAM. *Filaments* five, awl-shaped, short. *Anthers* acute, bifid at the base, erect.

PIST. *Germ* conical. *Style* cylindric, almost the length of the corolla. *Stigma* bifid, compressed.

PER. *Capsule* ovate, surrounded by the calyx, one-celled.

SEEDS many, ovate, small.

OBS. Nymphoides T. *was distinguished by the petals being ciliate not shaggy.*

ESSENTIAL CHARACTER.

Cor. shaggy. *Stigma* bifid. *Caps.* one-celled.

SPECIES.

1. Menyanthes Nymphoides. *Fringed Buck-bean*, or *Water-Lily.*

Lin. spec. 207. *syst.* 194. *Reich.* 1. 415. *hort. cliff.* 53. *Gærtn. fruct.* 2. 157. *Hudf. angl.* 85. *Wither. arr. ed.* 2. 206. *Relh. cant. n.* 159.

* Cavanilles

Engl. bot. 217. *Fl. dan. t.* 339. *Gmel. fib.* 4. 97. *Neck. gallob.* 105. *Pollich pal. n.* 196. *Allion. pedem. n.* 320. *Sabb. hort.* 2. *t.* 67. *Thunb. jap.* 82.

Limnanthemum peltatum. *Gmel. in act. petrop.* 1769. *t.* 4. 527. *t.* 17. *f.* 2.

Waldſchmidia Nymphoides. *Wigg. holſ.* 20.

Nymphæa lutea minor. *Dalech. hiſt.* 1010. *f.* 1.—flore fimbriato. *Bauh. pin.* 194. *Bauh. hiſt.* 3. 772. 1. *Raii hiſt.* 1320. *ſyn.* 368. *Petiv. brit. t.* 71. *f.* 4.

Leaves cordate quite entire, corollas ciliate.

2. Menyanthes indica. *Indian Buck-bean.*

Lin. ſpec. 207. *ſyſt.* 194. *Retch.* 1. 416. *fl. zeyl. n.* 72. *Swartz obſ.* 58. *Bveton. jam.* 151. *Thunb. prodr.* 34.

Nymphæa ceratnica. *Rumph. amb.* 6. 173. *t.* 72. *f.* 3.

Nymphæa minoris affinis indica, flore albo piloſo. *Sloan. jam. t.* 252. *Raii hiſt.* 3. 631.

Nedel-Ambel. *Rheed. mal.* 11. 55. *t.* 28.

Leaves cordate ſubcrenate, petioles floriferous, corollas hairy within.

3. Menyanthes ovata. *Cape Buck-bean.*

Lin. ſyſt. 194. *ſuppl.* 133.

M. capenſis. *Thunb. prodr.* 34.

Leaves ovate petioled, ſtem panicled.

4. Menyanthes trifoliata. *Common Buck-bean* or *Marſh Trefoil.*

Lin. ſpec. 208. *ſyſt.* 194. *Retch.* 1. 416. *fl. lapp. n.* 80. *ſuec. n* 173. *hort. cliff.* 52 *mat. med.* 58. *Woodv. med. bot.* 5. *t.* 2. *Hudſ. angl.* 85. *Witſor. arr. ed.* 2. 206. *Curt. lond.* 4. 17. *Lightf. ſcot.* 137. *Rolls, cant. n.* 160. *Garin. ſtirp.* 2. 158. *Hall. helv. n.* 633. *Fl. dan. t.* 541. *Gmel. ſib* 4. *t.* 97. *Neck. gallob.* 105. *Scop. carn. n.* 212. *Pollich pal. n.* 197. *Villars dauph.* 2. 487. *Krock. ſileſ. n.* 299. *Bulliard. f.* 171. *Sabb. hort.* 1. *t.* 88. *Zorn. ic.* 13. *Regn. bot.*

M. paluſtre latifolium & triphyllum. *Tournef. inſt.* 117. *Raii ſyn.* 285.

Trifolium majus. *Tabern. ic. t.* 520. *f.* 2.

T. paluſtre. *Bauh. pin.* 327. *Bauh. hiſt.* 2. 389. *Cor. hiſt.* 96. *Dod. pempt.* 580. *Lob. obſ.* 496. 2. *Raii hiſt.* 1099. *Blackw. t.* 474.

T. paludoſum. *Ger.* 1024. 1, 2. *emac.* 1194. *Park. theat.* 1212.

Acopa Dioſcoridis. *Mor. hiſt.* 3. 604. *f.* 15. *t.* 2. *rew.* 2.

Leaves ternate.

5. Menyanthes Hydrophyllum. *Water-leaf Buck-bean. Lour. cochinch.* 105.

Leaves cordate quite entire, flowers axillary heaped nectariferous.

DESCRIPTIONS, *&c.*

Theſe are herbaceous aquatics. Leaves on a ſheathing petiole, ternate in the fourth ſpecies, in the reſt ſimply cordate. The flowers of the firſt are umbelled or in axillary whorls; in the fourth they are in a ſpike on a ſcape[a].

1. Root perennial, long and ſtringy, as are alſo the ſtems; theſe are ſmooth, round and jointed. They produce a few pairs of oppoſite, floating leaves, thick, repand-toothed, or rather waved than toothed, ſhining above, dotted beneath, on foot-ſtalks various in length according to the depth of the water. Theſe leaves, like thoſe of Nymphæa, to which this is allied in habit, perſpire ſo much as to become dry in a few hours, though at firſt very ſucculent. The flowers grow from the axils in a kind of ſeſſile umbel, four or five together, on long round peduncles, ſhorter than the petioles, and when expanded in the ſun have a brilliant appearance. Stipules ovate, without the peduncles but within the petioles. Calyx five-leaved; leaflets linear or lanceolate. Corolla twice as large as the calyx, yellow; ſegments inverſely ovate, the middle of each veined, and the part ſo veined bordered by two ſtronger veins, which, converging towards each end, give the appearance of a narrow lanceolate petal being laid upon it; they are finely toothed at the edge[b]. Capſule ovate-lanceolate, compreſſed a little, thickened and rounded at the edge, at firſt fleſhy then coriaceous, thin, one-celled, two-valved. Seeds numerous, bracted or leafy, ſurrounded by a white membranaceous ciliated margin, ovate or obovate, of a pale bay colour in the middle, fixed to the edges of the valves on each ſide in a double row[c]. The corolla being ciliated or only fringed about the edge, not all over the ſurface like *M. triſoliata*, Tournefort, Gmelin, Wiggers, Gærtner, and Dr. Stokes, would make it a ſeparate genus, nay Wiggers aſſerts, but without telling us why, that it even belongs to a different natural order. Monſ. de Juſſieu doubts whether they ought to be ſeparated or not, but as he has left them together, and *M. indica* ſeems to connect them, I readily agree with Dr. Smith that they may ſafely remain as they are[d].

Native of Denmark, Holland, Germany, Piedmont, Siberia, England; in large ditches and ſlow ſtreams. In the Thames, chiefly in little receſſes of the ſhores, as near Walton-bridge, near Botley-bridge, Godſtow-bridge, and Hinkley-ferry in Oxfordſhire. In the river Cam, Streatham-ferry, and in the fens near Ely, frequent. It flowers from june to auguſt.

2. Sloane deſcribes it as having a leaf like Colt's-foot, roundiſh and about two inches diameter, thick, yellowiſh green, ſmooth without any apparent nerves. Petioles about a foot long, more or leſs according to the depth of the water, on the ſurface of which they float; they are round and brownifh, and out of them come ſeveral white flowers, juſt under the leaf, on peduncles an inch long, or ſhorter.

Native of both Indies.

Rheede deſcribes the flowers as having ten ſtamens. Sir William Jones, in his ſelect Indian plants deſcribes another ſpecies, or perhaps variety, with the ſame number of ſtamens, five of which are ſterile. It is figured in t. 29. vol. 11. of Hortus Malabaricus. He calls it *Cumeda* or delight of the water, which ſeems to be a general name for beautiful aquatic flowers.

The leaves are cordate, peltate, bright green on one ſide, dark ruſſet on the other. Flowers umbel-faſciculed, placed on the ſtem juſt below the leaf. Glands and tube of the corolla yellow, border white, both of the moſt exquiſite texture. The diviſions of the corolla may be called three-winged: they look as if covered with ſilver froſt[e].

3. This has the appearance of Aliſma, with the flower of Menyanthes[f].

Found at the Cape of Good Hope by Thunberg and Maſſon, by the latter of whom it was introduced in 1786[g].

4. Root perennial, creeping, long, jointed and fibrous. Stem procumbent, various in length according to ſituation, covered by the ſheaths of the leaves, which are on round ſtriated petioles. Leaflets ovate, obtuſe, ſmooth on both ſides, veiny, with a waved or ſerpentine edge. Flowers on a ſimple, upright, round, ſmooth ſcape, longer than the leaves, in a naked and ſomewhat pyramidal terminating thyrſe. Bractes ovate, ſomewhat concave, pointed. Calyx wrinkled at bottom; the ſegments coloured on the edge. Corolla outwardly of a roſe colour, inwardly white; tube thick, longer than the calyx, five-grooved; ſegments of the border narrow and pointed, bearded on the inſide except at the tips: beard the length of the calyx, thready and white. Filaments faſtened to the tube of the corolla. Anthers purpliſh, ſagittate, with the tips curved inwards. Germ ovate, green, ſhining; ſtyle a little thickening above, twice the length of the ſtamens: ſtigma two-lipped, green, villoſe[h]. Capſule the ſize of a Pea, with a groove on each ſide contrary to the ſutures of the valves. Seeds many, but only ſix or eight ripening, very ſmooth, ſhining, lemon or ſtraw-coloured[i].

Formerly named Marſh Trefoil, and Marſh-Claver or Clover. Now generally called *Buck-bean*, I once thought corruptedly for Bog-bean, from its place of growth, and the form of the leaves. But one of its German names is *Bocksbone*, and in Daniſh it is *Bukkeblade*. Buck-bean (Faba hircina) therefore, whatever

[a] Jeſſieu.
[b] Engl. bot. Lyon's M. S. in Relh. cant. and Stokes in Withering.
[c] Gærtner. [d] Engl. bot. [e] Maſſon Researches. 4. 255.
[f] Linn. ſuppl. [g] Hort. kew. [h] Curtis. [i] Gærtner.

it means, is probably right. It flowers from may to july, and is found in wet boggy meadows, ditches, and the sides of ponds and lake. In Batterſea meadows, about the iſland of St. Helena near Rotherhithe, about Staines, on Bromley-common, between Farnborough and Caſton-mark, Caſar's-camp near Bromley, Hayes-common, Hampſtead-heath, Harefield-moor, ſeveral places in Cambridgeſhire, &c. but it is frequently rooted out by the ſimplers.

An infuſion of the leaves is extremely bitter, and of late years has been in common uſe as an alterative and aperient in impurities of the humours and ſome hydropic and rheumatic caſes. A dram in powder purges and vomits. It is ſometimes given to deſtroy worms. As an active and ecoprhoric bitter, it ſeems not ill adapted to ſupply the want of bile in the *prima viæ*; and thus may be of uſe in protracted jaundice and other biliary obſtructions. Cullen mentions ſeveral inſtances of its good effects in ſome cutaneous diſeaſes of the herpetic and ſeemingly cancerous kind. With delicate ſtomachs it may be neceſſary to join ſome grateful aromatic with the infuſion.

In a ſcarcity of hops this plant is uſed in the north of Europe to give a bitter to beer; two ounces will ſupply the place of a pound of hops. The powdered roots are ſometimes uſed in Lapland inſtead of bread, but they are unpalatable. Some ſay that ſheep will eat it, and that it cures them of the rot*.

5. This is a marſh plant like the reſt, with a filiform creeping ſtem. Leaves ſmooth, petioled, ſcattered, few. Flowers white, on long peduncles. Corolla hirſute, with a crenated border, and five branched nectaries of a different colour adhering to the baſe of the ſegments. This plant forms the connecting link between this genus and Hydrophyllum.

Native of Cochinchina[1].

PROPAGATION AND CULTURE.

Mr. Miller informs us that the common Buck-bean was never cultivated in gardens. It deſerves cultivation however, and both that and the firſt ſpecies may be kept in pots or tubs of water.

To ſuch as wiſh to have the Buck-bean flower in perfection, Mr. Curtis recommends to collect the roots in ſpring or autumn, to put them in a large pot having a hole in the bottom, and filled with bog-earth, and to immerſe the pot about two-thirds of its depth in water. The foreign ſpecies muſt be kept in pots or tubs of water in the ſtove.

MERCURIALIS (*of Pliny; ſo called from Mercury, who is ſaid to have firſt diſcovered it.*)

Lin. gen. n. 1125. *Reich. n.* 1230. *Schreb. n.* 1534. *Gærtn. t.* 107. *Tournef. t.* 308. *Juſſ.* 385.

Claſſ. 22. 8. Dioecia Enneandria.

Nat. order of *Tricoccæ*. *Euphorbiæ*, Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* three-parted: *parts* ovate-lanceolate, concave, ſpreading.

COR. none, unleſs the calyx be ſo eſteemed.

STAM. *Filaments* nine or twelve, capillary, ſtraight, the length of the calyx. *Anthers* globular, twin.

* *Female.*

CAL. *Perianth* as in the male.

COR. none.

Nectaries, two awl-ſhaped points, one on each ſide of the germ, impreſſed on the groove of the germ.

PIST. *Germ* roundiſh, compreſſed, ſcored on each ſide, hiſpid. *Styles* two, reflex, horned, hiſpid. *Stigmas* acute, reflex.

PER. *Capſule* roundiſh, ſhaped like the ſcrotum, twin, two-celled.

SEEDS ſolitary, roundiſh.

OBS. M. ambigua & afra *are monoecious.*

ESSENTIAL CHARACTER.

MALE. *Cal.* three-parted. *Cor.* none. *Stam.* nine or twelve. *Anthers* globular, twin.

FEM. *Cal.* three-parted. *Cor.* none. *Styles* two. *Capſ.* dicoccous, two-celled, one-ſeeded.

* Woodville, Withering, Linn. Iap. [1] Loureiro.

SPECIES.

1. Mercurialis perennis. *Dog's Mercury.*
Lin. ſpec. 1465. *ſyſt.* 890. *Reich. n.* 265. *hort. cliff.* 461. *fl. ſuec. n.* 913. *Hudſ. angl.* 435. *Wither. arr. ed.* 2. 1125. *Curt. lond.* 2. 65. *Lighf. ſcot.* 620. *Relh. cant. n.* 730. *Hall. helv. n.* 1601. *Neck. gallob.* 510. *Pollich pal. n.* 931. *Fl. dan. t.* 400. *Villars dauph.* 3. 527. *Knipb. cent. n.* 1. 57. (male). *Mill. illuſtr. Bulliard fr.* 393.
M. Cynocrambe. *Scop. carn. n.* 1225.
M. montana teſticulata & ſpicata. *Bauh. pin.* 122. *Mor. hiſt. ſ.* 5. *t.* 34. *f.* 3, 4.
M. ſylveſtris Cynocrambe dicta vulgaris mas et fœmina. *Park. theat.* 295. 2. *t.* 296. 2.
M. perennis Cynocrambe dicta. *Raii ſyn.* 138. *Pet. brit. t.* 1. *f.* 5, 6.
Cynocrambe. *Matth.* 1299. *Camer. epit.* 998, 999. *Fuchſ. hiſt.* 444. *Dod. pempt.* 659. 1. (monoecous). *Lob. obſ.* 132. 1. *ic.* 1. 260. 1. *Bauh. hiſt.* 2. 979. 1. *Trag.* 191. *Lon.* 1. 136. 3. *Raii hiſt.* 163. *Ger. emac.* 333. 1. (monoecous).
Stem quite ſimple, leaves rugged.
[2. Mercurialis ambigua. *Doubtful Mercury.*
Lin. ſyſt. 890. *Reich.* 4. 265. *dec.* 1. 15. *t.* 8.
Stem brachiate, leaves ſmooth, flowers in whorls, female and males.]
3. Mercurialis annua. *Annual Mercury.*
Lin. ſpec. 1465. *ſyſt.* 890. *Reich.* 2. 265. *hort. cliff.* 461. *upſ.* 298. *mat. med.* 216. *Gærtn. fruct.* 2. 114. *Hudſ. angl.* 435. *Wither. arr. ed.* 2. 1126. *Curt. lond.* 5. 54. *Lighf. ſcot.* 621. *Relh. cant. n.* 731. *Hall. helv. n.* 1600. *Scop. carn. n.* 1226. *Neck. gallob.* 410. *Pollich pal. n.* 932. *Villars dauph.* 3. 528.
M. teſticulata ſ. mas & ſpicata ſ. fœmina. *Bauh. pin.* 121. *Mor. hiſt. ſ.* 5. *t.* 34. *f.* 1, 2.
M. mas & fœmina. *Camer. epit.* 996, 997. *Fuchſ. hiſt.* 475, 476. *Dod. pempt.* 658. 1, 2. *Lob. obſ.* 131. 1, 2. *ic.* 1. 259. 1, 2. *Lon.* 1. 136. 2. *Matth.* 1297, 1298. *Ger.* 262. 1, 2. *emac.* 332. 1, 2. *Park. theat.* 295. *Bauh. hiſt.* 2. 977. 2, 3. *Raii hiſt.* 163. *Blackw.* 162. 2, 3. & 164. 4.
M. annua glabra vulgaris. *Raii ſyn.* 139. *Pet. brit. t.* 1. *f.* 7, 8.
Stem brachiate, leaves ſmooth, flowers in ſpikes.
4. Mercurialis tomentoſa. *Woolly Mercury.*
Lin. ſpec. 1465. *ſyſt.* 890. *Reich.* 4. 266. *hort. cliff.* 461. *Sauv. monſp.* 128. *Gouan hort.* 507. *D'Alſo arrag. n.* 963.
M. fruticoſa incana ſpicata & teſticulata. *Tournef. inſt.* 534.
Phyllon teſticulatum & ſpicatum. *Bauh. pin.* 122.
P. marifícum & feminificum. *Cluſ.* 2. 48. *Park. theat.* 296. 4. *Raii hiſt.* 164.
P. arrhenogonon & thelygonon fol. incano Monſpeſſul. *Bauh. hiſt.* 2. 981. 1.
P. arrh. ſ. marifícum & thelygonon ſ. feminificum. *Ger. emac.* 333. 2, 3. *Mor. hiſt. ſ.* 5. *t.* 34. *f.* 5, 6.
Stem ſuffruticoſe, leaves tomentoſe.
[5. Mercurialis afra. *Cape Mercury.*
Lin. ſyſt. Reich. 4. 266. *mant.* 298. *Herm. par. opp.* 10.
Ricinocarpos afra. *Boerh. lugdb.* 1. 254.
Stem proſtrate herbaceous, leaves ovate ſubtomentoſe, flowers androgynous.
6. Mercurialis indica. *Indian Mercury.*
Lour. cochinch. 628.
Stem ſhrubby branched, leaves lanceolate even, flowers three-ſtyled.

DESCRIPTIONS, &c.

1. Root perennial, creeping, white, very fibrous. Stem upright, ſimple, a foot high, leafy, naked below, round, thickeſt at the joints, with two projecting ridges, not running down from the leaf-ſtalks, but from the joint between them, and terminating in the boſom of the pair below. Leaves in oppoſite pairs alternately from each ſide of the ſtem, ovate-lanceolate, wrinkled, ſerrate, pale green; the teeth blunniſh, and terminated by a whitiſh gland, viſible only with a magnifier. Petioles ſhort, furrowed, ſlightly hairy and rough to the touch. Peduncles axillary, near the top of the plant, oppoſite, hairy, in the male longer than the leaves,

in the female concealed among them. Flowers in the female few; in the male numerous, ſeſſile, growing in a ſort of whorl, and half ſurrounding the ſtem.

The male flowers have nine ſtamens for the moſt part: anthers firſt yellow, afterwards becoming blueiſh. The female flowers have the ſtyles rough on the inner ſide with ſemi-tranſparent tubercles. Dr. Withering aſks whether the nectaries are not rather rudiments of imperfect ſtamens. Capſule hairy, ſomewhat warty. Seed of a browniſh purple colour[a].

The male and female plants are rarely found intermixed, each ſort uſually growing in large patches; whence it is probable that this plant, which increaſes much by the root, rarely produces perfect ſeeds[b].

It is common in woods and under hedges, flowering from the end of march to the middle of may.

In the third edition of Ray's ſynopſis there is a very circumſtantial relation from Sir Hans Sloane, of a man with his wife and three children experiencing highly deleterious effects from eating this plant fried with bacon.]

Mr. Miller affirms that there have been many late inſtances of its poiſonous quality, from perſons in the ſpring, during a ſcarcity of greens, having boiled and eaten the leaves. [But he gives us no authority, and there are no inſtances on record except the ſingle one mentioned above. It would however be well to aſcertain the fact, becauſe it is a common plant, and the third ſpecies, which is not unlike it, is conſidered as a poiſon-herb, and is ſometimes uſed as an emollient.

Linnæus ſays, that M. perennis is noxious to ſheep. With us, no quadruped ſeems to eat it.

In drying, it turns blue, and ſteeped in water, it affords a fine deep blue colour, but which, ſays Dr. Stokes, is unhappily deſtructible both by acids and alkalies, and recoverable by no means that he has been able to diſcover.

2. Root fibrous, annual. Stem a ſpan high, upright, four-cornered, very ſmooth, very ſimply branched near the root. Branches very few, oppoſite, ſhort, ſpreading. Leaves oppoſite, horizontal, cordate-ovate, equally ſerrate; ſerratures fewer, remote: they are bluniſh, ciliate, ſmooth on both ſides, veined, flat. Branch-leaves lanceolate, on ſhorter petioles. Petioles channelled, almoſt erect, very ſmooth, one-third of the length of the leaves. Stipules in pairs, lateral, deciduous, lanceolate, erect, very ſmall. Glands four, at the baſe of the leaves, two on each ſide, one larger than the other, pear-ſhaped, ſmooth, very ſmall. Flowers axillary, ſeveral, cluſtered, each on its proper pedicel: female ſingle, opening firſt; males ſeveral (three or four), lateral, in the ſame axil with the female. Calyx of the male pale, ſegments acute, entire, ſmooth, ſcarcely concave. Filaments nine or eleven. In the female flower the calyx is ſmaller. Style none. Stigmas two, reflex, hiſpid. Capſule compreſſed, truncated at top, very ſmooth at the ſides and grooved, the angles hiſpid.

It reſembles the next ſpecies very much, but all the flowers are pedunculed, each on its peculiar pedicel, and not diſpoſed in a raceme. The whole plant is more ſhining; the leaves broader, with the ſerratures more acute and ciliated; the capſules more hiſpid, not rounded but truncated at the top.

Native of Spain, on the walls of Cadiz and Gibraltar[c].

3. Root annual, fibrous, white. Stem a foot or eighteen inches high, upright, ſmooth, frequently tinged with purple, branched quite to the bottom, ſwelled at the joints, ſomewhat flattened; a prominent line runs on each ſide of the ſtem, from one joint to another, alternately. Branches alternately oppoſite, leafy, reſembling the ſtem. Leaves oppoſite, ovate, bluniſh, ſpreading, having two glands at the baſe, bluntly and diſtantly ſerrate, when magnified appearing edged with hairs, light green, ſomewhat gloſſy and veined: they are ſometimes ovate-lanceolate, lanceolate, and even cordate. Petioles much ſhorter than the leaves, ſmooth, channelled above. Stipules four at each joint; two on each ſide, very minute. Pedunculs axillary, oppoſite, upright, naked; in the male longer than the leaves, obſcurely four-cornered, producing towards the top ſeveral round, ſeſſile, ſmall cluſters of flowers, having a ſtrong viroſe ſmell, ſomewhat like that of Elder: in the female the pedunculs is ſhorter than the leaves and generally ſuſtains two flowers: the calyx in both flowers is permanent; in the female the leafets are a little ſmaller. Nectaries two, one on each ſide of the germ. According to Lightfoot theſe nectaries, or barren filaments, as he calls them, are wanting. Stigmas on the upper ſide hiſpid lengthwiſe[d]. Capſule dicoccous, ſmall, the upper parts ovate, turgid, hiſpid with white briſtles on the back, which near the future unite in two very narrow creſts; towards the axis they are ſmooth, ſub-compreſſed, papery, two-valved, opening elaſtically. Seeds one in each part, globular, rough with tubercles, rufeſcent or aſh-coloured, terminated at top by a fungoſe, fiſtular, whitiſh umbilicus[e].

This may be diſtinguiſhed from perennial or Dog's Mercury, by its annual root, its branched ſtem, its more numerous flowers, its want of nectaries or barren ſtamens, and its ſmaller hairy ſeed-veſſels. It alſo flowers late in the ſummer, whereas Dog's Mercury flowers only in the ſpring.

Native of many parts of Europe, with us in waſte places and dunghills about towns and villages,] ſeldom, as Miller obſerves found at a diſtance from habitations, hence he conjectures that it might originally have come from France, as its common name of French Mercury implies. [It is only mentioned by Gerarde to grow under the dropping of the biſhop's houſe at Rocheſter, and by Parkinſon in Romney-marſh. It ſeems to be much more common now than formerly, which countenances its not having been originally indigenous.

This plant is mucilaginous, and was formerly much employed as an emollient. Tournefort informs us, that the French made a ſyrup of it, two ounces of which was given as a purge; and that they uſed it in clyſters and peſſaries, mixing one part of honey with one and a half of juice. In England it is now diſregarded. The ſeeds taſte like thoſe of Hemp[f].

Two hybrid varieties of this ſpecies, one with linear or capillary leaves, and another with laciniated leaves, are deſcribed and figured by Marchant in the Paris Memoirs for 1719.]

4. This riſes with a ſhrubby branching ſtem a foot and half high. Leaves oppoſite, elliptic, ſharpiſh, involuted, covered with a white down on both ſides. The male flowers grow in ſhort ſpikes from the ſide of the ſtem and branches. Capſules hoary.

Native of the South of France, Spain and Italy. [Cultivated by Mr. Miller in 1731[g].

5. Stem branched, diffuſed, pubeſcent, often creeping. Leaves heaped at the joints of the ſtem, blunt, three-nerved, petioled. Pedunculs axillary, lateral, briſtle-ſhaped, one-flowered, the length of the leaves. Male flowers many; females fewer on the ſame plant. Fruit ovate, truncated, compreſſed, grooved with two ſtyles, fiſſile into two ſeeds.—Found at the Cape of Good Hope by Koenig[h].

6. Stem upright, ſix feet high, with round, aſcending branches. Leaves ſerrate, ſhining, alternate. Number of ſtamens inconſtant, frequently about fifteen, and ſometimes almoſt fifty. Capſule three-lobed, three-celled.—Native of Cochinchina.

The freſh leaves boiled in ſoup purge gently[i].

PROPAGATION AND CULTURE.

The firſt ſpecies is eaſily propagated by the roots: the third by the ſeed, which it ſcatters ſo abundantly in gardens as to be a common weed.] If the ſeeds of the fourth be permitted to ſcatter, they will come up the following ſpring; and if ſown, it ſhould be in the autumn.

This plant ſhould have a warm ſituation, and a dry rubbiſhy ſoil, in which it will live three or four years, but in hard froſts it is frequently killed.

[a] Curtis. Woodw. M. S. Withering. [b] Woodward. [c] Linn. dec. [d] Gærtner. [e] Lightfoot and Withering. [f] Hort. kew. [g] Linn. mant. [h] Loureiro. [i] Curtis.

[MERCURIALIS. See *Acalypha*, *Chenopodium*, *Croton*, *Hydrocotyle*, *Impatiens*, *Tragia*.

MERCURY. See *Mercurialis*.

——— English. See *Chenopodium*.

MERIANA and MERIANELLA. See *Antholyza*.

MERULIUS. See *Agaricus*.

MESEMBRYANTHEMUM. (*Named first* Mesembrianthemum *by Brynius, from the flowers opening about noon. Changed by Dillenius to* Mesembryanthemum *from three Greek words,* μεσον *middle,* εμβρυον *an embryo, and* ανθος, *a flower.*)

Lin. gen. n. 628. *Reich. n.* 684. *Schreb. n.* 860. *Gærtn. t.* 126. *Dill. gen.* 9. *elth.* 179, &c. *Juss.* 317. Ficoides. *Tourn. mem. acad. par.* 1705.

Class. 12. 4. Icosandria Pentagynia.

Nat. order of *Succulentæ*. *Ficoideæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-cleft, superior, acute, spreading, permanent.

COR. one-petalled: *petals* lanceolate-linear, very numerous, in several rows, a little longer than the calyx, slightly united at the claws into one.

STAM. *Filaments* numerous, capillary, the length of the calyx. *Antheræ* incumbent.

PIST. *Germ* inferior, with five blunt angles. *Styles* commonly five, awl-shaped, upright and then bent back. *Stigmas* simple.

PER. *Capsule* fleshy, roundish, the navel marked with rays, the cells corresponding with the styles in number.

SEEDS very many, roundish.

OBS. M. geniculiflorum, noctiflorum, tortuosum *are four-styled.*

M. linguiforme, pomeridianum, pugioniforme, barbatum, acinaciforme, loreum *are ten-styled.*

ESSENTIAL CHARACTER.

Cal. five-cleft. *Pet.* numerous, linear. *Caps.* fleshy, inferior, many-seeded.

SPECIES.

* *With white corollas.*

1. Mesembryanthemum nodiflorum. *Egyptian Fig Marigold.*

Lin. spec. 687. *Reich.* 2. 504. *hort. upf.* 129. *Forsk. ægypt.* 98.

Kali crassulæ minoris folio. *Baub. pin.* 289. *Mor. hist.* 2. 610. *s.* 5. *t.* 33. *f.* 4.

K. neapolitanum inzoides repens. *Col. ecphr.* 2. 72. *t.* 73. *Rali hist.* 213. *Park. theat.* 1284. *t.* 1285. *f.* 2.

K. 2. *Alp. ægypt. ed.* 2. 125. *t.* 127. *ed.* 1. 50. *vers. ed.* 3. *t.* 46.

Leaves alternate roundish blunt ciliate at the base.

[2. Mesembryanthemum ciliatum. *Ciliated Fig Marigold.*

Ait. hort. kew. 2. 179. *Haworth monogr.* 363.

Leaves opposite connate half-round, stipules membranaceous rather jagged ciliary.

3. Mesembryanthemum caducum. *Small-flowered Fig Marigold.*

Ait. hort. kew. 2. 179.

Leaves filiform half-round distinct, teats ovate, lateral flowers sessile, terminating flowers surrounded by a pair of leaves.]

4. Mesembryanthemum crystallinum. *Diamond Fig Marigold or Ice Plant.*

Lin. spec. 688. *syst.* 468. *Reich.* 2. 505. *hort. cliff.* 216. 1. *upf.* 127. *suppl.* 259. *Dill. elth.* 231. *t.* 180. *f.* 221. *Gærtn. fruct.* 2. 201. *Haworth monogr.* 113. *Plenck, ic.* 397.

Ficoides africana folio plantaginis undulato micis argenteis adsperso. *Bradd. succ.* 5. *t.* 15. *f.* 28.

Leaves alternate ovate papulose, flowers sessile, calyxes broad ovate acute retuse.

[5. Mesembryanthemum humifusum. *Narrow-leaved Ice Fig Marigold.*

Ait. hort. kew. 2. 179.

Leaves embracing spatulate keeled, teats conical rugged, petals very minute.

6. Mesembryanthemum copticum. *Coptic Fig Marigold.*

Lin. spec. 688. *Reich.* 2. 505. *Haworth monogr.* 120. *Plenck, ic. t.* 398.

Kali ægyptiacum foliis valde longis hirsutis. *Baub. pin.* 289. *Rali hist.* 1915.

K. 3. *Alp. ægypt. ed.* 1. *f.* 49. *t.* 51. *ed.* 2. 125. *t.* 128. *ed.* 3. 59. *t.* 47.

K. longissimis fol. ægyptiacum. *Park. theat.* 1284. *t.* 1285. *f.* 3.

Leaves half round papulose distinct, flowers sessile axillary, calyxes five-cleft.

7. Mesembryanthemum apetalum. *Dwarf Spreading Fig Marigold.*

Ait. hort. kew. 2. 180. *Lin. suppl.* 258.

M. copticum. *Jacq. hort.* 3. 7. *t.* 6.

Leaves embracing distinct linear flat above, longer than the internodes, papulose; papulæ oblong; flowers pedunculed, calyxes five-cleft.]

8. Mesembryanthemum geniculiflorum. *Jointed Fig Marigold.*

Lin. spec. 688. *Reich.* 2. 505. *hort. cliff.* 218. 22. *Dill. elth.* 271. *t.* 205. *f.* 261. *Haworth monogr.* 214.

Ficoides neapolitana flore candido. *Bradl. succ.* 5. 17. *t.* 34.

F. capense folio tereti flore albido. *Pet. gaz. t.* 78. *f.* 3.

Leaves half round papulose distinct, flowers sessile axillary, calyxes four-cleft.

9. Mesembryanthemum noctiflorum. *Night-flowering Fig Marigold.*

Lin. spec. 689. *syst.* 468. *Reich.* 2. 506. *hort. cliff.* 220. 28. *Knorr. del.* 1. *t.* G. 8. *Dill. elth.* 273. *t.* 206. *f.* 262. *Haworth monogr.* 251.

α. purpureum. *Purple-flowering.*

β. stramineum. *Straw-coloured.*

Haw. mon. 252. *Dill. elth.* 274. *t.* 206. *f.* 267.

Leaves semicylindric undotted distinct, flowers pedunculed, calyxes four-cleft.

10. Mesembryanthemum splendens. *Shining Fig Marigold.*

Lin. spec. 689. *syst.* 468. *Reich.* 2. 506. *Dill. elth.* 270. *t.* 204. *f.* 260. *Haworth monogr.* 209.

Ficoides capensis frutescens, fol. teretibus conferris glaucis, flore albo. *Bradl. succ.* 1. 7. *t.* 6.

Leaves roundish undotted recurved distinct keeled, calyxes finger-shaped terminating.

11. Mesembryanthemum umbellatum. *Umbelled Fig Marigold.*

Lin. spec. 689. *Reich.* 2. 506. *Knipb. cent.* 3. *n.* 63. *Dill. elth.* 277. *t.* 208. *f.* 266. *Haworth monogr.* 336.

Ficoides africana erecta teretifolia, floribus albis umbellatis. *Herm. par.* 1. 166. *Bradl. succ.* 4. 12. *t.* 44. *Pluk. phyt. t.* 117. *f.* 1.

Leaves awl-shaped rugged-dotted connate with a patulous tip, stem upright, corymb trichotomous.

12. Mesembryanthemum expansum. *Houseleek-leaved Fig Marigold.*

Lin. spec. 697. *Reich.* 2. 507. *Knorr. del.* 2. *t.* M. 3. *Dill. elth.* 234. *t.* 182. *f.* 223. *Haworth monogr.* 195. *Pet. gaz. t.* 78. *f.* 10. *Bradl. succ.* 3. 7. *t.* 16. (Ficoides).

Leaves flattish lanceolate undotted spreading distinct opposite and alternate remote.

[13. Mesembryanthemum testiculare. *Short white-leaved Fig Marigold.*

Ait. hort. kew. 2. 181. *Haworth monogr.* 137.

Leaves four decussated flat above.

14. Mesembryanthemum crinifiorum. *Hair-flowered Fig Marigold.*

Lin. suppl. 259. *Haworth monogr.* 425.

Leaves ovate, scapes one-flowered.]

15. Mesembryanthemum Tripolium. *Plane-leaved Fig Marigold.*

Lin. spec. 690. *Reich.* 2. 507. *hort. cliff.* 217. 11. *upf.* 128. *Knipb. cent.* 8. *n.* 70. *Dill. elth.* 270. *t.* 179. *f.* 220. *Haworth monogr.* 102. *Bradl. succ.* 5. 14. *t.* 47. *Pluk. mant.* 329. *f.* 4. (Ficoides).

Leaves alternate lanceolate flat undotted, stems leafy simple, calyxes five-cornered.

16. Mesembryanthemum calamiforme. *Quill-leaved Fig Marigold.*

Lin. spec. 690. *Reich.* 2. 507. *Dill. elth.* 239. *t.* 186. *f.* 228. *Mill. fig.* 1. 176. *f.* 1. *Haworth monogr.* 140. *Bradl. succ.* 2. 10. *f.* 19. (Ficoides).

Stemless

Stemleſs, leaves roundiſh aſcending undotted connate, flowers eight-ſtyled.

[17. Meſembryanthemum digitatum. *Blunt-leaved Fig Marigold.*

Ait. hort. kew. 2 181. *Haworth monogr.* 139.

Almoſt ſtemleſs, leaves alternate round blunt, flowers axillary ſeſſile.

18. Meſembryanthemum pallens. *Pale or channel-leaved Fig Marigold.*

Ait. hort. kew. 2. 182. *Haworth monogr.* 197.

Leaves oppoſite embracing diſtinct oblong-lanceolate acute bluntly keeled, teats minute.

** *With red corollas.*

19. Meſembryanthemum papuloſum. *Angular-ſtalked Fig Marigold.*

Lin. ſyſt. 470. *ſuppl.* 259. *Haworth monogr.* 121.

M. Aitonis. *Jacqu. hort* 3. 8. *t.* 7.

Leaves oppoſite diſtinct ovate-ſpatulate, teats ſubglobular, calyxes angular five-cleft, branches angular.

20. Meſembryanthemum cordifolium. *Heart-leaved Fig Marigold.*

Lin. ſuppl. 260. *Glonin clif. het.* 22. *t.* 1. *f.* 2. *Jacqu. collect.* 2. 294. *it. vol.* 2. 487. *Smith ſpicil. t.* 6. *Haworth monogr.* 192.

Leaves oppoſite petioled cordate, calyxes four-cleft, ſtem round.

21. Meſembryanthemum limpidum. *Tranſparent Fig Marigold.*

Ait. hort. kew. 2. 183. *Haworth monogr.* 116.

M. cuneifolium. *Jacqu. ic.* 2. 488. *collect.* 2. 319.

Leaves oppoſite ſpatulate blunt rugged, teats oblong, calycine leaflets oblong blunt contracted in the middle.]

22. Meſembryanthemum bellidiflorum. *Daiſy-flowered Fig Marigold.*

Lin. ſpec. 690. *Reich.* 2. 507. *hort. cliff.* 218. 13. *Knorr. del.* 1. *t.* G. 5. 2 *n.* 1. *Dill. elth.* 244. *t.* 189. *f.* 233. *Haworth monogr.* 143. *Bradl. ſucc.* 2. 9. *f* 18. (Ficoides).

Stemleſs, leaves three ſided linear undotted toothed in three rows at the tip.

23. Meſembryanthemum deltoides. *Delta-leaved Fig Marigold.*

Lin. ſpec. 690. *Reich.* 2. 508. *hort. cliff.* 218. 14. *Knorr. del.* 1. *t.* G. 5. b. *n.* 1. *Haworth monogr.* 364.

α. *Dill. elth.* 255 *t.* 195. *f.* 246.

β. M. delt. major. *Great Delta-leaved Fig Marigold. Haw. mon.* 360. *Dill. elth.* 254. *t.* 196. *f.* 247.

γ. M. caſtellcem. *Small Delta-leaved Fig Marigold. Haw. mon.* 367. *Dill. elth.* 253. *t.* 195 *f.* 243, 244.

Leaves deltoid three ſided toothed undotted diſtinct.

24. Meſembryanthemum barbatum. *Bearded Fig Marigold.*

Lin. ſpec. 691. *Reich.* 2. 508. *hort. cliff.* 216. 5. *upſ.* 127. *Knigh. cent.* 10. *n.* 60. *Curt. magaz.* 70. *Haworth monogr.* 293.

M. ſtellatum. *Mill. dict.*

α. *Shrubby bearded Fig Marigold. Dill. elth* 255. *t.* 190. *f.* 234.

β. *Small dwarf bearded Fig Marigold. Dill. elth* 246. *t.* 190. *f.* 235.

M. hirſutum. *Haworth monogr.* 297.

γ. *Great dwarf bearded F. M Dill. elth.* 248. *t.* 190. *f.* 236.

M. denſum. *Haworth monogr.* 302.

Leaves ſubovate papuloſe diſtinct bearded at the tip.

25. Meſembryanthemum hiſpidum. *Briſtly Fig Marigold.*

Lin. ſpec. 691. *Reich.* 2. 509. *hort. cliff.* 217. 7. *Haworth monogr.* 277. *Mill. fig.* 1. 176. *f.* 3.

α. *Purple-flowered. Dill. elth.* 289. *t.* 214. *f.* 277, 278.

β. *Pale-flowered. Dill. elth.* 290. *t.* 214. *f.* 279, 280.

M. hiſp. pallidum. *Haw. mon.* 279.

γ. *Striped-flowered. Dill. elth.* 291. *t.* 215. *f.* 281.

M. ſtriatum. *Haw. mon.* 280.

Leaves cylindric papuloſe diſtinct, ſtem hiſpid.

26. Meſembryanthemum villoſum. *Hairy-ſtalked Fig Marigold.*

Lin. ſpec. 692. *Reich.* 2. 509. *hort. cliff.* 217. 6. *Haworth monogr.* 222.

Leaves pubeſcent connate undotted, ſtem hairy.

[27. Meſembryanthemum bracteatum. *Bracteated Fig Marigold.*

Ait. hort. kew. 2. 185. *Dill. elth.* 258. *t.* 197. *f.* 249. *Haworth monogr.* 119.

Leaves ſomewhat ſabre-ſhaped dotted recurved at the tip, braſtles embracing broad-ovate keeled.]

28. Meſembryanthemum ſcabrum. *Rugged Fig Marigold. Lin. ſpec.* 692. *Reich.* 2. 509. *hort. cliff.* 219. 20. *upſ.* 129 *Dill. elth.* 260. *t.* 197. *f.* 251. *Haworth monogr.* 345.

Leaves awl-ſhaped diſtinct muricate dotted all round underneath, calyxes awnleſs.

[29. Meſembryanthemum reptans. *Creeping Fig Marigold.*

Ait. hort. kew. 2. 185. *Haworth monogr.* 348.

Leaves three-ſided acute rugged, ſtem creeping.

30. Meſembryanthemum emarginatum. *Notch flowered Fig Marigold.*

Lin. ſpec. 692. *Reich.* 2. 510. *Dill. elth.* 259. *t.* 197. *f.* 250. *Haworth monogr.* 340. *Petaz. t.* 77. *f.* 3. (Ficoides).

Leaves awl-ſhaped hunped ſomewhat rugged, calyxes ſpiny, petals emarginate.]

31. Meſembryanthemum uncinatum. *Hook-leaved Fig Marigold.*

Lin. ſpec. 692. *Reich.* 2. 510. *hort. cliff.* 218. 16.

α. M. perfoliatum fol. minoribus diacanthis. *Dill. elth.* 250. *t.* 193 *f.* 239.

M. uncinatum. *Haworth mon.* 309.

Ficoides afra, fol. triangulari glauco perfoliato breviſſimo apice ſpinoſo. *Bradl. ſucc.* 3. 8. *t.* 26, 27. *Burm. afr. t.* 26. *f.* 3.

β. M. perfol. fol. majoribus triacanthis. *Dill. elth.* 251. *t.* 193. *f.* 240.

M. perfoliatum. *Mill. dict. n.* 19. *Haw. mon.* 307.

F. afr. frutiſcens perfoliata, fol. triang. glauco puncto. *Bradl. ſucc.* 5. 13. *t.* 46.

Joints of the ſtem terminated by connate acuminate dotted leaves toothed underneath.

32. Meſembryanthemum ſpinoſum. *Thorny Fig Marigold. Lin. ſpec.* 693. *Reich.* 2. 5 0. *hort cliff.* 216. 3. *Dill. elth.* 276. *t.* 208. *f.* 265. *Haworth monogr.* 338.

Ficoides africana, ſculeis longiſſimis & foliolis naſcentibus ex foliorum alis. *Tournef. in act. par.* 1705. *p.* 241. *Bradl. ſucc.* 41. *t.* 39.

Leaves from round three-ſided dotted diſtinct, thorns branched.

33. Meſembryanthemum tuberoſum. *Tuberous-rooted Fig Marigold.*

Lin. ſpec. 693. *Reich.* 2 510. *hort. cliff.* 216. 4. *Dill. elth.* 275. *t.* 207. *f.* 264. *Haworth monogr.* 271.

Leaves awl-ſhaped papuloſe diſtinct patulous at the tip, root beaded.

34. Meſembryanthemum tenuifolium. *Slender-leaved Fig Marigold.*

Lin. ſpec. 693. *ſyſt.* 469. *Reich.* 2. 510. *hort. cliff.* 220. *n.* 26. *upſ.* 128. *Dill. elth.* 264. *t.* 201. *f.* 256. *Haworth monogr.* 239. *Bradl. ſucc.* 1. 13. *t.* 9. *Mer. hiſp.* 3. 507. *f.* 12. *t.* 8. *f.* 6. *Pluk. mant.* 77. *ſpec.* 1. (Ficoides).

Leaves ſubfiliform ſmooth diſtinct longer than the internode, ſtems procumbent.

35. Meſembryanthemum ſtipulaceum. *Upright ſhrubby Fig Marigold.*

Lin. ſpec. 693. *Reich.* 2. 511. *hort. cliff.* 220. 29. *Dill. elth.* 279. *t.* 209. *f.* 267, 268. *Haworth monogr.* 255.

Leaves ſubtriquetrous compreſſed curved inwards dotted diſtinct beaded margined at the baſe.

[36. Meſembryanthemum læve. *Upright white-wooded Fig Marigold.*

Ait. hort. kew. 2. 187. *Haworth monogr.* 254.

Leaves cylindric ſlant embracing even, calyxes five-cleft, ſegments oblong blunt.

37. Meſembryanthemum deflexum. *Bending Fig Marigold.*

Ait. hort. kew. 2. 187. *Haworth monogr.* 347.

Leaves three-ſided acute glaucous, dots obſolete ſomewhat rugged, interior calycine ſegments membranaceous.

38. Meſem-

38. Mesembryanthemum australe. *New Zealand Fig Marigold.*
Ait. hort. kew. 2. 187.
Leaves subtriquetrous small-dotted connate bluntish, stem round creeping, peduncles bluntly ancipital solitary.]

39. Mesembryanthemum crassifolium. *Thick-leaved Fig Marigold.*
Lin. spec. 693. *Reich.* 2. 518. *hort. cliff.* 217. 9. *Dill. elth.* 266. *t.* 201. *f.* 257. *Haworth monogr.* 350. *Bradl. succ.* 4. 16. *t.* 38. (Ficoides).
Leaves semicylindric undotted connate three-sided at top, stem creeping semicylindric.

40. Mesembryanthemum falcatum. *Sickle-leaved Fig Marigold.*
Lin. spec. 694. *Reich.* 2. 511. *hort. cliff.* 219. 19. *Dill. elth.* 288. *t.* 213. *f.* 275, 276. *Haworth monogr.* 360. *Bradl. succ.* 5. 9. *t.* 42. (Ficoides).
Leaves somewhat sabre-shaped curved inwards dotted distinct, branches round.

41. Mesembryanthemum glomeratum. *Clustered Fig Marigold.*
Lin. spec. 694. *Reich.* 2. 512. *Dill. elth.* 287. *t.* 213. *f.* 274. *Haworth monogr.* 356.
Leaves roundish compressed dotted distinct, stem panicled many-flowered.

[42. Mesembryanthemum brevifolium. *Short-leaved Fig Marigold.*
Ait. hort. kew. 2. 188. *Haworth monogr.* 274.
Leaves cylindric very blunt papulose spreading, branches diffused.]

43. Mesembryanthemum torcum. *Leathery-fleshed Fig Marigold.*
Lin. spec. 694. *Reich.* 2. 512. *hort. upf.* 128. *Dill. elth.* 264. *t.* 200. *f.* 255. *Haworth monogr.* 232.
Leaves semicylindric recurved heaped gibbous at the inner base and connate, stem pendulous.

[44. Mesembryanthemum filamentosum. *Thready Fig Marigold.*
Lin. spec. 694. *Reich.* 2. 512. *Dill. elth.* 285. *t.* 212. *f.* 273. *Haworth monogr.* 380.
Leaves equilaterally triangular acute somewhat dotted and connate, angles rugged, branches hexangular.]

45. Mesembryanthemum acinaciforme. *Cimeter-leaved Fig Marigold.*
Lin. spec. 695. *Reich.* 2. 513. *hort. cliff.* 219. 18. *Kniph. cent.* 10. *n.* 59. *Dill. elth.* 282. *t.* 211. *f.* 270. & *t.* 212. *f.* 271. *Haworth monogr.* 397.
M. falcatum. *Lin. syst. ed.* 14. 469. *n.* 30.
Leaves cimeter-shaped undotted connate rugged at the angle of the keel, petals lanceolate.

[46. Mesembryanthemum forficatum. *Forked Fig Marigold.*
Lin. spec. 695. *syst.* 469. *Reich.* 2. 513. *Jacqu. hort.* 1. 9. *t.* 26. *Haworth monogr.* 394.
Leaves cimeter-shaped blunt undotted connate thorny at the tip, stem ancipital.

47. Mesembryanthemum speciabile. *Showy* or *Great purple-flowered Fig Marigold.*
Haworth monogr. 385. *Curt. magaz. t.* 396.
Leaves perfoliate very long glaucous dotted quite entire three-sided awl-shaped at the tip, stem woody ascending.]

*** *With yellow corollas.*

48. Mesembryanthemum edule. *Eatable Fig Marigold. Lin. spec.* 695. *syst.* 469. *Reich.* 2. 513. *Dill. elth.* 283. *t.* 212. *f.* 272. *Haworth monogr.* 392. *Herm. lugdb. t.* 245. *Mor. hist.* 3. 506. *s.* 12. *t.* 7. *f.* 1. (Ficoides).
Leaves equilaterally triangular acute strict undotted connate subserrate at the keel, stem ancipital.

49. Mesembryanthemum bicolorum. *Two-coloured Fig Marigold.*
Lin. spec. 695. *syst.* 470. *Reich.* 2. 513. *Dill. elth.* 267. *t.* 202. *f.* 258. *Mill. fig. t.* 177. *f.* 1. *Curt. magaz. t.* 59. *Haworth monogr.* 241. & coccineum 247. *Herm. lugdb. t.* 249. *Mor. hist. s.* 12. *t.* 6. *f.* 4. *Bradl. succ. t.* 8. *t.* 7. (Ficoides).
Leaves awl-shaped even dotted distinct, stem frutescent, corollas two-coloured.

[50. Mesembryanthemum aureum. *Golden Fig Marigold. Lin. syst. ed.* 10. 1060. *Ait. hort. kew.* 2. 190. *Curt. magaz. t.* 262. *Haworth monogr.* 333.
Leaves cylindric-three-sided dotted distinct, petals black-purple.]

51. Mesembryanthemum ferratum. *Serrate-leaved Fig Marigold.*
Lin. spec. 696. *Reich.* 2. 514. *hort. cliff.* 218. 15. *Dill. elth.* 249. *t.* 192. *f.* 238. *Haworth monogr.* 381. *Pet. gaz. t.* 78. *f.* 2.
Leaves awl-shaped three sided dotted distinct serrate backwards at the angle of the keel.

52. Mesembryanthemum micans. *Glittering Fig Marigold.*
Lin. spec. 696. *Reich.* 2. 514. *hort. cliff.* 220. 30. *Kniph. cent.* 7. *n.* 58. *Knorr. del.* 1. *t.* G. 5. *Dill. elth.* 292. *t.* 215. *f.* 282. *Haworth monogr.* 268. *Pet. gaz. t.* 78. *f.* 9. *Bradl. succ.* 1. 9. *t.* 8. *Rail hist.* 3. 366. *n.* 21. (Ficoides).
Leaves subcylindric populose distinct, stem rugged.

[53. Mesembryanthemum grossum. *Gouty Fig Marigold.*
Ait. hort. kew. 2. 191.
Leaves subcylindric clustered populose, trunk thickened at the base, branches diffused smooth.

54. Mesembryanthemum brachiatum. *Three-forked Fig Marigold.*
Ait. hort. kew. 2. 191. *Haworth monogr.* 254.
Stem and leaves cylindric populose, branches trichotomous.]

55. Mesembryanthemum roseum. *Heart-backed Fig Marigold.*
Lin. spec. 696. *Reich.* 2. 516. *hort. cliff.* 219. *n.* 23. *Kniph. cent.* 10. *n.* 61. *Dill. elth.* 240. *t.* 186. *f.* 229. *Haworth monogr.* 152.
Stemless, leaves semicylindric connate externally tubercled.

[56. Mesembryanthemum compactum. *Dotted thick-leaved Fig Marigold.*
Ait. hort. kew. 2. 191. *Haworth monogr.* 135.
Stemless, leaves connate dotted half-round three-sided at the tip somewhat reflex sharp, flowers sessile, calyx subcylindric six-cleft.]

57. Mesembryanthemum verrucularum. *Spit leaved Fig Marigold.*
Lin spec. 696. *Reich.* 2. 516. *hort. cliff.* 220. 24. *upf.* 128. *Kniph. cent.* 10. *n.* 62. *Dill. elth.* 268. *t.* 203. *f.* 259. *Haworth monogr.* 260.
Leaves three-sided cylindric acute connate dotted undotted distinct.

[58. Mesembryanthemum molle. *Soft Fig Marigold.*
Ait. hort. kew. 2. 192. *Haworth monogr.* 261.
Leaves three sided connate ovate glaucous undotted, crowded half round, peduncles axillary compressed.]

59. Mesembryanthemum glaucum. *Glaucous* or *Ice Fig Marigold.*
Lin. spec. 696. *Reich.* 2. 514. *hort. cliff.* 220. 27. *Dill. elth.* 256. *t.* 196 *f.* 248. *Haworth monogr.* 329.
Leaves three sided acute dotted distinct, calycine leaflets ovate-cordate.

60. Mesembryanthemum cornutum. *Horned Fig Marigold.*
Lin. spec. 697. *Reich.* 2. 515.
α. *Dill. elth.* 262. *t.* 199. *f.* 253, 254. *Haworth monogr.* 226. *Pet. gaz. t.* 77. *f.* 10. (Ficoides).
Long-leaved horned Fig Marigold.
β. M. diversiphyllum. *Haw. mon.* 228. *Dill. elth.* 261. *t.* 198. *f.* 252. *Bradl. succ.* 4. 18. *t.* 40. (Ficoides).
Short-leaved horned Fig Marigold.
Leaves three-sided semicylindric rugged-dotted with a raised line above the base and connate.

[61. Mesembryanthemum pinnatifidum. *Pinnatifid Fig Marigold.*
Lin. syst. 470 *suppl.* 360. *Curt. magaz. t.* . *Haworth monogr.* 112.
Leaves flat oblong pinnatifid.

62. Mesembryanthemum semibarbatum. *Sessile-flowered Fig Marigold.*
Ait. hort. kew. 2. 193.
Leaves flat spatulate, both these and the stems papillose, branches divaricate, flowers sessile.]

63. Mesem-

63. Mesembryanthemum tortuosum. *Twisted-leaved Fig Marigold.*
Lin. spec. 697. *Reich.* 2. 515. *hort. cliff.* 217. 10. *Knipb. cent.* 8. *n.* 69. *Dill. elth.* 233. *t.* 181. *f.* 222. *Haworth monogr.* 196. *Bradl. succ.* 2. 7. *t.* 16. (Ficoides).
Leaves flattiſh oblong-ovate ſubpapilloſe cluſtered connate, calyxes three-leaved two-horned.
[64. Mesembryanthemum glabrum. *Smooth-leaved Fig Marigold.*
Ait. hort. kew. 2. 193.
Leaves embracing diſtinct ſpatulate very ſmooth, peduncles the length of the leaves, calyxes hemiſpherical.
65. Mesembryanthemum Helianthoides. *Spatula-leaved Fig Marigold.*
Ait. hort. kew. 2. 193.
Leaves ſpatulate flat even, peduncles very long, calyxes flat at the baſe angular.
66. Mesembryanthemum pomeridianum. *Great yellow-flowered Fig Marigold.*
Lin. ſpec. 698. *ſyſt.* 470. *Reich.* 2. 515. *det.* 25. *t.* 13. *Jacqu. ic. vol.* 2. 489. *Herm. lugdb.* 259. *Seba muſ.* 1. 29. *t.* 19. *f.* 5. (Ficoides).
Leaves flattiſh broad-lanceolate even ſubciliate diſtinct, ſtem peduncles and germs rough-haired.
67. Mesembryanthemum echinatum. *Echinated Fig Marigold.*
Ait. hort. kew. 2. 194.
α. M. echinatum luteum. *Yellow echinated Fig Mar. Haworth monogr.* 292.
β. M. echin. album. *White echinated Fig Mar. Haw. mon.* 288.
Leaves oblong-ovate ſubtriquetrous gibbous ramentaceous-hiſpid, calycine ſegments leaf-ſhaped.]
68. Mesembryanthemum ringens. *Ringent Fig Marigold.*
Lin. ſpec. 698. *Reich.* 2. 516. *hort. cliff.* 218. 12.
α. M. caninum. *Dog's-chap Fig Marigold. Haworth mon.* 159. *Dill. elth.* 241. *t.* 188. *f.* 231. *Mill. fig. t.* 177. *f.* 2. *Bradl. ſucc.* 2. 8. *t.* 17.
β. M. felinum. *Cat's-chap Fig Marigold. Haw. mon.* 161. *Dill. elth.* 240. *t.* 187. *f.* 230. *Knorr. del.* 1. *t.* G. b. *n.* 1. *Mart. cent. t.* 30. (Ficoides).
M. roſtratum. *Mill. dict. n.* 40.
Almoſt ſtemleſs, leaves ciliate toothed dotted.
69. Mesembryanthemum dolabriforme. *Hatchet-leaved Fig Marigold.*
Lin. ſpec. 699. *Reich.* 2. 517. *hort. cliff.* 219. 19. *Knipb. cent.* 1. *n.* 51. *Curt. magaz. t.* 32. *Dill. elth.* 248. *t.* 191. *f.* 237. *Haworth monogr.* 166. *Bradl. ſucc.* 1. 11. *t.* 10. (Ficoides).
Stemleſs, leaves hatchet-ſhaped dotted.
70. Mesembryanthemum diſforme. *Various-leaved Fig Marigold.*
Lin. ſpec. 699. *Reich.* 2. 517. *Mill. fig. t.* 176. *f.* 2. *Dill. elth.* 252. *t.* 194. *f.* 241, 242. *Haworth monogr.* 169. *Pluk. phyt. t.* 325. *f.* 4.
Stemleſs, leaves diſform dotted connate.
71. Mesembryanthemum albidum. *White Fig Marigold.*
Lin. ſpec. 699. *Reich.* 2. 517. *Dill. elth.* 243. *t.* 189. *f.* 232. *Haworth monogr.* 156. *Bradl. ſucc.* 5. 10. *t.* 43.
Stemleſs, leaves three-ſided quite entire.
72. Mesembryanthemum linguiforme. *Tongue-leaved Fig Marigold.*
Lin. ſpec. 699. *Reich.* 2. 517. *hort. cliff.* 219. 8. *upſ.* 128. *Knorr. del.* 1. *t.* 5. *t.* G. 6. *n.* 2.
α. M. ſcalpratum. *Broad tongue-leaved Fig Mar. Dill. elth.* 235. *t.* 183. *f.* 224. *Haworth monogr.* 187.
β. *Narrow tongue-leaved Fig Mar. Dill. elth.* 237. *t.* 184. *f.* 226. *Haw. mon.* 182.
γ. *Long tongue-leaved Fig Mar. Dill. elth.* 238. *t.* 185. *f.* 227.
M. longum. *Haw. mon.* 177.
Stemleſs, leaves tongue-ſhaped thicker at the edge unarmed.
73. Mesembryanthemum pugioniforme. *Dagger-leaved Fig Marigold.*
Lin. ſpec. 699. *ſyſt.* 470. *Reich.* 2. 518. *mant.* 398. *hort. cliff.* 216. 2. *upſ.* 129. *Dill. elth.* 280. *t.* 210. *f.* 269. *Haworth monogr.* 387. *Bradl. ſucc.* 2. 5. *t.* 14. (Ficoides).
Leaves alternate cluſtered axil-ſhaped three-ſided very long undotted.

**** *With green corollas.*

[74. Mesembryanthemum viridiflorum. *Green-flowered Fig Marigold.*
Ait. hort. kew. 2. 196. *Curt. magaz. t.* 326. *Haworth monogr.* 199.
Leaves ſemicylindric papuloſe-hairy, calyxes five-cleft hirſute.

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75. Mesembryanthemum capillare.
Lin. ſyſt. 470. *ſuppl.* 260.
Leaves connate round papuloſe, ſtem upright, branchlets one-flowered filiform ſmooth.

DESCRIPTIONS, *&c.*

Of this very numerous and ſplendid genus very few are annual, fewer biennial, many are perennial, but moſt are ſhrubby, eſpecially towards the baſe. Leaves moſtly oppoſite, ſeldom alternate, thick or ſucculent, of various forms. Flowers ſolitary, axillary or extra-axillary, but more frequently terminating. The fruit is ſometimes ſhaped like a fig[a].

The annual ſorts are, nodiflorum, cryſtallinum, copticum, apetalum, limpidum, pinnatifidum, ſeſſiliflorum, glabrum, Helianthoides, pomeridianum. The biennials, caducum, Tripolium, papuloſum.

Linneus has ranged the ſpecies from the colour of the flowers, which is obvious, and ſufficiently conſtant, with few exceptions. Mr. Haworth has changed the order, and arranged the perennial ſorts chiefly from the leaves, thus—1. Subaphylia or almoſt leafleſs. 2. Subacaulia foliofa, almoſt ſtemleſs and leafy. 3. Cauleſcent with flat leaves. 4. Suffruteſcent with the leaves rounded underneath. 5. Suffruteſcent with three-ſided leaves.

They are chiefly natives of the Cape of Good Hope. Three or four of the ſpecies keep their flowers cloſed all day, and open in the evening; hence ſome have called theſe *Nyctheranthemum*, but as they agree with the reſt in other circumſtances, particularly in the fructification and habit, the diſtinction is abſurd.]

1. This is a native of Egypt, where they cut up the plants and burn them for pot-aſh; it is eſteemed the beſt ſort for making hard ſoap and the finer glaſs. It is an annual plant. In the ſtove the ſtalks grow long and ſlender, and are not productive of flowers. Raiſed in a hot-bed, and afterwards expoſed to the open air, it flowers freely. [It alſo grows wild in Italy, about Naples, on high ſea banks expoſed to the ſpray.

Stems decumbent and diffuſed, the whole plant papuloſe. Calyxes thick, five-toothed, two of the teeth larger, leaf-ſhaped. Petals very narrow, but flat, connate at the baſe. Stigmas generally five, ſeldom four[b].

It was cultivated in 1748, by Mr. Miller, and flowers in auguſt[c].

2. This is a charming little ſhrub, with a perennial fibrous root, and ſlender, but firm, nearly upright, ſtraight branches, which are thickly adorned with green, dotted, very ſmall, ſhort, triquetrous leaves. The ciliæ are not always obſervable[d].—Found at the Cape by Maſſon. Introduced in 1774[e].

3. This is another ſpecies found at the Cape by Maſſon. It was introduced in 1774, flowers in july and auguſt, and is biennial[f]. We have not any deſcription of it.]

4. This is an annual plant, diſtinguiſhed by its leaves and ſtalks being cloſely covered with pellucid pimples full of moiſture, which, when the ſun ſhines on them, reflect the light, and appear like ſmall bubbles of ice, whence it is called the *Ice-plant*; others name it the *Diamond Plant* or *Diamond Flower*.

[The ſtem has oppoſite and alternate cylindrical branches, which when luxuriant trail upon the ground, and are from one to two feet long. The firſt four or

[a] Jaſſieu. [b] Forſk. [c] Hort. kew. [d] Haworth. [e] Hort. kew. [f] Idem.

ſix leaves are oppoſite, each pair croſſing the other, very lax and ſucculent, waved, blunt, attenuated or wedge-ſhaped at the baſe, and connate, rather keeled underneath, eſpecially at the baſe, with a ſlight correſponding channel along the centre of the upper ſurface, which is covered with leſs and duller pimples than any other part of the plant: margin regularly edged, with globular papulæ or pimples, which are leſs than thoſe on the ſtems: the upper leaves are alternate, growing leſs and leſs, nearly ſeſſile, ſmall. Peduncles extremely ſhort or none, alternate, from the axils of the upper leaves. Segments of the calyx unequal, three of them large and leafy, beſet with pellucent pimples, and acutely pointed, the two inner much ſmaller, frequently coloured with a purpliſh tinge, acute at the points. Petals very narrow, bluſh-coloured without, whiteiſh within, ſometimes entirely white, making a poor appearance. Germ ſmooth, with a navel at the top. Styles five, longiſh, not ſtraight[a]. Capſule inferior, or united with the belly of the calyx beyond the middle, ſmooth, obſcurely five-cornered, five-celled, frequently purpliſh, opening at top by five cleſts which are thickened about the margin: cells narrow clothed with a cartilaginous lamina: partitions ſpongy, thick, narrowing like a wedge towards the axis. Seeds as many as twenty-five in a cell, ſmall, flatted a little, kidney-form triangular, ſomewhat wrinkled[b].

Native of Greece, near Athens, where it was found by the late John Sibthorp, M. D. Profeſſor of Botany at Oxford. It was cultivated here in 1727, as appears from Bradley. It flowers in july and auguſt[c].

5. This is a native of the Cape, where it was found by Maſſon. Introduced here in 1774. It flowers in july and auguſt. It is one of the ſhrubby ſorts[d], but we have no deſcription of it.

6. This is of the ſame ſtature and ſize with M. nodiflorum. Stem trichotomous, herbaceous. Leaves oppoſite, terminating the branchlets, the length of the internodes. Flowers ſeſſile, ſolitary, in the forks of the branches. Calyx longer than the corolla. Capſule turbinate, retuſe, five-angled, the angles ciliate, compreſſed. Seeds roundiſh, ſomewhat ſcrew-ſhaped, ſtriated. This is an annual, and a native of Egypt.

7. This is alſo an annual. Stems herbaceous, round, red. Theſe and the whole plant are covered with obſolete, papuloſe, ſhining dots. Leaves oppoſite, channelled above, ſemicylindric underneath, ſomewhat muricated, blunt. Peduncles ſhort, one-flowered. Leaflets of the calyx unequal, ſubulate-cylindric. Petals twenty-four, white, diſtant, briſtle-ſhaped, very ſhort, reſembling filaments without anthers, incumbent on the germ. Filaments very like the petals, but ſhorter. Anthers browniſh. Germ orbiculate, large, convex, ſmooth and even above. Styles five, approximating, ſhort. Stigmas recurved[e].

M. copticum of Jacquin is ſuppoſed to be this ſpecies and not the *copticum* of Linnæus. He obſerves, that the ſtems are very ſhort, diviided into branches that appear to be ſtems; that the flowers are about fourteen only; the filaments of the ſame length with the petals, with red anthers; the ſtyles thick, hirſute and reflected. In other reſpects his deſcription agrees with that given above from the ſupplement of the younger Linnæus.

Native of the Cape. Introduced in 1774, by Mr. Francis Maſſon. It flowers in july and auguſt[a].

8. Plant, whilſt young, herbaceous, but becoming ſhrubby by age. Trunk then woody, a finger or more in thickneſs, covered with a browniſh aſh-coloured bark. Branches decumbent, divaricating whilſt young, cylindric, tender, covered with minute pimples, dark green, thick, fleſhy, the bark, when old, becoming ſomewhat woody, and aſſuming various flexuoſe contorted directions: all the branches are nearly of the ſame thickneſs, but the upper ones are ſhorter, and more woody next the ſtem. Leaves moſtly oppoſite, but not always ſo, eſpecially on the flowering branches, ſmooth, cylindric, convex beneath, ſlightly channelled above, minutely pimpled. Flowers ſmall, making a poor appearance. Peduncles very ſhort and thick, ſolitary, remote, one-flowered, uſually axillary, but ſometimes terminating. Calyx ſtudded with larger papillæ than any other part of the plant; quadrifid, ſegments unequal; two large, leafy, channelled above, two leſs, ſubcylindric with the edges ſomewhat membranaceous. Petals dull yelloweſh white or pale ſtraw-colour, linear, entire or emarginate, reflex, the inner ones gradually ſmaller. Anthers ſub-didymous, large for the ſize of the flower; pollen yellow. Styles four, ſhort. Capſule fleſhy, finally ſemitranſparent, quadrangular, four-celled. Seeds few, neſtling in the pulp[b].

Native of the Cape. Cultivated in 1727, according to Bradley. It flowers from june to auguſt[c].

9. The trunk, which attains the thickneſs of the little finger, is ſmooth and even, covered with a bay-coloured bark, and has frequent joints where branches have fallen. Branches oppoſite, ſpreading irregularly, and decumbent from the weight of the leaves. Leaves pale green and ſlightly glaucous, obtuſely triangular, ſmooth and even, opaque, minutely and thickly dotted ſo as to make a very fine net: the lower ones longer; the upper ones, whence the peduncles ariſe, ſhorter and thicker. Calyx four-cleft. Petals narrow, the inner ones gradually ſhorter, inwardly white, outwardly purple. The flowers are cloſed during the day, open in the evening and continue open during the night, at which time they are very ſweet. Styles four. Capſule four-celled. Two ſegments of the calyx become ſmaller and almoſt membranaceous as the flower opens, and diſappear as the fruit ripens.

β. This differs no otherwiſe from the purple one than in the flowers being ſomewhat larger, and of a different colour, namely of a very pale yellow on the outſide[d].

Native of the Cape. Cultivated in 1714, by the Dutcheſs of Beaufort. It flowers from june to auguſt[e].

10. Stems woody, a foot and more in length, with many ſhort branches and cluſtered leaves, with which they are ſo loaded that they cannot ſupport themſelves. Leaves ſhort, bluntly three-ſided, thick, ſmooth and ſhining, pale green ſcarcely if at all glaucous, with a few thick green dots. Flowers ſolitary at the ends of the branchlets, on very ſhort peduncles, large, whiteiſh or very pale yellow within, reddiſh on the outſide and at the tips. Petals very narrow, the inner ones gradually ſmaller. They appear in july and auguſt, and open before and after noon, when the ſun ſhines, opening and cloſing ſeveral times, and finally cloſing about the fruit, which is ovate, with five lines or angles, five-celled. The five ſegments of the calyx are nearly equal[f].

According to Mr. Haworth, the ſegments of the calyx are blunt, large and long, three with large membranaceous edges, two nearly cylindrical, rather longer, without membranes, very blunt, and reſembling the leaves of the plant. The flowers whiteiſh, not ſhewy or large.

Native of the Cape. Cultivated in 1710, as appears from Bradley[a].

11. Stems woody, forming a regularly branched handſome ſhrub, ſtanding without ſupport with a ſtout ſtem, from two to three feet high and even more. Branches many, ſpreading every way, having four lines running along them, which give them the appearance of being quadrangular. Leaves ſubtriquetrous, wrinkled, bending this way and that, ſomewhat reſembling bull's horns, glaucous except the younger ones, which are green and leſs wrinkled, when held up to the light they appear to have innumerable pores. From one axil of each pair of leaves, ſometimes from both, one pair of leaves uſually ſpringe, which becomes a ſhoot, with ſeveral pairs of leaves on it. Flowers terminating, white, opening when the ſun ſhines from ſeven or eight in the morning to two or three in the afternoon, and ſmelling like thoſe of May or White-thorn. Capſules ſmall, roundiſh, ſomewhat angular with five

[a] Haworth. [b] Gærtner. [c] Hort. kew. [d] Idem. [e] Linn. ſuppl. [f] Hort. kew.

[a] Haworth. [b] Hort. kew. [c] Dillenius. [d] Hort. kew. [e] Dillenius. [f] Hort. kew.

blunt ribs and five-celled. Seeds ſmall, ſubrufous[1]. Native of the Cape. Cultivated in 1727, as appears from Bradley. It flowers from june to ſeptember[2].

12. Stems and branches irregular and diſtorted, as in *tortuoſum*, from which however it differs in being ſomewhat higher and more branched; the branches interwoven, leſs woody, but ſofter and more fleſhy, with the bark ſmoother and of a paler yellow; the leaves greener, ſomething wider and thinner, with the ridge on the outer and the groove on the inner part more conſpicuous, though leſs concave; the dots rather oblong than round, ſhining like ſilver in the ſunſhine; they are not produced in bundles, as in *tortuoſum*, but more looſely, and decuſſated. Flowers ſomewhat larger and paler; the petals rather wider, and becoming yelloſwiſh with age. Calyx and capſules larger and more ſwelling.

The inner petals are yelloſwiſh, the outer larger and whitiſh with a very ſlight tinge of yellow, ſhining in the ſun. Three of the calycine ſegments are larger and two ſhorter; ſometimes three ſmaller and two larger. Capſule globular, with five grooves, and as many rays at the top, five-celled[3].

Native of the Cape. Cultivated in 1705, by Dr Uvedale. It flowers in july and auguſt[4].

13. Stemleſs, very white and ſhort. Rarely more than four living leaves on a plant at once, and of theſe the oldeſt pair often leſs plump than the other. All the leaves are connate below, extremely ſhort and thick, but much thicker at the baſe than towards their blunt points, rounded on the outſide, flat within[5].

Native of the Cape, where it was found by Maſſon. Introduced in 1774[6].

14. Plant the ſize of the common Daiſy. Leaves ovate-oblong, petioled, with cryſtalline dots. Scape an inch long, one-flowered. Calyx deeply five-cleft; ſegments oblong, very blunt. Petals five, oblong, pedicelled, longer than the calyx, white. Stamens briſtle-ſhaped, white, very long.—Found at the Cape of Good Hope by Montin[7].

15. Root biennial. Stems proſtrate, ſmooth, finally terminating in flowers. Lower leaves many, almoſt as long as the ſtems, reſembling thoſe of After Tripolium, but thicker and more ſucculent. Among theſe ſpring three or four ſtems, ſometimes more round and having two or three joints, at each of which are two ſmaller leaves at the lower, and three or four at the upper joints. Surface in all ſmooth and even, and very minute white teeth about the edge, more perceptible in the ſmaller leaves, and the lower part of the others. Flowers uſually ſolitary, ſilvery white, opening in the middle of the day, and of ſhort duration. Peduncles ſhort, round or ſubquinquangular. Calyx large, acutely and deeply pentagonal, five-cleft; ſegments ſhortiſh, unequal, the two outer leafy, plane and large; the three inner leſs, with awl-ſhaped points, beneath which is a projecting ridge-like membrane. Petals extremely narrow, ſo as to be almoſt capillary, and not quite ſo long as the calyx; the inner ones ſhorter and more ſlender than the outer. Capſule very large, deeply five-angled, five-celled, very fleſhy, fleſh extremely hard and firm; cells very ſmall, filled with a few large ſeeds, which are kidney-form, wrinkled, and of a ſhining dark brown colour[8].

Native of the Cape. Cultivated in the botanic garden at Chelſea in 1700. It flowers from june to ſeptember[9].

16. Leaves numerous, either upright or bending upwards, rigid, thick and fleſhy, about a finger's length, appearing to be round, but ſlightly flatted on the inſide, eſpecially near the baſe; they are deep green and glaucous, thickly ſet with ſmall green dots and ſome tranſverſe lines, pointed at the end, the point purple or green. Flowers ſolitary, on a ſhort ſcape from the centre of the plant, large. Calycine ſegments unequal. Petals very narrow, white, ſhining like ſilver in the ſun, void of ſcent, opening about noon in july, auguſt and ſeptember. Style eight-cleft. Capſule eight-celled[10].

[1] Dillenius. [2] Hort. kew. [3] Dillenius. [4] Hort. kew. [5] Haworth. [6] Hort. kew. [7] Linn. ſuppl. [8] Dillenius, Haworth. [9] Hort. kew. [10] Dillenius.

Native of the Cape. Cultivated in 1717, as appears from Bradley[1].

17. Found at the Cape by Maſſon. Introduced in 1775[2].

18. This alſo was found at the Cape by Maſſon, and was introduced in 1774[3].

19. Root biennial. Stem ſhort, nearly the thickneſs of the little finger. Branches oppoſite, ſpreading very much, obſcurely angular or round, herbaceous, green, the lower ones procumbent and a foot and half long. Leaves thick, narrowing into a ſhort petiole or ſubſeſſile, entire, flat, ſomewhat waved, oppoſite on the branches, at the flowers ſingle, that is the flowers come out ſingly on a peduncle oppoſite to a leaf. Theſe, the ſtems, peduncles, calyxes and germs are covered with very minute ſhining dots, which when examined with a magnifier appear to be clear drops like ice. Calyx green and deeply five-cornered, three or two only of the leaflets run out into a ſpatulate blunt flat bractæ the length of the corolla: the others are ſmall and ſharp. Petals numerous, linear, ſharp, pale beneath, within fleſh-coloured, on the outſide red. The flowers have no ſcent, and are open from three to ſix in the afternoon[4].

Native of the Cape. Introduced in 1774 by Mr. Francis Maſſon. It flowers from april to october[5].

20. Root perennial. Stem rather ſhrubby, fleſhy, upright, much branched, roundiſh, ſmooth, covered, as well as the leaves and calyx, with depreſſed dots. Branches oppoſite or alternate, axillary, ſpreading, round, often very ſlender at their baſe, leafy. Leaves ſpreading, ovate-cordate, acute, entire, bright green on both ſides, and marked with a central nerve. Footſtalks half the length of the leaves, channelled, fleſhy. Stipules none. Flowers ſolitary, peduncled, erect, at firſt terminating, but afterwards becoming axillary from the protruſion of new branches. Calyx turbinated, fleſhy, four-cleft; ſegments acute, two oppoſite larger and broader. Petals ſcarcely ſo long as the calyx, very numerous, reddiſh purple, white at the baſe, and united; placed in three or four ranks, the inner ones gradually ſmaller. Stamens very numerous, ſhort, attached to the corolla. Germ half-inferior, ovate, marked with four or five furrows. Styles four or five, ſhort, recurved. Stigmas acute. Cells and valves of the fruit agree in number with the ſtyles[6].

Native of the Cape, where it was found by Maſſon, and others. Introduced in 1774. It flowers from may to ſeptember[7].

21. Root annual. Stems round, branching, purple, half a foot long or more, procumbent, the whole covered with icy blebs like M. cryſtallinum. Leaves lanceolate-wedge-form, bluntiſh, quite entire, flat, ſeſſile but drawn out into a long narrow tail at the baſe, the longeſt four inches in length. Peduncles axillary, ſolitary, round, one-flowered, three or four inches long. Flowers elegant, an inch and half in diameter, void of ſcent. Calyx five-cleft, with very unequal, fleſhy, ſpreading ſegments, two of them, almoſt oppoſite, include the corolla before it expands, when expanded they are only half its length, and end in a cowled ſharp tip: the three others are bluntiſh, ſomewhat ſpatulate, and about the ſame length with the corolla. Petals about forty, linear, ſharpiſh, flat, pale purple on both ſides with a deep red line along the middle. Filaments very deep red, ſhort, converging into a cone. Capſule depreſſed, five-celled[8].

Native of the Cape, where it was found by Maſſon. Introduced 1774. It flowers in july[9]. Jacquin ſays in may.

22. Leaves cluſtered, decuſſated, from an inch to two inches in length, deeply glaucous, flat above, but below produced into a ſharpiſh back, towards the end, both above and below, or on all the ſides armed with ſtiffiſh ſharp toothlets; they are ſmooth, and do not appear to be dotted unleſs they are held up to the light, but they have a few tranſverſe wrinkles. Peduncles from an inch to an inch and half and two inches in height, tender, round, uſually leafleſs, but ſometimes

[1] Hort. kew. [2] Idem. [3] Jacquin. [4] Hort. kew. [5] Smith. [6] Hort. kew. [7] Jacquin. [8] Hort. kew.

having

having a pair of leaves. Flowers solitary, terminating, the form and size of a Daisy, whitish with a tinge of purple, and streaked with a purple line along the middle of each petal both within and without; they spread out regularly in two or three rows, and are sometimes entire, sometimes cut a little at the end. They open about noon. Calyx divided into five equal glaucous segments. Capsule depressed, five-celled, terminated by five prominent starry points [a].

Native of the Cape. Cultivated in 1717, as appears from Bradley. It flowers from june to august [b].

23. Peduncles one-flowered, two-leaved. Corollas pale purple, sweet-smelling, not longer than the calyx. Stamens white, upright and forming a cone. Anthers yellow [c].

α. This grows to two feet and more in length, with a round stem, the thickness of a finger, twisted at bottom: from this at about two inches distance arise opposite branches, the bark of which on the lower part is brownish, on the upper yellowish, on younger plants and branchlets purple. They are almost covered with short thick leaves, the angles of which are almost equal; they have usually three, but sometimes only two tubercled teeth at the edge, ending in a purplish spinule; they are green with a glaucous bloom on them. From each pair of leaves bundles of three or four pairs spring out, which gradually become new branches. Flowers in a sort of umbel at the ends of the branches, smelling like May or White-thorn, pale purple, with only one row of petals, which are commonly entire and blunt, but sometimes slightly cut at the end. In warm weather the flowers continue open day and night.

β. This has larger and paler leaves, with toothlets of the same colour with the leaves themselves. Flowers somewhat larger and paler, rather more inclining to violet, and appearing three or four weeks later.

γ. Leaves somewhat longer, with an even or untoothed back, and the sides not so flat, but the inner part more bent in and somewhat more hollowed: the toothlets also, two of which there are on each side, stand out less, and are less spiny; they generally terminate in a purplish spinule. Flowers of a deeper colour more inclining to violet, more scattered: some of the petals more slender like threads. The stamens, when they have shed their pollen, diverge. The bark on the stem is more rough and fuller of chinks. It has the same smell with the others, like the flowers of Hawthorn: and it flowers in may and june [d].

Mr. Haworth remarks, that the plant is taller, more upright, more spreading, and every way larger than the other varieties. The leaves larger, whiter, longer in proportion, perfectly entire on the back or keel angle, and scarcely to be called even slightly denticulate on the edges. Flowers larger, of a pale rosy-purple colour, numerous, open in a morning as soon as the sun shines strongly upon them.

These varieties all agree in having triquetrous leaves, shaped like the Greek *delta*, of a smooth and even surface, appearing porous when held up to the light. The capsules are turbinate and five-celled [e].

Native of the Cape. Cultivated in 1714, by the Dutchess of Beaufort [f].

24. The leaflets of the calyx being bearded at the tip, as well as the leaves of the plant, shows the origin of the perianth. The least interior petals, which surround the stamens, are white [g].

α. Stems somewhat woody, slender. Branches procumbent, frequent, soft and brittle when green, but becoming tough and flexible when dry, round, somewhat cinereous, having a pair of leaves at short intervals at each joint, ending bluntly, tubercled, netted like a serpent's skin, appearing dotted when held to the light, having five, six, or seven radiating spinules at the end, at first greenish, then brownish, and at length black, with a black dot in the middle of them: the leaves are not properly round or cylindric, but have the upper part somewhat flat, and the lower convex: their colour is deep green and glaucous. Flowers few, commonly solitary, middle-sized: petals in a single row, commonly entire, but sometimes slightly cut at the end, of a fine purple inclining to a vivid violet and shining: they are nearly of the same size, except a few in the middle, which are much narrower and paler. The flowers open, when the sun shines from seven or eight in the morning till noon, but shut soon after noon although the sun shine. They open several days successively, and have a scarcely perceptible Hawthorn smell [h].

Mr. Haworth remarks, that the leaves are very remote, in comparison with the other varieties, nearly cylindrical, with a just perceptible attenuation towards the points, and very slightly plane above near the base; they are also smaller than the next variety, and beautifully studded with largish regular tubercles or polished papulæ, which are roundish-ovate, smooth, and when closely examined, bear no small resemblance to fine shagreen. Peduncles an inch or more in length, entirely destitute of hairs, thickening near the calyx, covered with minute shining papulæ. Calyx smooth and papulose; two of the segments much longer and stouter than the rest, leafy, the third segment larger than the remaining two, but much less than the former; the two remaining segments are much shorter and less, with membranaceous edges, but rarely any radiating hairs or spinules. Petals fine bright purple within, paler without, not very numerous; inner ones paler and extremely narrow. Filaments white, stout, shortish, some, though rarely, with white papulose ascending hairs at the base. Anthers largish, yellow, oblong, furrowed. Styles five, greenish, broad at the base, but sharply awl-shaped and short. Capsule five-angled, small, five-celled, not fleshy.

β. The plant is sessile or stemless the first and second year, but afterwards acquires a low stem and reclining branches, dividing into many short branchlets, on which the leaves grow very close: these are swelling on the inner or upper part rising a little, on the lower or outer rounded; they are subhirsute, being very closely set with short hairs disposed in form of a lengthened net, and have whitish spinules at the tip radiating from a yellowish centre; their colour is cinereous glaucous. The flowers come out later, namely in september and october; they are somewhat smaller and pale, purple tending to pale violet and shining; petals narrow, entire, almost all of the same size. Styles eight, very short, greenish yellow. Capsules eight-celled. Calyxes five-cleft, three segments longer, thicker, round, resembling the leaves, two shorter, more slender, concave: the former hairy at the tip, the latter below. Sometimes the calyx is six-cleft. Peduncles an inch long, yellowish green, hairy especially towards the capsules, which abound so in longer hairs as to be lanuginose [i].

Linnæus suspects it to be a mule, and says that it differs in having the calyx six-leaved, with six styles and cells; the peduncles hispid, and the leaves imbricate.

Mr. Haworth is at a loss to conceive how Linnæus could unite this plant with his barbatum; since they agree in nothing but their radiating points and purple flowers; and even in the first circumstance they differ as to number, α having three or five radiating hairs, and β often above a score, at the end of the leaves: α has also cylindric leaves, smooth papulæ, short hirsute branches, smooth peduncles, a five-leaved smooth calyx, five styles, and a five-celled capsule; β has semicylindric leaves, rough bristle-pointed papulæ, trailing elongated smooth branches, hairy peduncles, calyx six or seven-leaved, hirsute, six styles, and a six-celled capsule [k]. There must be a mistake in one circumstance, for β has short hirsute branches, and a smooth elongated one.

γ. This resembles the preceding so much, that the difference is scarcely apparent, unless they are observed very carefully. It might be taken for a younger plant of the other; however the cuttings never protrude such thick and long leaves: the spinules of this are longer, thicker, more rigid, and more hoary, and old

[a] Dillenius. [b] Hort. kew. [c] Linn. [d] Dillenius. [e] Idem. [f] Hort. kew. [g] Linn. [h] Dillenius. [i] Idem. [k] Haworth.

plants grow leſs to ſtalk, and throw out fewer and ſhorter branches. The colour of the leaves is the ſame, unleſs perhaps they may be in this ſomewhat more intenſely glaucous [4].

Mr. Haworth, who erects theſe and other varieties into ſpecies, conceives this to differ from α, in having ſemicylindrical, denſely imbricated, larger leaves, with hiſpid peduncles and calyxes; and from β, in being nearly ſtemleſs, having larger leaves, denſely imbricated, and almoſt ſmoothly papuloſe, covering every part of the ſtem, and ſix-leaved calyxes nearly equal.

Native of the Cape. Cultivated in 1714, by the Dutcheſs of Beaufort. It flowers from june to auguſt [5].

25. Peduncle very rugged downwards rather to the ſight than the touch. Calyx awnleſs. Flower ſweet-ſmelling, very like that of the preceding, from which perhaps it originally ſprung, loſing the beard of the leaves, and having it ſcattered over the ſtem.

α. Stems and branches from a foot to a foot and half and two feet in length, numerous, ſpreading every way, ſlender, the lower joints ſwelling out into knots, an inch or ſomewhat more diſtant. Leaves dark green and generally glaucous, but ſhining with innumerable icy globules cloſely heaped together, and putting out from the axils, one, two, or three ſmaller pairs; they are ſtraight, thickiſh, and being very blunt at the end they frequently hang down by their weight. Stem and branches ſmooth at bottom; but towards the middle and on the upper branches very hairy. Flowers terminating and axillary on longiſh peduncles, rather large, compoſed of looſe entire petals in a ſingle row, of a deep bright purple colour. Capſules ſmall, five-cornered, exhibiting when ripe a pentagon ſtar. Older plants have ſhorter leaves and peduncles. The icy globules are leſs protuberant in this than in γ, and more confluent, ſo that the leaves appear wrinkled with them [1].

It is a low divaricating ſhrub, covered with white ſcattered ſhort hairs, pointing different ways. Confined in a pot, it never takes root at the joints; but in the full ground the branches trail and ſometimes ſtrike root. Leaves of equal thickneſs to the very points, and ſometimes flattiſh above, covered with roughiſh cryſtalline papulæ, and looking like ſhagreen. Flowers opening in a morning, pretty numerous, making a fine appearance. Peduncles ſlender, thickened above, covered with divaricating white hairs, which gradually diſappear near the calyx, by becoming extremely ſhort pileſcent papulæ. Calyx ſmooth, covered with ſpangling papulæ; ſegments nearly equal, blunt, concavo-convex. Petals ſcwer than in ſome ſpecies, linear-lanceolate, entire or with one or two indentures at the points. Filaments purple, of different lengths. Anthers and pollen buff-coloured. Styles ſmall, greeniſh. Capſule deeply five-angled, five-celled [2].

β. This is lower, more branched and leſs upright than the preceding. Leaves paler, with ſmaller icy globules, ſomewhat longer and narrower, not ſtraight but curved inwards, leſs thick at the ends. Stems and peduncles leſs hiſpid. Flowers pale purple, ſomewhat ſmaller, with the petals nearer together; ſtamens ſhorter, not all incumbent on the petals, but many collected into the form of a bottle in the centre. The flowers are numerous, axillary, on one ſide only or on both ſides, on ſhorter and leſs leafy peduncles. By age this plant becomes much branched and twiſted, not exceeding a foot in height.

γ. Flower the ſame ſize as in α, but of a paler colour. Leaves ſhorter and narrower. Stems with ſhorter hairs on them, like β, which it reſembles in the narrowneſs of the leaves, but they are ſhorter and have larger icy globules; the flowers alſo are larger and of a deeper purple. It differs from both in having the calyx and baſe of the fruit very hairy, in having the petals marked along the middle with a ſtreak of a deeper purple, and the ſtamens collected into a ball, and never ſcattered; they are of a pale green with a red circle in the umbilicus [3].

[4] Dillenius. [5] Hort. kew. [1] Dillenius. [2] Haworth. [3] Dillenius.

Mr. Haworth regards this as ſpecifically diſtinct from Linneus's hiſpidum, from which, he ſays, it is very readily to be diſtinguiſhed by the peduncles and calyxes being very denſely covered with woolyiſh hairs, and by the face of the plant itſelf. The uppermoſt parts of the peduncles of α, and every part of the calyx are not only deſtitute of hairs, but adorned with large ſpangling cryſtalline papulæ. The leaves are covered with much rougher papulæ. The ſtems and branches are uſually covered with much longer and much thicker ſet hairs. This is a more robuſt plant, with ſtouter branches, and bolder flowers, with broader denſer petals.

M. ſtriatum opens its gay ſtriated flowers in the forenoon, is very often in bloom, and the flowers being numerous, they make a fine appearance when expanded, but are handſomeſt the firſt time of opening, for they loſe their gayeſt colours long before they fade quite away [1].

Native of the Cape. Cultivated in 1705, by Charles Du Bois, Eſq. It flowers the greater part of the year [2].

26. Leaves ſhear, ſemicylindric, channelled-flat, opaque, with villoſe hairs ſcattered over them, eſpecially at the baſe. Stem pubeſcent, with villoſe hairs ſcarcely ſtanding out [3].

Plant hairy, proſtrate, finally ſhrubby. Branches in diſtant pairs, croſſing each other, axillary, cylindrical, covered with the permanent, cylindrical, hairy ſheaths of the connate leaves; whoſe hairs are not very thick ſet, but ſhort, white, and rather preſſed to the ſtem; ſome of them expanding, but pointed upwards. Leaves leſs ſucculent than thoſe of any other ſpecies, connate but appearing diſtinct, unleſs attentively examined; they are linear, ſcarcely pimpled, or if ſo, the pimples are extremely minute, ſhining in the ſun, and of a dark green colour; they are channelled above, with a convex or rounded keel, ſlightly attenuated both ways, rather dilating again at the very baſe, and embracing the ſtem, where they are quite deſtitute of ſucculency, and ſlightly membranaceous at the edges, with a white midrib: the membrane at the baſe is ciliate; the reſt of the leaf nearly ſmooth, or having diſtant ſmall white hairs ſcattered over both ſides. Flowers ſolitary, terminating, rarely ſeen, opening to a very warm ſun only, in the forenoon [4].

Native of the Cape. Cultivated in 1759, by Mr. Miller [5].

27. Height from a foot and half to two feet. Stem not very ſhrubby, nor very thick. Branches woody, the thickneſs of a ſtraw, procumbent, round, covered with an aſh-coloured bark; the upper ſhoots of a yellowiſh bay colour, becoming pale herbaceous; they are broadiſh immediately under the flowers, thence gradually more ſlender, ſlightly compreſſed, and winged on each ſide with a proceſs from the back of the leaves. Leaves difform; thoſe which are faſtened to the peduncles (bractes) ſhort and thick, the others longer and not ſo thick, with other ſmaller leaves from the axils; all uncinate, ſubglaucous, rugged with frequent tubercles of the ſame colour, which held up to the light appear to be ſo many porous dots. Flowers on peduncles from an inch to two inches in length, alternately axillary, ſmall, pale purple, petals twiſted about, narrower towards the baſe, broader towards the end, entire, in a ſingle row, ſmelling like thoſe of Hawthorn, open both day and night, for a long time and in great abundance, there being a ſucceſſion of them from july to october [1].

Mr. Haworth thus deſcribes the two bractes. They inveſt the peduncles juſt beneath the calyx, which they partly embrace; they are broad, ovate, ſharply keeled, dotted, membranaceous towards the edges, and terminating in a ſmall recurved point, ſimilar to the little cartilaginous hooks which terminate the leaves on the branches. Calyx five-cornered upwards, taking its angles from the keels of the ſegments, which are dotted, nearly equal, or two plane and ſomewhat leſs than the other three, which are rather longer and membranaceous

[1] Haworth. [2] Hort. kew. [3] Linn. [4] Haworth. [5] Hort. kew. [1] Dillenius.

towards the edges; all the ſegments are much broader at the baſe, or ſubulate keeled, or triquetrous, reſembling the leaves, and ending in ſimilar recurved cartilaginous points. Petals numerous, the outer ones very long and narrow, unequal, bright purple; the next row much ſhorter and narrower, unequal, purple above, whitiſh-yellow at the baſe; the third or innermoſt very ſhort, unequal, ſtill narrower, converging, all yellow, reſembling filaments in ſtructure, ſhining in the microſcope with beautiful ſpangling cryſtalline mamme papillæ, tapering to a very ſlender hair-like point, and quite covering the real filaments from the ſight. Theſe are very few, ſhort, and ſlender or almoſt capillary, with very ſmall, whitiſh buff anthers. Germ ſmall, ſmooth. Styles very ſhort, green. Capſule five-angled [a].

Native of the Cape. Cultivated in 1732, at Eltham, by James Sherard, M. D. [b]

28. Stems woody, at bottom bay, the branches yellowiſh brown, procumbent, round at bottom, but ſomewhat angular above, the peduncles however are round. Leaves acutely triquetrous, glaucous, ſomewhat ſhorter and thicker, rougher and more rigid, with frequent tubercles larger and whiter, eſpecially on the back, than in emarginatum. Flowers ſolitary, few (two or three), violet purple and ſhining, but becoming paler, opening two or three times, before and after noon. Petals moſtly of the ſame ſize, entire or ſlightly cloven at the end, firmly connected at the baſe, they end ſuddenly in filaments, which are not ſcattered, but collected into a head about the ſtamens, like a crown. Capſules thicker, rounder, and leſs angular than in emarginatum [c].

Mr. Haworth deſcribes it as a ſhrubby upright plant, with the branches crowded, oppoſite and alternate, covered with a dark-coloured bark. Leaves more crowded, much greener, and covered, eſpecially on the keel-angles, with rougher, more projecting and more cryſtalline papillæ than thoſe of emarginatum. Peduncles ſmooth below, roughening upwards towards the calyx, with two leafy bractes about the middle. Calycine ſegments equal, three of them edged with dark-coloured membranes. Petals paliſh purple, numerous, linear, with from one to five irregular minute teeth. Filaments buff-coloured and ſhort, with large buff-coloured anthers, and pale pollen. Germ ſix or ſeven-angled, ſmooth. Styles ſix or ſeven. Capſule ſix or ſeven-celled.

Native of the Cape. Cultivated in the Eltham garden in 1732 [d].

29. Leaves between papuloſe and tubercled; much rougher, more glaucous, and more acutely pointed, than in any other reptant ſpecies. The branches are angular, and finally ſomewhat woody. In its triquetrous leaves and reptant ſtems it is allied to auſtrale and craſſifolium. In the open air, it will extend the branches above a foot and half every way, and they will be fixed firmly to the ground at every joint by ſtrong fibres [e].

Native of the Cape, where it was found by Maſſon. Introduced in 1774. It flowers in july and auguſt [f].

30. Shrubby but procumbent; even when tied up, its irregular twiſted branches will hang down; they are round towards the top and of a yellowiſh bay colour, but quadrangular at bottom. Leaves ſmaller, mucronate, curved inwards, in bundles, acutely triangular, deep green and glaucous, having ſmall dots and tubercles. Flowers ſeveral, terminating, middle-ſized, with ſcarcely any odour, on ſlender oblong peduncles. Calycine ſegments ſometimes hooked, ſometimes not. Petals very many, lying one over the other; the outer larger, bifid or trifid at the end; the inner ones gradually ſmaller, entire, but not filamentoſe: they are of a moſt vivid violet purple colour, but the flowers expand only about noon, when the ſun is very hot. Stamens not numerous, ſhort, neither very much ſcattered, nor collected, but ſpreading. The flowers continue long, and open ſeveral times if the ſun ſhines hot [g].

[a] Haworth. [b] Hort. kew. [c] Dillenius. [d] Hort. kew. [e] Haworth. [f] Hort. kew. [g] Dillenius.

It differs from ſcabrum, which it otherwiſe reſembles, in the frequency and twiſting of the branches, in having narrower leaves, leſs rough, of a deeper green, the flowers ſmaller, compoſed of more numerous petals of a deeper ſhining colour; but the chief difference is in the ſtamens, which in that are collected in a head, which is not the caſe in this [a].

Native of the Cape. Cultivated in the Eltham garden in 1732. It flowers from june to auguſt [b].

31. α. Stems ſlender, round; branches more frequent than in variety β, more reclining, with much ſmaller and more recurved leaves, having only one ſhort ſpinule at the back; they end in a ſpinule as that does, but it is ſhorter and whitiſh, whereas in β it is purpliſh. Stems and branches, though rigid, yet are procumbent. The leaves, and internodes, which are elongations of the leaves inveſting the ſtems, are dotted with ſmaller dots than in β; they are both of a fuller glaucous green colour, and not ſo white; the bark alſo of the ſtem is not ſo white, but rather of a yellow and brown duſky whitiſh colour. The internodes are thickened above, and narrower beneath. Flowers axillary on leafy peduncles, ſmaller than thoſe of β. Calycine ſegments equal, glaucous.

β. Stems ſlender, not much bigger than a ſtraw, ſomewhat woody, rigid, round at bottom, covered with a thin white cuticle, higher up compreſſed, below upright and not much branched, but where there are more branches and leaves, they hang down. A palm or a foot from the bottom the ſtem and branches become glaucous and have herbaceous internodes, compreſſed and thicker above, covered with a thick fleſhy bark. Leaves perforated, three-ſided, with unequal angles, the back being more produced and ſharp, the upper part narrower and ſlightly elevated, the lateral angles blunter than the lower. There are prickles at the end and on the back of the leaf: in young plants only one on the back, in older ones two or three, of a duſky purple colour. Leaves and internodes permanently glaucous, and dotted with green dots. Calycine ſegments two larger, ſpiny; three ſmaller, not ſo. Petals pale purple, narrow, the inner ones gradually ſmaller and filamentoſe. Capſules terminated by five ſharp purple tubercles. The flowers expand only in hot ſeaſons [c].

Mr. Haworth is convinced that this is diſtinct from α; the leaves and branches being not only larger and almoſt white, but the former having uſually three ſometimes four teeth or ſpines under their points, when full grown: whereas the leaves and branches of α are not much above half the ſize, nearly of a green colour, with never more than two teeth or ſpines below the points. Flowers purple, of a good ſize, but not ſhowy, axillary and ſeſſile from the uppermoſt leaves, and opening in a morning.

Native of the Cape. Cultivated in 1714, by the Dutcheſs of Beaufort. It flowers from june to auguſt [d].

32. This is an upright thorny ſhrub, from two to three feet high, much branched. Branches oppoſite, axillary, aſcending, roundiſh-compreſſed, with a ſmooth cinereous bark, throwing out in various places branching ſpines. Leaves in pairs, at an interval of an inch or an inch and half, glaucous, with frequent green dots, pellucid when held up to the light; all the angles blunt, ſlightly ſwelled at the inner baſes, very firm to the touch, terminating in a very ſmall white cartilaginous point or harmleſs brittle. The upper leaves are much ſhorter. Spines appear as if terminating, but ſoon ceaſe to be ſo, from the protruſion of young ſhoots; they are branched, nearly horizontal, divaricating and trichotomous, each from half an inch to an inch in length, awl-ſhaped, very ſharp, reſembling thoſe of our common Hawthorn, but not ſo ſtrong or pungent, covered with a grayiſh bark, and beſet with a pair of diſtinct, oppoſite, chiefly barren leaves, like thoſe of the branches, but only a third of the ſize. Flowers ſmall, pale violet purple, on ſlender, leafleſs, green peduncles: petals blunt, equal in ſize. Calycine ſegments equal [e].

[a] Haworth. [b] Hort. kew. [c] Dillenius. [d] Hort. kew. [e] Haworth. Dillenius.

Native of the Cape. Cultivated in 1714 by the Dutchefs of Beaufort[a]. The long winter of 1729 deſtroyed it in the Eltham garden. It flowers late, at the end of auguſt and in ſeptember[b]; or, according to the Kew catalogue, from june to auguſt.

33. This forms a low, much branched, ſpreading ſhrub; and when old, has a very large tuberous root, ſometimes as big as a man's head, partly protruded above the ſurface[c]. Stem woody, very thick at bottom, covered with a bay-coloured bark. Branches bending and twined. Leaves ſtuart, bluntly triquetrous, with the back convex, the inner or upper ſurface ſomewhat ſwelling, ſubglaucous, with ſilver dots, ſo ſmall as not to be viſible except when the ſun ſhines. Flowers at the ends of the branches, on ſlender, cinereous or reddiſh peduncles; they are ſmall, of a pale red or vinous colour; petals not numerous, broadiſh, blunt, equal in ſize. Stamens collected into a bottle in the middle. Calycine ſegments ſhort, equal. Capſules roundiſh, remarkably ſmall when ripe. It flowers about noon[d].

Native of the Cape. Cultivated in 1714, by the Dutcheſs of Beaufort. It flowers from june to ſeptember[e].

In old plants the extreme branches ſometimes become thorny; theſe thorns are the peduncles of the preceding year. Thorns alſo come out from the forkings of the branches ſometimes inſtead of flowers[f].

34. Stems woody, procumbent, ſlender, round, with a yelloviſh bark. Branches from each of the upper axils. Leaves on the inner ſurface flat, on the outer convex, bright green inclining to gray, from their ſlenderneſs often hanging down, appearing dotted when held up to the light. Flowers at the ends of the branches, ſolitary, on long ſlender peduncles; they are large, eſpecially on young plants, pale ſcarlet, ſhining and appearing powdered with gold duſt in full ſunſhine: petals very numerous, the inner ones gradually ſmaller, entire or cuſpidate at the end, ſometimes ſlightly bifid, cohering at bottom. Flowers abundant, and opening ſeveral days ſucceſſively about noon, eſpecially in june. Stamens very numerous, ſanguinole at the baſe. Style villoſe. Capſule large, fleſhy, from round bluntly five-angled[g].

Mr. Haworth remarks, that in many ſtages of its growth this is very liable to be taken for bicolorum and his ſpiniforme; and that this frequently emits roots from the joints of its ſtems, and thereby becomes creeping.

Native of the Cape. Cultivated in the botanic garden at Chelſea in 1700. It flowers from june to ſeptember[h].

35. Plant upright, woody, firm, growing to a larger ſize than moſt of the ſpecies. The flowering ſtem is rigid and ſomewhat gray. Branches axillary, oppoſite, from erect ſpreading, croſſing each other in pairs, and beſet thickly with young leaves on their firſt outſet, whiniſh or glaucous but finally browniſh, gradually ſhorter upwards, forming a beautiful pyramidal glaucous plant, well covered with fine leaves. Theſe, when full grown, are from two to three inches long, ſlightly curved upwards or falcate, very glaucous, croſſing each other in pairs, very much compreſſed at the ſides, having pellucid dots ſcattered over them, ſtuartiſh above, mucronate. Flowers terminating in a ſort of corymb, large, ſhowy, purple[i].

Native of the Cape. Cultivated in the Eltham garden in 1723.

36. Native of the Cape, where it was found by Maſſon. Introduced in 1774. It flowers from july to ſeptember[k].

37. This is a ſmall very low ſpreading or trailing ſhrub. Branches crowded, oppoſite or alternate, axillary, at firſt aſcending, but finally deflected. Leaves oppoſite, diſtinct, awl-ſhaped, of different lengths, dotted, ſcarcely to be called ſmooth, but not ſo rough as thoſe of emarginatum. Flowers paler, on long, compreſſed, ſmooth peduncles. Calycine ſegments nearly equal, three with membranaceous edges. Petals numerous, pale purple, very narrow. Germ ſmooth, green, ſhining, truncate at top with a hollow or navel. Filaments numerous, converging into a conical or cylindrical figure in the centre, buff-coloured and ſlender. Styles ſtout, awl-ſhaped, long, ſpreading, rough above. Capſule five-angled, five-celled. Flowers from july to october[l].

Native of the Cape, where it was found by Maſſon. Introduced in 1774[m].

38. Native of New Zealand, where it was found by Sir Joſeph Banks. Introduced in 1773. It flowers in july and auguſt[n].

39. Stems a palm or long ſpan in length, creeping, when young herbaceous and ſoft, three-ſided, green, frequently purple next the ſun; when old, more round, ſtill not woody but ſoft, tough and fungoſe, covered with a cinereous bark. Leaves uſually in the ſame plane, or not deciuſtate, divaricating, or not approximating like many of the other ſpecies, thick, ſucculent, bluntly three-ſided, ſmooth and ſomewhat ſhining, green. Flowers on ſhort peduncles, ſometimes naked, but more frequently with a pair of leaves on them; they are ſolitary, ſmall, violet purple; petals not very numerous. Stamens many ſhort, not very much ſcattered, but not collected into a head or upright. Anthers pale yellow. Calycine ſegments two longer. Capſules ſmall, terminated by blunt angles at top. This plant creeps ſo much that it ſeldom flowers, and when it does the flowers do not continue long[o].

Mr. Haworth remarks, that the leaves, which are far from ſucculent or thick, when compared with many others, are generally more triquetrous than ſemicylindrical; that it is a handſome plant, thickly furniſhed with leaves; and that the branches, which ſometimes hang full a yard from the pot, are naturally proſtrate and reptant, angular and ſlender.

Native of the Cape. Cultivated in 1727, by Richard Bradley, the firſt profeſſor of Botany at Cambridge[p].

40. This is a very low, buſhy, divaricating almoſt decumbent ſhrub, rarely more than ſix or eight inches high. Branches oppoſite, ſlightly angular, axillary, divaricating and denſely crowded. Leaves very minute and much crowded, glaucous, having ſmooth pellucid dots, attenuated at the baſe, very gibbous on the keel, ſharply incurved or falcate, near a quarter of an inch long, and ending in an acute white juſt perceptible briſtly point, in the direction of the leaves. Flowers purple, large, ſolitary, opening in the morning, on ſhort terminating peduncles. Calycine ſegments nearly equal, two leafy and three membranaceous at the edge, all acute. Petals linear, numerous, emarginate. Filaments numerous, ſlender, pale purple, converging. Styles yellowiſh-green, awl-ſhaped, long. The leaves ſometimes are ſo much incurved as to form half a circle, and they are remarkably ſmall[q].

Dillenius compares this with the next ſpecies, and remarks that it is much ſmaller in all its parts, with ſhort woody ſtems, which produce many ſhort bending branches, much interwoven in old plants. Leaves very ſhort, narrow, ſmooth, glaucous with a purple tip, appearing dotted when held up to the light: in young plants they are longer and not ſo much crowded. It flowers abundantly during great part of the ſummer, and the ſame flowers open ſeveral times. They are ſmaller than thoſe of the next ſpecies, of a deeper purple colour, and ſmell like bruiſed Peach kernels. Capſule much ſmaller, brown purple.

Native of the Cape. Cultivated in 1727, as appears from Bradley.

This ſpecies is omitted in Syſtema Vegetabilium, and the trivial name of *falcatum* is put to the ſpecific difference of M. acinaciforme[r].

41. This is a ſmall, very buſhy, rather glaucous ſhrub, from ſix inches to a foot or more in height. Branches almoſt upright or often diffuſe and panicled, round whilſt young, ſlightly angular when old, covered with a brown bark, for the moſt part oppoſite and crowded. Leaves alſo oppoſite and crowded, rather glaucous, having pellucid ſpots, uſually diſtinct but

[a] Hort. kew. [b] Dillenius. [c] Haworth. [d] Dillenius. [e] Hort. kew. [f] Dillenius. [g] Idem. [h] Hort. kew. [i] Linn. Haworth. [k] Hort. kew. [l] Haworth. [m] Hort. kew. [n] Idem. [o] Dillenius. [p] Hort. kew. [q] Haworth. [r] Hort. kew.

ſometimes

ſometimes confluent; they are ſubtrigonous with blunt angles, awl-ſhaped, attenuated at the baſe, ſlightly incurved, ſometimes almoſt ſabre-ſhaped, from three quarters of an inch to an inch and half in length. Flowers very numerous, reddiſh purple, like thoſe of M. deltoides, but more handſome, expanding in the fore part of the day in ſuch profuſion as often to cover the ſurface of the plant. Peduncles ſolitary, longiſh, thickening upwards, forming a kind of divaricating panicle. Calycine ſegments nearly equal; ſometimes two leſs, and membranaceous all round, with ſharp leafy points beneath the membranes. Petals linear, numerous.

It is a very variable little plant, but not in the leaſt liable to be taken for any other ſpecies; it aſſumes different appearances, according to its treatment, and the different ſtages of growth. The very numerous beautiful purple flowers, covering the whole plant, and produced every ſeaſon, make this a valuable ſpecies'.

Native of the Cape. Cultivated in 1732 by James Sherard, M. D. It flowers from june to auguſt'.

42. This is a ſlender branched woody ſhrub, two feet high or more. Branches divaricating, cylindric, when young greeniſh and covered with cryſtalline papulæ; when old ſmooth, wiry and ſlender, covered with a browniſh bark. Leaves in old plants very ſhort and numerous, diſtinct; whilſt young ſlightly incurved, when old ſpreading and pointing four ways; in all ſtates ſhining with very minute papulæ. Flowers ſolitary, bright reddiſh purple, reſembling thoſe of the preceding, terminating the little ſhort lateral branches, and opening in the forenoon. Peduncles ſhort, cylindric, covered with ſmall ſpangling papulæ. Filaments very numerous, purple, ſpreading and of different lengths. Anthers and pollen buff-coloured. Styles large, ſulphur-coloured. Capſule ſwelling above the entire part of the calyx, where it is deeply five-angled, each angle with a grooved line down the back, marking the points in which it is to open when ripe.

This ſpecies puts on very different appearances, according to its age and the treatment it receives. In the full ground, under a ſouth wall, in a poor ſoil, the leaves will be above an inch in length and nearly ſemicylindric, and the young ſhoots will be covered with pileſcent papulæ, pointing downwards, and appearing in a microſcope like minute hooks of glaſs or ice. Whereas the leaves in the ſtove, when not luxuriant, are ſeldom a quarter of an inch in length, and the papulæ are not pileſcent*.

Native of the Cape, where it was found by Maſſon. Introduced in 1774. It flowers in july and auguſt'.

43. The texture and form of the leaves is almoſt the ſame as in M. corniculatum, and they come out in bundles at intervals in the ſame manner; they are not however ſo bluntly triquetrous, that they have not the two very long leaves, and that they are rounder, ſmoother, more frequent, longer and more ſlender, tougher and more pliant.

It had not produced flowers in the Eltham garden, although it had been cultivated there many years before 1732'. They come out from the lower axils of the leaves on the branches, on ſhort peduncles; the calyx is equal and middle-ſized; the corolla purple with lanceolate-linear petals; the ſtamens are whitiſh*.

44. Plant trailing on the ground, diffuſe, and extending from half a yard to a yard in length, the lower part aſh-coloured and round, the upper purple, ſlightly compreſſed, and having, as it were, two angles, whence the leaves ſpring. Branches ſcarcely to be called ſix-angled, being chiefly ſemicylindric or triangular, often purpliſh and crowded. Leaves an inch and half long, appearing dotted when held up to the light, ſcarcely connate; the angles edged with a faint perceptible cartilaginous margin, which is rough to the touch, and finely ſerrulate when nearly viewed, and on the keel-angle largeſt and coarſeſt; the lower ones are longer and ſtraighter, the upper ones and thoſe that come out from the joints are ſhorter and incurved, the younger and middle leaves are ſickled inwardly, the outer and older ones are ſickled outwardly. Flowers terminating the ſmaller branches, ſolitary, not ſmall, purple, pretty but not ſhowy, on pedunckes two inches long, with a pair of leaves on each; the inner petals gradually ſmaller, and the innermoſt filamentoſe. Calycine ſegments unequal, two longer and three ſhorter, membranaceous'.

45. Branches three quarters of a yard or a yard in length, at firſt aſcending, but afterwards incapable of ſupporting themſelves in an erect poſture, they become deflexed or incumbent. Leaves ſhaped ſomewhat like a ſabre or cimeter, ſlightly bent in, the inner part next the branch flat or ſlightly hollowed in the middle, the outer compreſſed and produced into a ſharp back, the outer edge, eſpecially in the upper part, ſlightly crenated; they are glaucous-green, except at the end, where they are uſually purple, ſmooth but not ſhining, and not porous. Flowers large, three inches in diameter, handſome, of a very vivid ſhining purple colour, paler towards the middle, compoſed of numerous petals, almoſt equal, in three or four rows. Anthers oblong, whitiſh. Style multifid, dividing into twelve ſhort, thickiſh, cirrhoſe, greeniſh parts. Calycine leaflets thick, three-ſided, of which three are membranaceous. Capſule twelve-celled, large, fleſhy, turbinate, cornered and as it were winged with two lines on each ſide that ſtand out a little.

This ſpecies very ſeldom produces flowers, it flowered however in the Eltham garden in the year 1732, at the end of april*. It had been cultivated earlier, named in 1714, by the Dutcheſs of Beaufort'; but whether it flowered in the garden at Badminton we are not told. According to the Kew catalogue it flowers in auguſt and ſeptember.

46. This is a decumbent plant, whilſt young almoſt herbaceous, becoming ſhrubby by age. Branches weak, procumbent, ſhort, often pendulous, ancipital, moſtly in pairs from the axils of the leaves; which have ſhort harmleſs ſpines at the point, like herbaceous ſerratures; ſometimes a few very ſhort harmleſs ſpinules appear towards the points both on the lateral and keel angles, thoſe on the keel ſlightly recurved and weaker than the others. Flowers as large as thoſe of *bellidiflorum*, and much like them, but of a ſomewhat deeper ground colour, with a higher-coloured line of purple up the middle of the petals, and not ſo pale on the outſides, opening in the forenoon. Pedunckes angular, terminating, long, one to three from the ſame origin; when only one, inveſted with a pair of bracteal leaves juſt below the middle, like the leaves of the branches: lateral pedunckes much leſs and ſhorter than the central one, each ſupporting one flower, and often furniſhed with a pair of bractes. Calycine ſegments equal, three with ſlight membranaceous edges. Petals numerous, in one row, equal, broad-linear, with from one to three notches at the point. Filaments numerous, converging or arched over the ſtyles and germ, purple. Anthers ſmall, paler. Styles very ſhort, ſpreading, or rather five ſtigmas with roughened feathery purpliſh points. Capſule hemiſpheric, five-angled, five-celled; cells ſmall and dry. Seeds few in the green capſule, white, oval-kidney-ſhaped.

Native of the Cape. Flowering in ſeptember and october, but rarely producing flowers'.—Cultivated in 1758, by Mr. Miller*.

47. This is a ſhrubby plant, not erect. Branches oppoſite and alternate, axillary, rather crowded, generally aſcending, but ſometimes almoſt decumbent; whilſt young, ſtout, greeniſh or purpliſh green and angular; when old, long, brown, woody, ſtrong and cylindrical. Leaves of different lengths, according to their own ages and that of the plant, from two to five inches long, and not a quarter of an inch broad. The young leaves uſually aſcending, incurved, very glaucous, with pellucid, very numerous, well-defined punctures; the old ones expanding or recurved, glaucous and dotted; all oppoſite, connate, and ſwelled juſt below the baſe where they unite, and awl-ſhaped above, ſlightly compreſſed, with the angles very entire;

* Haworth. † Hort. kew. ‡ Haworth. § Hort. kew. ‖ Dillen. elth. ¶ Linn.

* Dillenius, Haworth. † Dillenius. ‡ Hort. kew. § Haworth. ‖ Hort. kew.

the keel-angle ſometimes ſlightly cartilaginous in the young leaves. Flowers ſolitary, very large and ſpecious, bright purple, making a fine contraſt with the very glaucous leaves and deep brown branches [f].

Mr. Curtis remarks, that the leaves ſometimes throw out internally a tooth near their extremities, and that it has been introduced within theſe few years, moſt probably from the Cape, by Mr. Maſſon.

48. Leaves the thickneſs of a finger, ſhining, long, with a cartilaginous rugged keel [g]. They are curved in or ſickled, but ſo as the curvature verges to the inner flat ſide, not the outer acute one; they are ſometimes of a darker, ſometimes of a paler green, frequently purple at the end. Flowers three inches in diameter, yellow, ſhining in the ſun. Calycine ſegments four, two longer, two ſhorter, ſometimes membranaceous at the edge, and hooked at the back, with frequently a fifth leaf, thicker and longer than the others, and more like the ſtem leaves. Petals very many, the inner ones ſmaller, entire, more or leſs cuſped. Stamens very numerous, ſaffron-coloured, with yellow anthers. The ſtyle divides into eight, ten or eleven curled parts. Capſule eight-celled, or ſometimes ten or eleven-celled. It is called *Hottentot's Figs*, being eaten by the Hottentots, and alſo by Dutch inhabitants of the Cape.

It rarely produces flowers, except from old plants. They appear in july [h].

Native of the Cape. Introduced in 1690, by Mr. Bentick [i].

49. This grows up into a long ſlender and not much branched ſhrub, from a foot to two feet high and more. Leaves ſlender, oblong, bluntly three-ſided, green not glaucous, rugged to the ſight, not the touch, with frequent green tubercles, which when held to the light appear whitiſh and pellucid. Similar tubercles are obſerved in the lower part of the fruit. Flowers terminating, middle-ſized, golden within, red on the outſide. Petals very many, narrow, entire, cuſped, nearly of the ſame ſize, the ends being tinged with a ſlight redneſs appear ſaffron-coloured. Stamens very many, at firſt leſs ſcattered, but when the petals are fully expanded, they are ſpread out upon them: the anthers are tinged with the ſame colour as the petals. Style divided into five ſhort villoſe ſegments [k].

Mr. Haworth makes two ſpecies of this, which he calls *bicolorum* and *coccineum*. He remarks that the firſt is at once known by its yellow flowers, and the ſecond by its deep orange-coloured ones. When paſt bloom, the unfertile bracteal leaves inveſting the pedunclies of coccineum, point it out from bicolorum, which has at that time conſiderable ſhoots in the axils of its uppermoſt leaves. Bicolorum has alſo a paler bark, longer and more rugged leaves, and the ſhoots are more robuſt. Coccineum has handſomer flowers, which in old plants are very numerous.

Native of the Cape. Cultivated in 1696, in the royal garden at Hampton Court. It flowers from may to ſeptember [l].

50. This is a ſhrubby plant, ſcarcely capable of ſupporting itſelf upright when tall. Branches woody, dark brown, ſlender, long, not crowded; the young ones ſomewhat compreſſed and greener. Leaves ſlightly glaucous, ſmooth, erect, between ſubtriquetrous and ſemicylindric, with acute points, which often aſſume a purpliſh tinge. Flowers large and ſpecious, of a very deep orange colour, opening very early in the morning if the ſun ſhines, remaining open only a ſhort time: quickly folding if the ſun diſappears, or if the plant be removed into the open air. Peduncles terminating and axillary, round, thickening upwards, but ſometimes not quite ſo thick cloſe to the calyx as a little below it. Calyx large; ſegments acute, nearly equal, more or leſs membranaceous and dotted. Petals numerous, long, linear but broadiſh, ſharpiſh, deep orange on the inſide, paler without, making a fine appearance when expanded. Filaments deep yellow, juſt ſhorter than the calyx. Germ ſmooth. Styles five-angled, or rather one ſtyle deeply divided into five ſegments or ſtigmas, which are black purple, ſpreading, fixed as it were to the ſtyle by an extremely ſhort ſlender thread, ſwelling out in the middle, and tapering obliquely towards the points, or rather gibbous awl-ſhaped, with a roughened ſurface. Capſule urn-ſhaped, ſlightly hollowed at the top, five angled, five-celled. Seeds rather few. It varies with paler flowers [m].

This is one of the taller and more upright ſpecies, as well as the earlieſt in point of flowering, producing its bloſſoms from february to may [n]: according to the Kew catalogue, from june to auguſt. Mr. Miller cultivated it in 1750 [o], but it does not appear in his Dictionary.

51. This is an elegant ſpecies, three quarters of a yard in height, with woody ſtems, not ſo thick as the little finger, and not much branched, procumbent, covered with an aſh-coloured bark. Flowers on the upper branches, ſolitary, terminating, large, of an elegant yellow colour, compoſed of two or three rows of petals, which are blunt, entire or ſometimes jagged, the outer longer and flat, the inner ſuddenly ſhorter, more erect, concave, and at their baſe a circle of ſaffron-coloured anthers on very ſhort filaments; the bottom of the flower being void, ſmooth and even, hollowed out like a diſh. They open ſeveral times from eight in the morning to three or four in the afternoon, if the ſun ſhines; and have a little ſmell.

Calycine ſegments long, mucronate, with a few ſerratures on the back; three longer, two ſhorter, having a pellucid membrane towards the baſe ſpotted with red. The calyx, and leaves about the edges, when held up to the ſun appear to have large white dots. The leaves, except thoſe on the flowering branches, come out ſeveral together, are long and pointed, deeply ſerrate on the back only, ſeldom on the edges; they are of a green glaucous colour. The branches, eſpecially the flowering ones are round only ſlightly compreſſed at the edges, aſh-coloured at bottom, next the flowers pale green, or elegantly purple. Capſules large, flatted at top, purple, five-angled, with a five-cleft ſtar, the reſidue of the ſtyle, in the centre, winged by five lines which deſcend along the peduncles to the very branches: cells five, large, with large roundiſh-flatted ſeeds in them [p].

Native of the Cape. Petiver received it in flower, in june 1706, from the Temple Garden. Dillenius received it from Holland before 1732, and gives a caution conſtantly to raiſe young plants, becauſe the old ones are very apt to periſh. It is probably for want of attending to this caution, that the ſpecies is now ſo rare in this country, if indeed it be in any of our collections.

52. Stems from a foot to two feet in height, procumbent, woody and much branched. Branches round, ſlender. Leaves in pairs, at an inch or an inch and half diſtance, an inch in length, thickiſh, on an old plant narrower and ſhorter, on a young one longer and thicker, not quite round, but obtuſely triangular, with the angles however ſo blunt, that they are rather cylindric than three-ſided: they are overſpread with glittering ſpangles of a greeniſh yellow colour. The ſtems and lower branches are bay-coloured and ſmooth; the upper ones are reddiſh brown, rough to the touch, with many whitiſh dots, which were originally ſpangles: the pedunckes and calyxes ſhine with ſpangles like thoſe of the leaves, but thicker. Flowers terminating, on pedunckes from an inch to an inch and half in length; they are large, concave, with the margin bent back, compoſed of numerous petals cohering at the baſe, gradually ſmaller, and filamentoſe in the middle, of a dirty red colour on the outſide, but within very dark orange-coloured, deepeſt at the edge; the narrow middle petals next the white filaments being very dark, this flower is eaſily diſtinguiſhed from the other ſorts by this circumſtance. Filaments ſhort, neither ſpreading, nor collected into a bottle. Style villoſe. Calycine ſegments often reflex and hooked, and having a thin pellucid membrane about the edge. Capſule

[f] Haworth. [g] Linn. [h] Dillenius. [i] Hort. kew. [k] Dillenius. [l] Hort. kew. [m] Haworth. [n] Curtis. [o] Hort. kew. [p] Dillenius.

small, depressed, with five prominent rays and as many cells [1].

It varies with paler, smaller flowers [2].

Native of the Cape. Cultivated in 1716, by Professor Richard Bradley. It flowers from may to august [3].

53. Native of the Cape, where it was found by Masson, and introduced in 1774. It flowers from august to october [4].

54. This is a branching divaricating shrub [5], found also by Masson at the Cape, and introduced at the same time with the preceding. It flowers in july and august [6].

55. This is a stemless plant, producing offsets, which when the old leaves that enveloped them decay, appear like distinct plants. Leaves connate for half an inch or an inch at the base, spreading, glaucous green, dotted, semicylindric, awl-shaped; or, convex on the outside, flat on the inside, usually but not always triquetrous at the points, generally about two inches and a half or three inches long, but sometimes longer [7].

Dillenius remarks, that this species is distinguished from all others by the central leaves being long and narrow, not ill representing a heron's bill.

Native of the Cape. Cultivated in 1732, by James Sherard, M. D.

56. Native of the Cape, where it was found by Mr. William Paterson. Introduced in 1780 by the Countess of Strathmore. It flowers in november [8].

57. Stem woody, from a foot to two feet in height, covered with an ash-coloured bark, deformed by age with irregular wide fissures, knotted and jointed, divided and subdivided into several opposite branches. Leaves so bluntly triangular as to appear to be round, an inch and half or two inches in length, the size of a swan's quill, with dense bundles of other leaves coming out from the axils, glaucous, smooth, appearing pellucid when held up to the light, purple at the end as are also the branches. Branches and leaves at short intervals, and affecting an upright position this plant has the appearance of a shrub, though probably it would be weighed down by the number and size of the leaves and branches. Flowers in a sort of umbel at the ends of the branches from the axils of the leaves, small, pale yellow. Petals broadish, blunt, entire, equal, spreading out regularly. Capsule turbinate, commonly five-celled but sometimes divided into more parts. Seeds rather large, three-sided, rufous.

It varies with shorter and more manifestly three-sided leaves and fewer flowers [9].

Linnæus remarks, that the flowers smell very sweet, that the corolla is scarcely longer than the calyx, with the petals having one or two teeth at the end, and the stamens small, with the filaments villose at the base.

Native of the Cape. Cultivated in 1732, by James Sherard, M. D. It flowers in may and june [10].

58. This is a shrub variously branched. Branches usually opposite, but sometimes alternate, axillary; at first herbaceous, compressed or ancipital and spreading, afterwards becoming rounded and more horizontal, finally quite round; woody, firm, and covered with a loose brown bark. Leaves almost upright when young, spreading when full grown, and often reflected when old; scarcely connate when young, slightly connate when old; of a very dull glaucous colour, or rather somewhat hoary and soft to the touch, with a thickish skin, very turgid on all sides, but most so above, with very blunt angles, marked by moniliform lines of semitransparent or lucid contiguous punctures; they are blunt with a fine white almost imperceptible point, best observed on the youngest leaves [11].

Native of the Cape, where it was found by Masson. Introduced in 1774 [12].

59. Stems half a yard high and more, woody, with frequent joints, ash-coloured with fissures at bottom, bay-coloured and more smooth above. The lower and middle branches are twisted, the upper ones are straight and little divided. Peduncles an inch and half or two inches long. Flowers large, pale yellow or sulphur-coloured on both sides, sometimes slightly tinged with red on the outside. Petals long, narrow, cuspid, with smaller ones interspersed among the others. They remain expanded only a few hours, and contract about noon: but open several times, and have a succession during the summer months. Style, filaments and anthers of the same colour with the corolla. Capsules small, bluntly turbinate. Seeds small, dusky yellow. Leaves glaucous, roughish and wrinkled, with frequent tubercles, which appear to be pellucid dots when held up to the light [13].

Mr. Haworth remarks, that it is a strong upright shrub, and that the flowers are produced only by old plants, and by them sparingly.

Native of the Cape. Cultivated *1696*, in the royal garden at Hampton Court. It flowers in june and july [14].

60. Dillenius, comparing this with variety β, says that the stems are longer, less pressed to the ground, all the leaves at the joints are very long, more thick and glaucous; the peduncles not naked but surrounded by a pair of short leaves; the flower of a deeper yellow colour, with a red line along the back; in β this inclines more to purple, and shines through the tips of the petals. Stamens numerous, neither collected nor much scattered, yellowish with whitish anthers. Styles very many, (Linnæus says ten) reddish, slender, villose. Capsules round, depressed, fifteen or sixteen-celled, with a crown on the top of the same number of rays. The leaves which spring from the axils of the larger ones are less frequent, and less bent in: but these younger leaves have the angles more acute and are more glaucous than the longer leaves at the joints, which the nearer they are to the root, the paler and more flaccid they seem to be, the rest are more rigid and succulent, not wrinkled and scarcely dotted, but the lower ones have transverse lines on their flat sides, are somewhat wrinkled, and much dotted underneath. The flowers continue some days and expand about noon: they are flat, the size of those of Dandelion: petals cuspid, the inner ones somewhat shorter but fewer. Stems half-erect or reclining, scattered, round at top, striated and somewhat angular at bottom, woody, a palm or a long span in length, not much branched, nor throwing out roots at the joints.

β. This throws out many procumbent branches, tough at the lower part, but not properly woody, herbaceous at the upper part, about three inches in length, round or slightly angular, jointed at short intervals, with bluntly triangular leaves, from which other leaves spring in bundles, of the same form but shorter, the root-leaves and those at the base of the branches are remarkably long. The leaves bend like the horns of kine, whence the trivial name; they are somewhat glaucous, become soft and flaccid, and then appear marked with many lines and dots. Peduncles six inches in length or nearly so and naked. Flowers the size and almost the form of those of Dandelion, but paler or sulphur-coloured, composed of numerous petals of which the inner ones are shorter, with a red purple streak running along the middle on the outside, the same tinge appears at the extremity and base of the petals. Stamens numerous with yellow anthers. Style villose, many-cleft. Capsule compressed, many-celled. The flowers open about noon, but do not appear very often [15].

Native of the Cape. It flowered in the Elham garden in 1726.

61. Root annual, not much branched, of short duration. The whole plant is sprinkled over with glittering particles, like the Ice plant, to which it bears some affinity in its duration [16]. Stems branching, of a bright red colour, trailing. Leaves yellowish green, opposite, attenuated at the base. Flowers small, axillary, solitary, on longish peduncles, yellow. Calycine segments unequal, three being short, two longer and broader. Petals numerous, scarcely equal to the longest

[1] Dillenius. [2] Haworth. [3] Hort. kew. [4] Idem. [5] Haworth. [6] Hort. kew. [7] Haworth. [8] Hort. kew. [9] Dillenius. [10] Hort. kew. [11] Haworth. [12] Hort. kew. [13] Dillenius. [14] Hort. kew. [15] Dillenius. [16] Curtis.

segments of the calyx, linear, expanding in the afternoon. Filaments numerous, yellow. Anthers yellow. Germ roundiſh. Capſule obtuſe-angled, obtruncate. Seeds numerous, ſmall, roundiſh, brown[1].

Introduced from the Cape by Maſſon in 1774. It flowers in july and auguſt[2]. It was cultivated earlier in the botanic garden at Upſal, where it was probably introduced by Thunberg.

62. Native of the Cape, where it was found by Maſſon, and introduced in 1774. It is an annual, and flowers in july[1].

63. Stem ſhort, thickiſh. Branches unequal, ſpreading irregularly on the ground, covered with a ſmooth bark of a duſky yellowiſh colour, with other ſmaller ſimple ones ſpringing from them, which are alſo irregular and twiſted. Leaves pointed, ſlightly excavated within in the middle, the outer part produced and ſwelling, of a yellowiſh green colour, with frequent minute dots regularly in lines. Compared with M. expanſum, the flowers are ſomewhat ſmaller and whiter, petals narrower, peduncles ſhorter, ſo that the flowers frequently ſcarce emerge from the bundles of leaves. They are filamentoſe, and where they are white, ſhine with a ſilvery brightneſs in the ſun; but in the middle, next the ſtamens, they are ſlightly tinged with yellow and ſhine leſs. They are without ſcent, open two or three times, and in the day time only. Two of the calycine leaflets are larger, three ſmaller, and of theſe one is very ſmall. Capſule oblong-rounded, contracted into a neck about the calyx, with minute ſilvery tubercles on the ſurface, ſhining in the ſun; within four-celled[2].

Linnæus remarks, that three leaflets of the calyx are ſpreading, and two horned; that the corolla is ſhorter than the calyx; and that it has four ſtyles.

Mr. Haworth obſerves, that the young leaves, when juſt beginning to ſeparate, have a very ſtriking reſemblance to the beak of a bird.

Native of the Cape. Cultivated in 1705, by Dr. Uvedale. It flowers from june to october[3].

64. Found by Maſſon at the Cape, and introduced in 1787. It is an annual and flowers in july. Theſe annuals are very ſubject to be loſt in our gardens.

65. This is another annual, introduced by Maſſon from the Cape, in 1774. It flowers in july and auguſt[2].

66. Root annual. Stem herbaceous, a ſpan high, ſcarcely thicker than a gooſe quill, almoſt upright, round, rough with cluſtered reflex or ſpreading white hairs. Branches oppoſite, almoſt upright, higher than the ſtem, dichotomous. Leaves oppoſite, horizontal, embracing, quite entire, blunt, very ſmooth, ciliate eſpecially at the baſe, where they are alſo channelled. Peduncles from the forks, ſolitary, round, upright, rough with very ſpreading hairs, the length of the leaves, one-flowered. Flowers upright, the ſize of the common Marygold. Calyx very large, rough with white hairs; ſegments ſpreading, unequal: two longer than the corolla, lanceolate, flat, hairy within at the baſe; three the length of the corolla, ſubcylindric, membranaceous within towards the baſe. Corolla ſulphur-coloured, ſtarting, ſpreading very much. Petals very numerous, in ſeveral rows, the inner ones gradually ſmaller, linear-ſubulate, the inmoſt briſtle-ſhaped, curved inwards, covering the ſtamens, from which indeed they differ only in being deſtitute of anthers. Filaments yellow, in a cylinder, covering the piſtils. Anthers nodding, oblong, yellow. Germ depreſſed, ſmooth, with from twelve to fifteen ſtreaks. Styles twelve to fifteen, upright, ſpreading at top. Capſule orbicular, flatiſh, many-celled. Seeds ſemi-orbicular, compreſſed, black, ſmooth, ſmall.—It is diſtinguiſhed by the number of piſtils and cells[3].

Native of the Cape. Introduced in 1774, by Mr. Francis Maſſon. It flowers in july and auguſt[2].

67. a. Mr. Haworth remarks, that the calycine leaves are proportionally larger than thoſe of the white-flowered one. The juicy leaves, and more particularly the flowers, when bruiſed, ſtain paper a ſtrong yellow colour.

β. This is a diffuſe, ſhrubby plant. Branches cylindrical, axillary, long, at firſt upright, afterwards declining and very diffuſe, ſometimes covered thinly with briſtly hairs, for the moſt part only with numerous roughiſh papulæ, which are greeniſh on the young ſhoots, and white on the old ones. Leaves very groſs, diſtinct, ſpreading, convex beneath, concave above, echinate or furniſhed on every part with ſtraight ſtrong white hairs or briſtles, which ariſe from large papuloſe dots, are nearly upright, and ſometimes hooked. The young leaves, when the plant is drawn up in a ſtove, ſometimes become entirely ſmooth, and ſmaller than uſual, but even in this ſtate the roughened or warted branchlets diſtinguiſh it from M. barbatum. Peduncles axillary, ſhort, one or more from the ſame place, ſometimes hiſpid, ſometimes not. Calycine ſegments unequal, three long and reſembling the leaves on the branches, two very ſhort with membranaceous edges, all more or leſs echinate with ſhort white briſtly hairs. Flowers pretty numerous, ſmall, opening in the fore part of the day, white. Petals linear, obtuſe, entire, very little longer than the leaves of the calyx. Filaments numerous, ſlender, often echinate with ſhort hairs, attached to the petals below, and converging above. Anthers very minute, yellow, ovate, with a groove on one ſide, fixed to the filaments by their ſides, but towards the top: pollen deep yellow. Germ nearly hemiſpherical, or approaching to conical, with a hollow or navel at top, ſmooth, ſhining, with five ſmoothiſh angles. Styles yellow, ſpreading, united below, and occupying the navel on the crown of the germ. Capſule five-angled, five-celled[4].

Native of the Cape, where it was found by Maſſon. Introduced in 1774. It flowers from july to october[3].

68. a. Dog-chap Fig Marigold is ſtemleſs whilſt young, but requires by age conſiderable traiſing woody ſtems. Leaves connate, ſpreading, glaucous, opaque not marked with lucid dots, ſomewhat ſabre-ſhaped, or attenuate from the middle downwards to the baſe, where they are ſemicylindric; thickening towards the points, where they are triquetrous, with a ſharp keel, and ſides edged with irregular harmleſs teeth; terminating in a ſimilar tooth, placed on the inner ſide. Flowers large, ſhowy, yellow, opening in the afternoon, and cloſing in the evening. Peduncles often furniſhed with connate bractes, long, terminating, uſually three, the middlemoſt often longeſt, cylindrical upwards, often nearly ancipital and thickened. The two outer calycine ſegments are rather longer than the three inner, which are blunter and membranaceous. Petals bright ſhining yellow within, often tinged with purple on the outſide, numerous, linear, not very blunt, entire. Filaments numerous, whitiſh yellow. Anthers deep yellow. Styles ſtraight, as long as or longer than the ſtamens, greeniſh yellow[1].

β. Cat-chap Fig-Marigold is entirely ſeſſile, of a whitiſh glaucous colour, with the leaves paler at the baſe, with frequent round whitiſh dots, eſpecially towards the end; they are ſhorter than thoſe of the preceding, more reſupine, leſs triquetrous, but with a rounder back, and more frequent, longer, incurved prickles, terminated by ſlender harmleſs ſpinules, which are ſometimes white, ſometimes reddiſh; the leaves have a white line at the end, which is continued towards the back. There is firſt a flower in the middle, and afterwards ſeveral come out ſucceſſively at the ſides, all ſeſſile. Calyx five-angled; ſegments two broader and three narrower. Corolla golden-coloured within, not having any tinge of red, yellow with a tinge of red on the outſide; petals in three or four rows, entire, cuſped; the inner ones ſomewhat ſmaller. Stamens numerous, more ſcattered than in the preceding. Capſule round, ſeſſile, with a browniſh circle at top, in the centre of which are veſtiges of the ſtyles, and in the circuit three green riſings[4].

[1] Haworth. [2] Hort. kew. [3] Idem.
[4] Diſſenius. [5] Hort. kew. [6] Idem.
[7] Linn. ſpec. [8] Hort. kew.

[1] Haworth. [2] Hort. kew. [3] Haworth.
[4] Diſſenius.

According

According to Mr. Haworth, the plant is leſs and ſofter to the touch than the preceding variety, and is completely ſtemleſs in all ſtages of its growth. Leaves ſhorter, dotted, much ſofter to the touch, and of a laxer ſtructure, rounded or blunt on the keel, and not acutely triquetrous upwards, as in caninum; edged above with long harmleſs ſpinuloſe hairs or teeth, not with ſhort fleſhy denticulations, as in caninum.

Mr. Haworth adds two other varieties, and he regards them all as ſpecies.

γ. M. tigrinum. Tiger-chap Fig-Marigold, is ſtemleſs in all its ſtages of growth; it is more ſucculent and groſs than ſeſinum. Leaves rather ſhorter, beſet with much longer hairs on the ſides, and having numerous whitiſh ſpots. Flowers ſeſſile, yellow, large.

δ. M. murinum or Mouſe-chap Fig-Marigold. In this the branches in very old plants are ſome inches long and numerous, forming a fine tufted plant. Leaves connate, when young reſembling the gaping jaws of a ſmall quadruped, the denticulations on each ſide reſembling teeth; when old, the leaves ſpread out and are even recurved; all are very glaucous, only about a fourth part of the ſize of the others, and often roughly dotted: dots lucid, elevated into ſmall tubercles. Flowers ſmall and yellow[a].

Natives of the Cape. Dog-chap Fig-Marigold was cultivated in 1717, and Cat-chap about the ſame time. They flower from may to july.

69. At firſt this is a low plant, but it becomes larger and ſtronger, it does not however riſe above a long ſpan in height in ſix years: the ſtem is then thick and woody, and ſeveral reclining twiſted branches ſpring from it alternately, covered with a duſky reddiſh bark, ſmooth but tranſverſely chinked and irregular; at the end of which come out ſeveral leaves diſpoſed croſswiſe; they are thickiſh, bluntly flat at top, with a roundiſh back below, more compreſſed towards the end, and terminating in a proceſs at the lower part; their colour is deep glaucous green, except the old ones, which are yellowiſh and when dry brown: the whole covered with frequent green dots, pellucid when held up to the light, protuberant towards the end of the leaves and rendering them ſomewhat rugged there. Peduncles an inch and half or two inches long, bracted. Flowers opening in the afternoon, (about four o'clock) like M. ringens caninum, and like that coming out frequently ſeveral from the ſame peduncle, but they are much ſmaller and of a paler yellow colour. Petals many, narrow, cuſped, the outer more ſpreading, the inner more upright, at firſt forming a concave flower, but afterwards more flat and ſcattered, pale red on the outſide. Stamens upright, with thickiſh, cylindric anthers. Calycine ſegments equal, at firſt upright, but afterwards bent down, and then becoming upright again. The flowers keep open a great part, if not the whole of the night. Capſules ſmall round-five-angled, each angle roundiſh, with a ſtreak along the middle, five-celled. Seeds ſmall, like ſand[a].

Native of the Cape. Cultivated in 1714 by the Dutcheſs of Beaufort. It flowers from may to july[a].

70. This is a middle ſort between the caulescent and ſeſſile ones, properly belonging to thoſe which are procumbent, and acquiring by age woody branches, ſhort and preſſed to the ground, from which, at ſhort diſtances, and on ſhort ſlender woody petioles, of a duſky pale brown colour, ſpring thick leaves in cluſters, bright green and ſhining, triquetrous inclining to round, wider towards the baſe and ſomewhat flatted on the upper part, the lower part rounded, towards the middle where the flat part ends, ſome ſhort proceſſes come out on both ſides, ſometimes on one ſide only, and ſometimes they are wholly wanting; hence towards the point the leaves take a different form, and have the ſides from round flatted; they are not however broad and flat, but triquetrous-cylindric. It is a circumſtance peculiar to theſe leaves, that one ſide of each is much ſhorter than the other, and hence they are called diſform: they have frequent largiſh dots on them, which appear pale and pellucid, but ſometimes duſky green; they are generally protuberant and thereby render the ſurface irregular. Peduncles thick, herbaceous, bluntly triquetrous from half an inch to an inch and half in length. Flowers rather large, like thoſe of the tongue-leaved ſort, but ſomewhat ſmaller, and of a deeper yellow, internally they are of a ſhining golden colour, externally of a reddiſh ſaffron colour, and when far advanced they are ſaffron-coloured within. Petals oblong, blunt, entire, not ſo numerous as in ſome ſorts, in a ſingle or double row. Stamens very many, pale yellow. Styles many (eight or thereabouts) ſhort, cirrhoſe, greeniſh yellow. Capſule eight-celled. Seeds triquetrous, brown and wrinkled.

Native of the Cape. Cultivated in the Eltham garden ſeveral years before 1732, loſt by the ſeverity of a winter, and recovered there from the botanic garden at Chelſea[a].

71. Lower leaves oblique, the others more upright, not at all or but little bent in or ſickle-ſhaped; they are long, thick, rigid, ſmooth and ſhining, flat within or on the top, underneath produced into a ſharpiſh back, which becomes blunter and rounder in the lower part; all the ſides are nearly equal: they are of a white elegantly glaucous colour, except that they are yellowiſh near the baſe with ſlender tranſverſe lines. Flowers large, yellow, on a long thick peduncle. It flowered many years before 1732, and frequently in the Chelſea garden during winter[a]. According to the Kew catalogue it was cultivated in 1714, by the Dutcheſs of Beaufort.

72. The leaves of this ſpecies in all the varieties are not decuſſated, but lie in the ſame oblique plane. α. The leaves of this are wider and more compreſſed about the edge; the flowers ſomewhat larger, with blunter petals, more ſcattered and leſs numerous, with ſcarcely any peduncle. One plant has ſeveral heads, from each of which are produced cluſters of leaves in pairs, diſpoſed like thoſe of the tongue Aloes, but with the edges not horizontal but oblique. There are generally three or four pairs of theſe leaves; they are broad and thick, flat above, pillowed below, bright green, ſmooth and ſhining, ſometimes blunt, ſometimes a little pointed, generally in the ſhape of a ſhoemaker's knife. The younger leaves in this and the other varieties are folded together and obliquely inſerted into each other. The flowers come out ſucceſſively in auguſt and ſeptember from the axils, beginning with the loweſt, they are ſubſeſſile, large, yellow, ſomewhat paler than in the next variety, ſhining in the ſun; petals ſomewhat blunter, entire or ſometimes cut here and there. Stamens numerous, with oblong yellow anthers. Style divided into nine or eleven villoſe ſtigmas. Capſule roundiſh, divided into as many cells, with a crown at top of nine or eleven rays. Seeds like ſand, from round pointed. Calyx of four unequal ſegments, two longer and two ſhorter.

β. Broad Tongue-leaved Fig Marigold, has thick leaves, flat above, convex beneath, with the margins thicker and leſs upright than in the preceding, ſmooth and ſhining, pale green eſpecially towards the baſe, when held up to the light appearing to be compoſed of innumerable veſicles. Three or four pairs of theſe leaves lie in the ſame inclined plane; theſe are ſometimes flatter and blunt at the end, ſometimes very much cut at the edge. From the lower pair firſt, and then from the next, a ſhort peduncle ariſes, obtuſely triquetrous, bearing a large flower of a ſhining golden colour, with many ſtamens, having oblong golden anthers. Style divided into nine or ten cirrhoſe parts. Calycine ſegments four, ſometimes five. Capſules roundiſh, divided into nine or ten cells, continuing the whole winter, and ripening in the ſpring; they are obtuſely pyramidal and brownish. Seeds very many, like ſand, rufous, pointed, bluntly triquetrous.

γ. Narrow Tongue-leaved Fig Marigold is very like the preceding, but the petals have a ſlight tinge of red on the outſide, the older leaves are more reflex, the younger ones, which are cloſer and more luxuriant, are ſomewhat twiſted in and excavated, and are of a fuller green colour. The fruit is ſmaller and ſofter.

[a] Haworth. [a] Dillenius. [a] Hort. kew. [a] Dillenius. [a] Idem.

not elevated but rather depreſſed, roundiſh, and commonly ſtreaked with eleven angles; it is generally eleven-celled; the cells being the ſame in number as there are horns of the ſtyle, which are depreſſed at the bottom of the flower under the ſtamens, and are curled and wrinkled. Petals in two or three rows, almoſt of the ſame length, of a ſhining yellow colour. Stamens numerous, ſlender. Calycine ſegments uſually four. Peduncle an inch long, ſomewhat longer, than in the preceding, flat on one ſide, raiſed into an angle on the other, triquetrous-compreſſed, pale green. It flowers in auguſt and ſeptember.

β. This is diſtinguiſhed from the others by the leaves being longer and more erect. The peduncles of the flowers are longer. Capſules leſs globular, commonly divided into nine cells. Calycine ſegments four, three longer and narrower, one ſhorter and broader with a membranaceous margin. The flowers have a double or triple row of petals, ſhining in the ſun with the ſplendour of gold. Stamens numerous with oblong ſaffron-coloured anthers [c].

Native of the Cape. Cultivated in 1714, by the Dutcheſs of Beaufort [d].

73. This ſpecies grows up into a ſtem an inch and more in thickneſs, and two or three feet in height, ſtanding upright with little or no aſſiſtance, with a crown of cluſtered leaves a long ſpan in length at the top, and branches a foot long and more at the baſe, which hang down with the weight of a multitude of leaves. Very old plants grow a yard in height, with long incurved twiſted branches. The ſtems and lower branches are of a duſky yelloviſh colour, but the upper flowering branches are green; on the lower part of theſe the leaves are alternate, but on the upper part, where the flowers come out, they are cluſtered and ſomewhat ſhorter, in pairs at ſhort intervals, triquetrous, with equal angles, ſlightly grooved on the ſides, eſpecially on the inner ſide; but the alternate ones have the inner ſide rather flat. They are not dotted, but are of a deep green, almoſt glaucous, like the leaves of Pinks, at the angles towards the baſe tinged ſlightly with purple. Peduncles from the axils of the upper leaves a ſpan in length, thick, at firſt hanging down, but afterwards erect. Flowers large, expanding when the ſun ſhines, ſtraw-coloured above, tinged with red underneath, compoſed of numerous ſlender cuſped petals, gradually ſmaller and the inner ones filamentoſe. Style divided into ten parts, concealed at firſt by the ſtamens, which on the ſecond or third expanſion of the flowers, recede from each other and leave the ſtyles naked. Capſule obtuſely conical, the ſize of a nutmeg, marked with fifteen lines, ten-celled. Seeds ſmall, roundiſh, pointed, rufous: when ripe, the upper fungoſe part opens into a toothed crown, the rays or toothlets and holes of which are the ſame in number as the lines on the fruit: but before the fruit is reſolved into this toothletted crown, the lines become as many furrows as there are cells. Calyx entire at the baſe, divided above into five oblong ſegments, broad at the baſe, triquetrous-cylindric; at bottom a rib runs from each of the wider ſegments along the peduncle, which has a pair of leaves near the baſe. The flowers are open from eight or nine in the morning to four or five in the afternoon [e].

Native of the Cape. Cultivated in 1714, by the Dutcheſs of Beaufort. It flowers from may to auguſt [f].

74. Plant ſomewhat below, covered with a grayiſh bark. Branches moſtly oppoſite, axillary, decumbent; whilſt young ſmooth and papuloſe below, covered higher up with pileſcent papulæ, and at the uppermoſt parts with ſhort numerous horizontal hairs. Leaves dark green, connate, ſheathing, very blunt, channelled above, rounded beneath; lower ones erect, incurved, imbricate, croſſing each other in pairs, ſhining, ſmooth, papuloſe, reſembling the links of a chain; upper ones ſpreading more and more diſtant, pointing obliquely upwards, ciliate at the baſe with pileſcent papulæ; uppermoſt often alternate, covered with the ſame papulæ. Flowers terminating, from one to five, when three or four forming a ſmall dichotomous panicle; when five forming a kind of ſpike, curving ſharply upwards; they are the ſize of a ſhilling, quite green, and open in the forenoon. Peduncles cylindrical, covered with numerous ſhort horizontal hairs. Calyx ovate, obſcurely pentangular, ſegments unequal, two longer, the three ſhorter membranaceous on the edges. Petals very numerous, ſlender as briſtles, acute, innermoſt ſhorteſt, often converging ſo as to conceal the ſtamens. Filaments numerous, very ſhort, of different lengths, whitiſh green. Anthers large, white, nearly ſquare, emarginate at both ends, with a deep furrow on each ſide, giving them a twin appearance: pollen whitiſh. Styles ſhortiſh, green, awl-ſhaped. Capſule turn-ſhaped, pentangular. Seeds not very numerous, ſmall, kidney-ſhaped [g].

Native of the Cape, where it was found by Maſſon. Introduced in 1774. It flowers in july and auguſt [h].

75. Native of the Cape of Good Hope, where it was found by Thunberg [i].

There are doubtleſs many other ſpecies, but not being ſufficiently determined, or diſtinguiſhed from varieties, I have confined myſelf chiefly to thoſe which are aſcertained by Dillenius, Linnæus, and Aiton.

There are ſeveral circumſtances which may aſſiſt us in diſtinguiſhing the numerous ſpecies of this genus. Thus ſome are annual, though the far greater part of them be perennial. Some are ſtemleſs, as *ringens*, *bellidiflorum*, *linguiforme*, *albidum*, *roſtratum*, *calamiforme*, *difforme*, *dolabriforme*. Some are lax with a pendulous ſtem or branches, as *Tripolium*, *tortuoſum*, *expanſum*, *loreum*, *cornuculatum*, *acinaciforme*, *edule*, *forficatum*, *flamentoſum*, *craſſifolium*, *tenuifolium*, *pomeridianum*. The reſt are ſhrubby, with a woody hard ſtem. The greater part has oppoſite leaves, but ſome have them alternate, as *nodiflorum*, *cryſtallinum*, *Tripolium*, *purpuriformes*. Moſt of them have five ſtyles, but ſome have four, others ten [k], and the number varies in ſeveral of the ſpecies. Spinoſum (n. 32.) has trichotomous thorns; and tuberoſum (n. 33.) has a tuberous root.

This beautiful genus was firſt named *Ficoides* by Hermann, from the ſimilitude of the fruit in ſhape to the Indian Fig. Breynius, ſoon after named it *Meſembrianthemum* or Noon-flower, becauſe moſt of the flowers open about noon when the ſun ſhines. Dillenius changed Breynius's name to *Meſembryanthemum*, ſignifying a plant which has the embryo in the middle of the flower. Linnæus has followed Dillenius in this, although the change, in my opinion, is by no means a happy one. Dillenius however has treated this genus in his maſterly ſtyle, and Linnæus has added little or nothing to what he had done.

Dillenius diſtinguiſhes the ſpecies from the leaves, and has given a ſynoptical table of thoſe which he cultivated in Dr. Sherard's garden at Eltham. He remarks, that the corolla grows above or rather round the fruit, and may be extracted entire in ſome of the ſpecies; but in the greater part, eſpecially thoſe which have filamentoſe flowers, it adheres ſo firmly to the top of the fruit and the middle of the ſtyle, that it cannot be extracted entire: that the petals, or ſegments of the corolla are either leſs numerous and all nearly of the ſame ſize and form, or more numerous and of different ſizes, the interior ones being narrow like the filaments. The fruit is at firſt green, thick and ſucculent, but when ripe contracts, and becomes a fungous dry browniſh ſubſtance, of a turbinate, globular or oblate ſpheroidal form, ſometimes with a ſmooth and regular ſurface, ſometimes more or leſs angular. The number of cells within correſpond with the number of ſtyles, but not with the leaflets of the calyx, except in the four and five-celled ſpecies. In thoſe which are many-celled, the number of ſegments in the calyx is ſeldom more than five; and in M. linguiforme, which has more cells than five, the calyx has only four ſegments.

[a] Dillenius. [b] Hort. kew. [c] Dillenius. [d] Hort. kew. [e] Haworth. [f] Hort. kew. [g] Linn. ſuppl. [h] Hort. kew. [i] Linn. ſpec. [k] Hermann.

Hermann, in his different works, has enumerated twenty-three ſpecies, two of which do not ſeem to belong to this genus. Breynius has ſeventeen ſpecies. Plukenet has forty-four. Bobart has fifteen. J. G. Volckamer has twenty-four. Ray has thirty-nine, but ſome of the ſpecies are repeated under different names. Tournefort has thirty-ſix, in the Paris Memoirs. Bradley figured thirty ſpecies. Boerhaave enumerated fifty-three, but his two laſt do not appertain to this genus. Dillenius has deſcribed and figured fifty-ſeven, ſome of which however are varieties. Miller, in the laſt folio and quarto editions of his Dictionary has enumerated forty-ſix: but he has not deſcribed any of them. Aiton's Catalogue of the Royal Garden at Kew contains ſeventy, and this work ſeventy-five ſpecies. Mr. Haworth has many more, ſome of which however are ſtill regarded by botaniſts as varieties only, though they are ſold by nurſery-men as diſtinct ſpecies.

PROPAGATION AND CULTURE.

This fine genus was unknown to the ancients, indeed very few of the ſpecies were cultivated till the end of the laſt and the beginning of the preſent century. M. edule was introduced in 1690, by Mr. Bentick from Holland, and in 1696 ſeveral of the ſpecies were cultivated in the royal garden at Hampton Court. Some were in the botanic garden of the Apothecaries at Cheliea in 1700. Dr. Uvedale and Charles Dubois, Eſq. had ſome ſpecies in 1705. The Dutcheſs of Beaufort had many in 1714. Profeſſor Bradley cultivated a good collection between 1716 and 1727. About the ſame time the Sherardian garden at Eltham boaſted a very fine aſſemblage of theſe ſingularly beautiful plants: and as many were cultivated by Mr. Miller at Chelſea. M. auſtrale was introduced from New Zealand, in 1773, by Sir Joſeph Banks. M. compactum, by the Counteſs of Strathmore 1780, and many ſpecies by Mr. Francis Maſſon in 1774, 1775 and 1787. The collections of theſe plants at Kew, Mr. Lee's nurſery at Hammerſmith, and ſeveral others of the nurſeries about London are very ſplendid.

The Ice plant (M. cryſtallinum) and other annual ſorts are propagated by ſeeds, ſown on a hot-bed early in the ſpring. When the plants come up, plant them on a freſh hot-bed to bring them forward. After they have taken root in the hot-bed they ſhould have very little water. When they are large enough to tranſplant again, plant each in a ſmall pot filled with light freſh earth, but not rich, and plunge them into a hot-bed of tan, ſhading them in the heat of the day until they have taken new root, and then giving them plenty of freſh air. At the end of june ſome of the plants may be inured to the open air, and afterwards may be turned out of the pots and planted in a warm border, where they will thrive and ſpread, but will not be very productive of flowers; ſome therefore muſt be continued in the pots, and removed to the ſhelves of the ſtove, that they may flower plentifully and produce good ſeeds.

The perennial ſorts are eaſily propagated by cuttings during any of the ſummer months; ſuch of them as have ſhrubby ſtalks and branches, very readily take root when planted in a bed of light ſoil, and covered either with mats or glaſſes; but when they are covered with the latter, they muſt be ſhaded every day when the ſun is warm; theſe cuttings of the ſhrubby ſorts need not be cut from the plant more than five or ſix days before they are planted, during which time they ſhould be laid in a dry room, not too much expoſed to the ſun, that the part which was ſeparated from the old plants may heal over and dry before they are planted, otherwiſe they are apt to rot; theſe may be planted at about three inches diſtance from each other, and the earth preſſed cloſe to them, but none of their leaves ſhould be buried in the ground, for as they abound with moiſture, if they are covered with the earth, it will cauſe them to rot, and that often deſtroys the cuttings; therefore when the cuttings are taken from the old plants, they ſhould be diveſted of their lower leaves, ſo far as may be neceſſary, to allow a naked ſtalk of ſufficient length for planting.

When the cuttings are planted, it will be neceſſary to give them a little water, to ſettle the ground about them, but it ſhould be done with caution, for too much wet will ſpoil them; if theſe are ſhaded every day from nine or ten o'clock till three or four, when the ſun is warm, it will prevent the ground from drying too faſt, ſo that the cutting need not be watered oftener than once in a week; but if there ſhould happen ſome gentle ſhowers of rain, it will be proper to take off their covers, and let them receive it, but they ſhould be ſereened from hard rains. The cuttings thus managed will have put out good roots in about ſix weeks, when they ſhould be carefully taken up, and each planted in a ſeparate ſmall pot filled with light ſandy earth, and then placed in a ſhady ſituation, giving them a little water to ſettle the earth to their roots; in this place they may remain about ten days or a fortnight, by which time they will have taken good root, and may be removed to a ſheltered place, where they may have more ſun, in which they may remain till autumn; during the ſummer months, theſe may be watered twice, or in very hot weather, three times a week, but it muſt not be given them in too great plenty; but as the ſun declines in autumn, they ſhould not have it oftener than once a week, for if they are often ſupplied with it, the plants will grow luxuriant; their leaves and branches will be ſo replete with moiſture, that the early froſts in the autumn will deſtroy them; whereas when they are kept dry, their growth will be ſtinted; ſo that they will be hardy enough to reſiſt ſmall froſts, but there muſt be care taken that they do not ſhoot their roots through the holes of the pots into the ground, for when they do, the plants will grow very luxuriant; and when the pots are removed, and thoſe roots are torn off, their leaves and branches will ſhrink, and will not recover in a long time, if ever; to prevent which, the pots ſhould be removed every fortnight, and where the roots are beginning to come through the pots, they ſhould be cut off. The ſorts which grow very freely ſhould be ſhifted three times in the ſummer, to pare off their roots, and keep them within compaſs, and theſe ſhould never be planted in rich earth for the reaſons before given; for if the earth be freſh, it will require no dung or other compoſt, unleſs it is ſtrong, in which caſe ſea ſand, or lime rubbiſh, will be a good mixture; the quantity of either muſt be in proportion to the ſtiffneſs of the ground, always being careful to render it ſo light, as that the wet may eaſily paſs off.

We next proceed to treat of thoſe ſorts, whoſe ſtalks and leaves are very ſucculent. The cuttings of theſe ſhould be taken from the plants ten days or a fortnight before they are planted, that they may have time for their wounded part to heal over and dry; the lower leaves of theſe ſhould alſo be ſtripped off, that their naked ſtalks may be of a ſufficient length for planting. As theſe are moſtly plants of humble growth, ſo if their ſtalks are diveſted of their leaves an inch and a half, it will be ſufficient. The cuttings of theſe ſorts require to be covered with glaſſes, to keep off the wet; they muſt alſo have leſs water than the other, but in other particulars require the ſame treatment. The roots of theſe not ſpreading and extending ſo much as thoſe of the other, will not require to be ſhifted oftener than twice a year at moſt; they muſt alſo be kept in ſmall pots to confine their roots; the earth in which they are planted ſhould be rather light and not rich. During the ſummer ſeaſon they muſt not have too much wet, and in the winter they muſt have but little water. If theſe ſucculent ſorts are placed in an open airy glaſs-caſe in winter, where they may have free air admitted to them in plenty in mild weather, and are ſcreened from the froſt, they will thrive much better than when they are more tenderly treated.

The other ſhrubby ſorts may be ſheltered in winter under a common frame, where, if they are protected from froſt and wet, it is all they require; for the hardier theſe are treated, the greater quantity of flowers they will produce: and ſome of the ſorts are ſo hardy, as to live abroad when planted cloſe to a good aſpected wall, and in a poor dry ſoil; ſo that where there is room to diſpoſe them again a wall, and the

border

border is raiſed with lime rubbiſh to prevent their rooting deep and growing luxuriant, they may be preſerved through the winter with very little ſhelter, and theſe will flower much better than thoſe under cover.

[The hardieſt ſorts are *biſpidum*, *ſtriatum*, *barbatum*, *craſſifolium*, *glaucum*, *uncinatum*, *corniculatum*. Theſe will ſometimes abide ſeveral winters, on a dry artificial rock, or upon the top, or at the foot of a dry wall.

Theſe plants thrive beſt in winter in a dry light airy ſtove or large glaſs caſe, not overſtocked with plants, eſpecially ſuch as cauſe watery vapours by caſting their leaves. The flues ſhould be gently worked in cold and damp weather, and the plants ſhould not be placed too near each other, ſhould have as much free air as poſſible when the weather is dry and favourable, and ſhould be watered only ſparingly in cold weather. Thoſe ſorts which hold water in the centre, ſhould not be watered over their tops in winter.

From about may to ſeptember all the ſorts thrive beſt in the open air, in a ſheltered warm ſunny ſituation, no more watered than juſt to preſerve their leaves from ſhrivelling. But if the ſeaſon be wet, it may be better to leave them in the houſe, which during this ſeaſon will be thin of plants and have the lights generally open.

The generality of ſpecies are beſt planted in ſmall pots, not larger than thirty-twos. They ſhould be filled with a light ſandy unmanured ſoil, that will not bind. The ſmalleſt ſorts thrive ſtill better in ſixtys.

All the perennial and ſhrubby ſorts may be increaſed very readily in a ſtove, either from ſeed or cuttings, not covered by bell-glaſſes. Sow the ſeed, as ſoon as procured, unleſs it be in the depth of winter, in a poor light ſandy ſoil, kept damp but not wet: its germination will be much aſſiſted by the bark-bed.

They all remain a long time in the ſeed leaf. When the young plants appear, they ſhould have rather more water and air, until they have four or five leaves, when they may be tranſplanted into the ſmalleſt pots, kept in the ſame gentle hot-bed until they have got freſh roots, when they ſhould be gradually hardened to the open air, if it be ſummer, or placed near the old plants in the dry ſtove, if it be winter. When they have filled the ſmall pots with their roots, they ſhould be removed into larger ones.

When raiſed from cuttings, the ſhoots need not be large, and the youngeſt are the beſt; they ſhould be divеſted of a few of the old leaves, and if very ſucculent, laid in a dry ſhady place, from one to twenty-four hours, to heal their wounds, after which plant them in the ſoil mentioned above, with the earth preſſed cloſe, water them very ſparingly, and ſhade them from the ſun until they have ſtruck root, but without covering them by a hand-glaſs. Their ſtriking will be greatly accelerated by plunging them into a gentle hot-bed; but moſt of the ſorts will ſucceed very well without that aſſiſtance, if kept in the houſe; and many will do well during the ſummer even in open borders, provided they are gently watered when dry.

May is the moſt favourable ſeaſon for ſtriking them; but they may be ſtruck at almoſt all times of the year in a very moderate ſtove. Some ſtrike in ten days, ſome take a fortnight, and others require a month or ſix weeks.

8. Strikes readily from young ſhoots, but with difficulty from old ones. It is apt to loſe its leaves, and then looks like a different plant.

20. M. cordifolium planted in a ſouth border will cover many feet of ground, flower and perfect ſeeds.

29. M. reptans, in the open air will extend its branches above a foot and half every way, putting out roots at every joint.

39. M. craſſifolium. This and many others, particularly the creeping and procumbent ſorts, may be ſtruck from the extreme ſhoots, although they have only two leaves.

42. The old firm ſhoots are ſtruck with difficulty from cuttings, but the young and tender ones moſt readily.

48. M. edule. A ſingle joint will ſtrike very well in any way.

61. M. pinnatifidum, cannot be made to root from cuttings, which however do not die until they have perfected flowers, and even ripened ſeed.

67. The old wiry firm ſhoots ſtrike with difficulty from cuttings, but are ſo tenacious of life as to exiſt a whole year without loſing their leaves. The young ſhoots ſtrike freely.

68 β. M. ringens ſelinum may be ſtruck from a ſingle leaf.

71. M. albidum does not root ſo freely from cuttings as the other ſtemleſs ſpecies, eſpecially from an old plant. The reaſon is, that it is of a very firm texture, and it is a general rule that ſuch ſtrike with difficulty, and thoſe of a more lax ſucculent nature on the contrary ſtrike with facility.

73. M. pugioniforme. Cuttings of this ſtrike with difficulty. It very much diſlikes the knife. Select ſmall ſhoots, ſeparate them with a ſharp knife, bruiſe or handle them as little as poſſible, plant them in a mixture of light earth and pottherds, keep them in a ſtove in the ſhade, and water them ſparingly. It frequently perfects very fine ſeeds, by which it may readily be increaſed[1].

MESOSPHÆRUM. See *Byſtropogon*.]

MESPILUS (*of Pliny*, Μεσπιλον *of Theophraſtus.*)

Lin. gen. n. 625. *Reich. n.* 681. *Schreb. n.* 857. *Tourn. t.* 410. *Juſſ.* 335. *Gærtn. t.* 87.

Claſs 12. 4. Icoſandria Pentagynia.

Nat. order of *Pomaceæ*. *Rafaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, concave-ſpreading, five-cleft, permanent.

COR. *Petals* five, roundiſh, concave, inſerted into the calyx.

STAM. *Filaments* twenty, awl-ſhaped, inſerted into the calyx. *Anthers* ſimple.

PIST. *Germ* inferior. *Styles* five, ſimple, erect. *Stigmas* headed.

PER. *Berry* globular, umbilicated, cloſed by the converging calyx, but almoſt perforated by the navel.

SEEDS five, bony, gibbous.

OBS. *The genera of* Cratægus, Sorbus *and* Meſpilus *are very nearly allied, ſcarcely to be diſtinguiſhed but by the number of ſtyles. The leaves in* Sorbus *are pinnate, in* Cratægus *angular, in* Meſpilus *commonly entire.*

ESSENTIAL CHARACTER.

Cal. five-cleft. *Pet.* five. *Berry* inferior, five-ſeeded.

SPECIES.

1. Meſpilus Pyracantha. *Evergreen Thorn* or *Meſpilus. Lin. ſpec.* 685. *Reich.* 2. 497. *hort. cliff.* 189. *vir. cliff.* 44. *Scop. carn. n.* 596. *Pallas roſſ.* 1. 29. *t.* 13. *f.* 2. *Du Roi harbk.* 1. 413. *Medic. obſ. oecon. Lutr.* 1774. *p.* 227. *Laur. cochinch.* 320. *Villars dauph.* 3. 542.

M. aculeata amygdali folio. *Tournef. inſt.* 642. *Duham. arb.* 2. *t.* 20. *n.* 7. *Barrel. t.* 874.

Oxyacantha Dioſcoridis, ſ. Spina acuta Pyri folio. *Bauh. pin.* 454.

O. Theophraſti. *Ger. emac.* 1604.

Pyracantha. *Park. parad.* 605. *f.* 2. *Bauh. hiſt. Raii hiſt.* 1459.

Uva urſi. *Dalech. hiſt.* 164.

Rhamnus 3 Dioſcoridis. *Lob. ic.* 2. 182.

Thorny, leaves lanceolate-ovate crenate, calyxes of the fruit blunt.

2. Meſpilus germanica. *Dutch Medlar.*

Lin. ſpec. 684. *Reich.* 2. 497. *hort. cliff.* 189. *npl.* 129. *mat. med.* 127. *Gærtn. fruct.* 2. 43. *Hudſ. angl.* 217. *Wither. arr. ed.* 3. 461. *Hall. helv. n.* 1094. *Du Roi harbk.* 1. 409. *Neck. gallob.* 218. *Pallich pal. n.* 474. *Kniph. cent.* 2. *n.* 45. *Ludw. elt. t.* 38. *Pallas roſſ* 1. 29. *t.* 13. *f.* 1. *Villars dauph.* 3. 542. *Krock. ſileſ. n.* 758.

a. Meſpilus. *Dod. pempt.* 801. 1. *Ger.* 1265. 1. *emac.* 1453. 1. *Raii ſyn.* 453. *Blackw.* 154. *Park. parad.* 568. *t.* 569. *f.* 3. [1] Haworth.

M. vulgaris.

M. vulgaris. *Bauh. hiſt.* 1. 69. *Raii hiſt.* 1460.—ſ. minor. *Park. theat.* 1422. 2.

M. germanica fol. laurino non ſerrato, ſ. M. ſylveſtris, *Bauh. pin.* 453.

M. ſylveſtris. *Mill. dict. n.* 1.

M. germ. ſtricta. *Narrow-leaved Dutch Medlar. Ait. hort. kew.* 2. 172. *With leaves doubly ſerrate.*

Neflier des bois. *Duham. arb.* 1. 334. *t.* 2.

β. M. fol. laurino, major. *Bauh. pin.* 453.

M. maxima ſativa. *Park. theat.* 1422. *f.* 1.

M. ſativa altera. *Ger. emac.* 1453. *f.* 2.

M. germanica. *Mill. dict. n.* 2.

M. diffuſa. *Broad-leaved Dutch Medlar. Ait. hort. kew.* 2. 173. *With leaves almoſt entire.*

Neflier cultivé a gros fruit. *Duham. arb.* 1. 3. 4. *Plenck, ic.* 393.

Unarmed, leaves lanceolate tomentoſe underneath, flowers ſeſſile ſolitary.

3. Meſpilus arbutifolia. *Arbutus-leaved Meſpilus. Lin. ſpec.* 685. *Reich.* 2. 498. *hort. cliff.* 189. *Du Roi harbk.* 3. 418. *Mill. fig.* 1. 109. (Cratægus).

Sorbus virginiana folio arbuti. *Herm. lugdb.* 578. *t.* 669.

S. aucuparia virginiana, foliis arbuti. *Breyn. prodr.* 1. 15.

α. M. arbutifolia rubra. *Red-fruited.*

β. M. arbutif. nigra. *Black-fruited.*

γ. M. arbutif. alba. *White-fruited. Ait. hort. kew.* 2. 173.

Unarmed, leaves lanceolate crenate tomentoſe underneath.

4. Meſpilus Amelanchier. *Alpine Meſpilus. Lin. ſpec.* 685. *fyſt.* 466. *Reich.* 2. 498. *hort. cliff.* 189. *Scop. carn. n.* 595. *Pollich pal. n.* 475. *Jacqu. auſtr.* 3. 55. *t.* 300. *Mill. fig.* 1. 178. *f.* 1. *Barrel. ic.* 527. *Villars dauph.* 3. 542.

Pyrus Amelanchier. *Du Roi harbk.* 2. 219. *Hall. helv. n.* 1095.

Sorbus Amelanchier. *Crantz. auſtr.* 90.

Amelanchier Gallorum. *Lob. obſ.* 608. *Barrel. ic.* 527.

Vitis idæa 3. *Cluſ. hiſt.* 1. 75. *Park. theat.* 1458. 7.

Dioſpyros. *Bauh. hiſt. Raii hiſt.* 1461.

Unarmed, leaves oval ſerrate hirſute underneath.

5. Meſpilus Chamæ-Meſpilus. *Baſtard Quince* or *Meſpilus. Lin. ſpec.* 685. *fyſt.* 466. *Reich.* 2. 499. *mant.* 398. *Hall. helv. n.* 1090.

Cratægus. *Lin. hort. cliff.* 497. *vir. cliff.* 43. *Jacqu. vind.* 243. *auſtr.* 3. 1. 231.

Sorbus. *Crantz. auſtr.* 93 *t.* 1. *f.* 3.

Chamæmeſpilus. *Bauh. hiſt. Raii hiſt.* 1460.

Cotoneaſter folio oblongo ſerrato. *Bauh. pin.* 452.

C. forte Geſneri. *Cluſ. hiſt.* 1. 63.

Cotonaſter Geſneri. *Ger. emac. app.* 1606. *f.* 2.

Unarmed, leaves oval acutely ſerrate ſmooth, flowers corymb-capitate.

6. Meſpilus canadenſis. *Swamp Meſpilus. Lin. ſpec.* 685. *fyſt.* 466. *Reich.* 2. 499. *Du Roi harbk.* 1. 416. *Gron. virg.* 54. *Duham. arb.* 9.

Unarmed, leaves ovate-oblong ſmooth ſerrate ſharpiſh.

[7. Meſpilus japonica. *Japan Meſpilus. Lin. fyſt.* 466. *Thunb. jap.* 206.

Unarmed, leaves oblong blunt ſerrate at the tip, tomentoſe underneath.]

8. Meſpilus Cotoneaſter. *Dwarf Meſpilus. Lin. ſpec.* 686. *fyſt.* 466. *Reich.* 2. 500. *hort. cliff.* 189. *fl. fuec. n.* 438. *Fl. dan.* 1. 112. *Hall. helv. n.* 1093. *Pollich pal. n.* 476. *Leers herborn. n.* 375. *Scop. carn. n.* 594. *Crantz. auſtr.* 81. *Pallas roſſ.* 1. 30. *t.* 14. *Krock. ſilef. n.* 759. *Villars dauph.* 3. 542. *Knipb. cent.* 1. *n.* 58.

Cotoneaſter folio rotundo non ſerrato. *Bauh. pin.* 452.

Cotoneaſter. *Bauh. hiſt. Raii hiſt.* 1917.

Cotoneaſter Geſneri. *Park. theat.* 1424. *f.* 3.

Chamæ meſpilus. *Ger. emac.* 1454. *f.* 4.—Geſneri. *Cluſ. hiſt.* 1. 60.—Cordi. *Bauh. pin.* 452.

Epimelis. *Dalech. hiſt.* 198, 199.

Unarmed, leaves ovate quite entire ſharpiſh tomentoſe underneath, germs ſmooth, berries two-ſeeded or three-ſeeded.

9. Meſpilus tomentoſa. *Quince-leaved Meſpilus. Ait. hort. kew.* 2. 174.

M. orientalis. *Mill. dict. n.* 9.

Unarmed, leaves ovate quite entire blunt tomentoſe underneath, germs woolly, berries five-ſeeded.

DESCRIPTIONS, *&c.*

1. This is a buſhy irregular ſhrub. Branches ſtrigoſe and rugged, teſtaceous-brown, divaricated, alternately ſpinoſe. Spines axillary, commonly branched with ſecondary ſpines, ſometimes gemmiferous and producing branchlets. Leaves ſcattered ſmooth, petioled, continuing till winter, lanceolate with a point, crenate; but in the garden ſerrate. Corymbs copious on the branches, compound, ſubſeſſile, or elevated on the leafy branchlets, on divaricating peduncles. Flowers white, ſcarcely larger than thoſe of Elder. Calyx ſpreading very much, acutely five-toothed. Petals oval, concave. Stamens about twenty-four. Germ depreſſed, villoſe. Styles ſhorter than the corolla and ſtamens. Berry globular, fulvous, the ſize of a pea, umbilicated with the calyx; pulpy, five-ſeeded [a]. The fruit, according to Scopoli, is as large as the common Medlar; the ſeeds ſubovate and compreſſed.

Native of the South of Europe, common on Caucaſus, and in the Cherſoneſus Taurica; alſo in China. It flowers with us in may. Cultivated in 1620, as appears from Parkinſon [b].

It has the names Pyracantha in Latin, and Buiſſon ardent in French from the redneſs of its berries.

2. The Medlar is a ſmall or middle-ſized branching tree. Branches woolly, armed in a wild ſtate with ſtiff ſpines, covered with an aſh-coloured bark. Leaves oval-lanceolate, ſerrate towards the point, ſomewhat woolly, on very ſhort channelled petioles. Bracteæ linear, as long as the corolla. Calyxes terminating, fleſhy, woolly within; teeth longer than the corolla. Petals white, blunt, entire, with a very ſhort claw. Stamens unequal, thirty or more, with cloven anthers [c]. Fruit an inferior turbinated berry, umbilicated at top with a wide depreſſed area, and crowned with the five linear calycine leaflets, fleſhy, reddiſh brown: pulp thick mixed with calloſe granules. It contains five gibbous, wrinkled, one-celled ſtones, in each of which are two ſeeds, but one is uſually abortive, the other is obovate, compreſſed like a lens, much pointed downwards, whitiſh with a brown ſpot at the top [d].

α. The wild tree differs from the cultivated one in having more ſlender, ſtrigoſe, thorny branches, and much ſmaller leaves, flowers and fruits. Pallas remarks, that all the parts are very ſmall in his ſpecimens from Perſia, with narrower leaves, ſerrulate frequently almoſt to the bafe. In thoſe from Caucaſus the leaves were ſomewhat larger, and ſometimes quite entire. In the Perſian Medlar, according to Gmelin, the leaves are red when they burſt from the buds. Spines only three or four lines in length, ſtout, very ſharp, ſpreading. Styles four or five. Fruit much ſmaller than in the gardens, containing five ſeeds.

Native of the South of Europe, and in Aſia. Said to grow in all the hedges about Montpellier, but ſcarcely to be reputed indigenous of Britain. It flowers in june and july.]

Mr. Miller makes two ſpecies of the Wild and Dutch Medlar. The firſt, he ſays, grows naturally in Sicily, where it becomes a large tree. It riſes with a ſtraighter ſtem, and the branches grow more upright than thoſe of the Dutch Medlar. The leaves are narrower and not ſerrate. The flowers are ſmaller; and the fruit is ſhaped like a Pear.

β. The Dutch Medlar never riſes with an upright trunk, but ſends out crooked deformed branches at a ſmall height from the ground. The leaves are very large, entire, and downy on their under ſide. The flowers are very large, as is alſo the fruit, which is rounder, and approaches nearer to the ſhape of an Apple. This, bearing the largeſt fruit, is now generally cultivated: but there is one with ſmaller fruit, called the Nottingham Medlar, of a much quicker and more poignant taſte. [There are other varieties of the fruit, which are now little noticed.

[a] Pallas. [b] Hort. kew. [c] Linn. Wilder. Knocker. [d] Gaertner.

3. This ſeldom riſes more than five or ſix feet high in Virginia, where it grows naturally in moiſt woods. Three or four feet is the greateſt height it attains in England. Branches few, ſlender, upright. Leaves alternate, pale green above, aſh-coloured underneath. The flowers are produced in ſmall bunches, on long peduncles, at the ſides and extremities of the branches. Petals dull white, with ſeveral brown ſpots on their upper ſide. Fruit ſmall, roundiſh, a little compreſſed, purple when ripe. It flowers in may, and the fruit ripens in october [a].

Petals and calycine ſegments ſometimes ſix, ſeven or eight [b].

It varies with red, black and white fruit; and was cultivated in 1700 by the Earl of Clarendon [c].]

4. This riſes with many ſlender ſtems three or four feet high, putting out ſmall ſide branches, covered with a dark purple bark. Leaves three quarters of an inch long, and half an inch broad, ſlightly ſerrate. The ſmall ſide branches which ſuſtain the flowers are very hairy and woolly, as are alſo the footſtalks and under ſide of the leaves, but their upper ſides are ſmooth and green. The flowers come out in bunches at the end of the ſhoots. The petals are long and narrow; and the ſtamens about ten in number. Fruit ſmall, black when ripe.

[Linnæus remarks, that whilſt it is young the branches, petioles, peduncles and under ſurface of the leaves are tomentoſe, but that when it is ſo far advanced as to bear fruit, it puts off the pubeſcence and becomes ſmooth. It is very nearly allied to M. canadenſis and Chamæmeſpilus. Pollich obſerves that the berries have eight, nine or ten ſeeds in them. Cluſius remarked ten, and ſometimes more; and Villars has reckoned as far as eleven.

The wood of this ſhrub is very hard, and the bark is black. The flowers are white, larger than in any of the others. The fruit is good to eat [d]; ſweet and reputed wholeſome. It has the name Amelanchier in Provence from *Amelanches*, on account of the berries having the taſte of honey.

Native of the South of Europe. It was cultivated in England in 1730 [e].]

5. This has a ſmooth ſtalk, about four or five feet high, ſending out ſlender branches covered with a purpliſh bark. Leaves about two inches long, and one inch and a half broad, yelloviſh green on both ſides, on long ſlender foot-ſtalks. Flowers axillary, four or five together in a cloſe head, purpliſh; with long, narrow, purpliſh bractes. Fruit, ſmall red.

[This ſhrub, whilſt young, is woolly, like the preceding and following ſpecies, when farther advanced it is naked. According to Crantz, the very young leaves are quite ſmooth, they gradually acquire pubeſcence, and caſt it off as they grow old: they are obovate, like thoſe of the Plum ſharply ſerrate, the ſerratures bent in towards the tip and very ſlender. Stipules linear, longer than the petioles, deciduous. Corymb from the axils pedunculed, conglobated into a head, on a ſubvilloſe peduncle, ſhorter by half than the leaves. Bractes between the flowers, linear, longer than the flower, coloured, deciduous. Teeth of the calyx ſhorter than the tube; whereas in Amelanchier they are longer. Haller, Jacquin and Scopoli affirm that the flowers have only two ſtyles [f].

Native of the Pyrenees, the mountains of Auſtria, &c. Ray found it on the higher parts of Jura, near Geneva. It was cultivated in Britain in 1683, by Mr. James Sutherland [g].]

6. This is a low ſhrub, ſeldom more than five feet high, dividing into ſeveral ſmooth branches, covered with a purpliſh bark. The leaves grow upon long ſlender foot-ſtalks; are an inch and half long, and an inch broad, ſmooth on both ſides, and ſerrate. The flowers come out in ſmall bunches at the ends of the branches; they are about the ſize of thoſe of the common Hawthorn, and are ſucceeded by ſmall fruit of a purpliſh colour.

[Native of Canada and Virginia. Cultivated in 1746, by Archibald Duke of Argyle. It flowers in april and may [h].

7. This is a large lofty tree. Branches thick, knobbed, with ſimilar tomentoſe branchlets. Leaves alternate, ſubpetioled, blunt, attenuated below, entire except towards the tip, where they are ſerrate; erect, recurved at the tip, marked with parallel nerves, the upper ſurface bright green, ſmooth, the under cinereous-tomentoſe, with the middle nerve thick; they are a ſpan long, the younger ones leſs. Petiole thick, tomentoſe. Flowers in ſpikes at the ends of the ſhoots. Spike compound, tomentoſe. Peduncles and pedicels thick, ſhort, tomentoſe, ſcaly. Scales or bractes ovate, blunt, concave, preſſed cloſe, tomentoſe. Calyx bell-ſhaped, thick, tomentoſe; ſegments blunt, erect. Filaments twenty, longer than the calyx. Anthers round. Germ hirſute. Styles the length of the calyx. Berry ovate, the ſize of a Cherry, ſubtomentoſe, yellow, pulpy. Seeds from one to five, ſemiglobular, ſmooth, larger than peas, brown: when there is only a ſingle ſeed it is globular. The fruit ſeems rather to be a pome, with from one to five cells; and the taſte of it approaches to that of the Apple: it is ripe in may and june. It flowers in october and november. Native of Japan [i].

8. This is a low ſpreading ſhrub, nor more than four or five feet high, covered with a ſmooth aſh-coloured or purple bark, when young pubeſcent, but becoming ſmooth with age. Leaves alternate, the upper ſurface bright green and ſmooth, the lower white-tomentoſe, finely netted, they are about an inch long, and three quarters of an inch broad. Petioles two lines in length, channelled above. There are two lanceolate, acuminate, deciduous, reddiſh ſtipules at the baſe of the petioles. Peduncles either ſolitary and unbranched from the tops of the twigs, or forming little corymbs of three or four flowers, which are pedunculed, ſomewhat nodding, round and pubeſcent, with a ſmall bracte at the baſe. Calyx lanuginoſe. Petals ſcarcely larger than the calyx, white tinged with purple. Stamens about nineteen. Germ inferior, roundiſh, ſmooth, reddiſh. Styles three, ſometimes four and even five. Stigmas capitate, ſulphur-coloured. Berry bright red, pear-ſhaped, or globular-ovate, flatted at top, crowned with the five-toothed calyx, the ſegments converging when the fruit is ripe; the pulp is yellow. Seeds three, ſeldom four or five, ovate, yelloviſh, ſharpiſh, convex and ſomewhat rugged on one ſide, triangular on the other [k].

Pallas deſcribes it as being ſeldom higher than a man, but in rocky ſituations not more than an ell in height: the trunk not more than an inch in diameter, with a brown cinereous bark, and a very hard, tough, compact wood: the twigs have a ſmooth teſtaceous or reddiſh bark. The corymbs commonly four-flowered, but frequently from five to ſeven-flowered, and ſometimes having three, two, and even one flower, with a leaf or two at the baſe, and an awl-ſhaped deciduous little bracte to each pedicel. Flower the ſize of Hawthorn. Calyx bluntly five-toothed. Corolla white or reddiſh white. Filaments fifteen to twenty, with ovate whitiſh anthers. Styles two, three or four, the length of the ſtamens. Berry globular, ſubumbilicate, green, next orange, then red, and finally black, ſmooth, fleſhy, inſipid, or ſlightly auſtere. Seeds two, three, or more frequently four.

Native of many parts of Europe and Siberia. Ray obſerved it on the hills bordering on the Rhine, on mount Saleve and Jura. It was cultivated in 1656, by Mr. John Tradeſcant, junior. It flowers in april and may [l].]

9. This has a ſmooth ſtalk about eight feet high, dividing into many ſmooth branches. Leaves two inches and a half long, of a thick ſubſtance, dark green on their upper ſide, but downy on their under, ſtanding upon ſhort foot-ſtalks. The flowers come out of the ſide of the ſtalk upon ſhort ſmall branches, five or ſix growing upon each in a cloſe bunch: the petals are of a purple colour, little longer than the

[a] Mill. fig. [b] Du Roi. [c] Hort. kew. [d] Villars. [e] Hort. kew. [f] Linn. [g] Hort. kew. [h] Hort. kew. [i] Thunberg. [k] Pallich. [l] Hort. kew.

calyx, which is woolly, with blunt segments. The fruit is large, roundish, and of a fine red colour when ripe.

[Cultivated in 1759, by Mr. Miller. It flowers in april and may[1].]

PROPAGATION AND CULTURE.

All these sorts are hardy enough to thrive in the open air in England, and some of them are very ornamental plants for gardens, where, during the season of their flowering, they will make a fine appearance; and again, in autumn, when their fruit are ripe, they will afford an agreeable variety, and their fruit will be food for the deer and birds; if clumps of each sort are planted in different parts of the garden, nothing can be more ornamental.

The American kinds are usually propagated in the nurseries, by grafting or budding them upon the common White Thorn, but the plants so propagated will never grow to half the size of those which are propagated by seeds; so that those plants should always be chosen which have not been grafted or budded, but are upon their own roots.

But there are many who object to raising the plants from seeds, on account of their seeds not growing the first year, as also from the tediousness of the plant's growth after; but where a person can furnish himself with the fruit in autumn, and take out their seeds soon after they are ripe, putting them into the ground immediately, the plants will come up the following spring; if they are kept clean from weeds, and in very dry weather supplied with water, they will make good progress; but if they are planted in the places where they are to remain, after two years growth from seeds, they will succeed much better than when the plants are of greater age; the ground should be well trenched, and cleansed from the roots of all bad weeds. The best time to transplant them is in autumn, when their leaves fall off; they should be constantly kept clean from weeds, and if the ground between the plants is dug every winter, it will greatly encourage the growth of the plants, so that if they are cleaned three or four times in the summer, it will be sufficient.

All the sorts of Mespilus and Crataegus will take, by budding or grafting upon each other; they will also take upon the Quince, or Pear stocks, and both these will take upon the Medlars; so that these have great affinity with each other.

MESPILUS. See *Crataegus* and *Ehretia*.

[MESSERSCHMIDIA. (*So named by Linnæus from Daniel Gottlieb Messerschmid, who travelled into Siberia.*)

Lin. gen. Reich. n. 204. *Schreb.* 252. *Gærtn. t.* 109. *Juss.* 129.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Asperifoliæ. Borragineæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted; *segments* sublinear: erect, permanent.

COR. one-petalled, funnel-form. *Tube* cylindric, rude, longer than the calyx, globular at the base. *Border* five-cleft, plaited, membranaceous at the sides. *Throat* naked.

STAM. *Filaments* five, minute, in the lower part of the tube. *Anthers* awl-shaped, upright, within the middle of the tube.

PIST. *Germ* subovate. *Style* cylindric, very short, permanent. *Stigma* capitate, ovate.

PER. *Berry* dry, suberous, cylindric-rounded with a retuse umbilicus, surrounded with four blunt teeth, bipartile.

SEED two within each part of the pericarp, oblong, bony, incurved, outwardly rounded, inwardly angular.

ESSENTIAL CHARACTER.

Cor. funnel-form with a naked throat. *Berry* suberous, bipartile, each two-seeded.

SPECIES.

1. Messerschmidia fruticosa.

Lin. syst. 190. *Suppl.* 132. *L'Herit. stirp. nov.* 2. *t.* 1.

Stem shrubby, leaves petioled, corollas salver-shaped.

[1] Hort. Kew.

2. Messerschmidia Argunia.

Lin. syst. 190. *Suppl.* 132. *mant.* 42. 334. *Gurt. ussf.* 36. *Reich.* 1. 404.

Tournefortia sibirica. *Lin. spec.* 202. *Act. petrop.* 1763. 315. *t.* 11.

Arguzia montana. *Amm. ruth.* 38.

Stem herbaceous, leaves sessile, corollas funnel-shaped.

DESCRIPTION, &c.

1. This is a tall, rugged, rough-haired, branching shrub, with the branches panicled at the top. Leaves alternate, on long petioles, lanceolate, entire, veined, rough-haired. Spikes compound, directed one way, dichotomous, at the ends of the twigs on the top of the stem. Calyx very short. Corolla small, globular, inflated towards the border, which is small and flat. Berry depressed, rounded, surrounded by four teeth prominent in a circle, longitudinally two-parted. It has the corolla of Tournefortia with the fruit of Messerschmidia. It differs from the next species, which it otherwise much resembles, in its shrubby stem, petioled leaves, shorter calyx, and smaller salver-shaped corollas with a flat border[1].

Native of the Canary islands, where it was found by Masson. Introduced in 1779. It flowers from june to october[2].

2. Root creeping. Stem upright, a span high. Branches alternate. Leaves alternate, ovate-oblong, veined, tomentose, hoary. Corymbs or bunches of flowers often two. Calyx shorter than the tube of the corolla. Corolla white, larger than in the preceding, with the throat naked and pervious, the border plaited, and the sides membranaceous[3]. Berry juiceless, globular, umbilicate, obscurely striated, brown-ash-coloured, having two stones in it, bipartile: rind thick, fungous-coriaceous: stones roundish, convex on one side and longitudinally striated, flattish on the other, three-celled; the two lateral cells having seeds, the middle one barren, half open at top. Seeds four, oblong, slightly attenuated upwards, so obscurely angular as to be in a manner round[4].

Native of Siberia. Introduced in 1780, by Peter Simon Pallas, M. D.[5]

MESUA. (*So named by Linnæus, from John Mesue, a physician of Damascus, who lived in the eighth century?*)

Lin. gen. n. 665. *Reich. n.* 915. *Schreb. n.* 1146. *Juss.* 258.

Class. 16. 6. Monadelphia Polyandria.

Nat. order of *Guttiferæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved: *leaflets* ovate, concave, blunt, permanent, the two outer smaller ones opposite.

COR. *Petals* four, retuse, waved.

STAM. *Filaments* numerous, capillary, the length of the corolla, connate at the base into a pitcher. *Anthers* ovate.

PIST. *Germ* roundish. *Style* cylindric. *Stigma* thickish, concave.

PER. *Nut* roundish, acuminate, with four longitudinal raised sutures.

SEED single, roundish.

ESSENTIAL CHARACTER.

Cal. simple, four-leaved. *Cor.* four-petalled. *Pist.* one. *Nut* four-cornered, one-seeded.

SPECIES.

1. Mesua ferrea.

Lin. spec. 734. *Juss.* 632. *Reich.* 3. 369. *fl. zeyl. n.* 203.

Nagassarium. *Rumph. amb.* 7. *p.* 3. *t.* 2.

Naghas. *Herm. zeyl.* 7.

Calophyllum nagassarium. *Burm. ind.* 121.

Balustia-thampacam f. Cassanea rosea indica. *Rheed. mal.* 3. 63. *t.* 33. *Raii hist.* 1680.

DESCRIPTION, &c.

This is a tree with opposite lanceolate leaves, five times as long as the internodes, quite entire, the upper surface smooth and green, the under glaucous and smooth; on very short petioles. Flower in each axil of the leaves sessile. Petals very large, rounded.

[1] Linn. suppl. [2] Hort. kew. [3] Linn. mant. and suppl. [4] Gærtner. [5] Hort. Kew.

Germ within the calyx. Style thick, the length of the ſtamens. Stigma capitate.

Native of the Eaſt Indies. Rheede ſays, it is much cultivated in Malabar, for the beauty of the flowers, which come out there in July and auguſt; and that it bears fruit in ſix years from the nut, continuing frequently to bear during three centuries.

He deſcribes it as a very large tree, ſpreading like the Lime, with flowers the ſize and ſhape of the wild Roſe or Sweet Briar, but with only four white petals. Fruit, when it begins to ripen ſmooth and greeniſh, but rufous and wrinkled when ripe, with a rind like that of the Cheſtnut, and three or four kernels within, the ſhape and ſize, ſubſtance and taſte of Cheſtnuts.

METEL. See *Datura*.]

METHONICA. See *Gloriosa*.

[METOPIUM. See *Rhus*.

METROSIDEROS. (*From μητρα medulla, and σιδηρος ferrum; the heart of theſe trees having the hardneſs or colour of iron.*)

Banks Muſ. Gærtn. fruct. t. 34. f. 2. Smith in Linn. tranſ. 3. 266. Leptoſpermum. *Forſt. gen. t.* 36. *f.* a—c & m—t.

Claſs. 12. 1. Icoſandria Monogynia.

Nat. order of *Myrti*.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-cleft, half ſuperior.

COR. *Petals* five, concave, nearly ſeſſile, deciduous.

STAM. very long, ſtanding out, free or ſeparate. *Anthers* incumbent.

PIST. *Germ* turbinate, flattened to the bottom of the calyx. *Style* filiform, erect. *Stigma* ſimple, ſmall, ſcarcely dilated.

PER. *Capſule* three-celled (ſometimes four-celled), three-valved (ſometimes four-valved), partly covered with the belly of the calyx.

SEEDS very numerous (when unripe) linear-chaffy; when ripe, very few, rounded or angular.

ESSENTIAL CHARACTER.

Cal. five-cleft, half-ſuperior. *Pet.* five. *Stam.* very long, ſtanding out. *Stigma* ſimple. *Capſ.* three-celled.

SPECIES.

1. Metroſideros hiſpida.
Smith in Linn. tranſ. 3. 267.
Leaves oppoſite cordate at the baſe embracing, branchlets peduncles and calyxes hiſpid.

2. Metroſideros floribunda.
Smith in Linn. tranſ. 3. 267.
Leaves oppoſite petioled ovate-lanceolate, panicle brachiate, pedicels umbelled.

3. Metroſideros coſtata.
Smith in Linn. tranſ. 3. 267. *Gærtn. fruct.* t. 171.
Leaves oppoſite petioled linear-lanceolate acuminate obſcure, panicle brachiate-decompound, pedicels ſubumbelled.

4. Metroſideros diffuſa.
Smith in Linn. tranſ. 3. 268.
Melaleuca diffuſa. *Forſt. prodr.* 37.
M. lucida. *Linn. ſuppl.* 342.
Leaves oppoſite ovate veined ſmooth on both ſides, panicles axillary or terminating, pedicels oppoſite.

5. Metroſideros villoſa.
Smith in Linn. tranſ. 3. 268.
M. ſpectabilis. *Gærtn. fruct.* t. 172.?
Melaleuca villoſa. *Linn. ſuppl.* 342.
M. ereſtuoſa. *Forſt. prodr.* 38.
Leptoſpermum collinum. *Forſt. gen. n.* 2.
Leaves oppoſite ovate veined pubeſcent underneath, thyrſes axillary or terminating oppoſite villoſe, flowers ſeſſile cluſtered.

6. Metroſideros florida.
Smith in Linn. tranſ. 3. 269.
Melaleuca florida. *Forſt. prodr.* 37.
Leptoſpermum ſcandens. *Forſt. gen. n.* 1.
Leaves oppoſite obovate-oblong veined ſmooth, thyrſe terminating, calyxes turbinate naked.

[a] Linn. zeyl.

7. Metroſideros glomulifera.
Smith in Linn. tranſ. 3. 269.
Leaves oppoſite ovate netted-veined pubeſcent underneath, heads lateral peduncled, both they and the braëtes tomentoſe.

8. Metroſideros anguſtifolia.
Smith in Linn. tranſ. 3. 270.
Myrtus anguſtifolia. *Linn. mant.* 74.
Leaves oppoſite linear-lanceolate naked, peduncles axillary umbelled, braëtes lanceolate ſmooth deciduous.

9. Metroſideros ciliata.
Smith in Linn. tranſ. 3. 271.
Melaleuca ciliata. *Forſt. prodr.* 38.
Leptoſpermum ciliatum. *Forſt. gen. n.* 3.
Leaves ſcattered almoſt oppoſite elliptic blunt coriaceous ſubciliate at the baſe, corymbs terminating hairy.

10. Metroſideros linearis.
Smith in Linn. tranſ. 3. 271.
Melaleuca linearis. *Schrader ſert. hannoveran.* 19. *t.* 11.
Leaves ſcattered linear channelled acute becoming rigid, flowers lateral cluſtered ſeſſile.

11. Metroſideros lanceolata.
Smith in Linn. tranſ. 3. 272.
M. citrina. *Curt. magaz. t.* 260.
Leaves alternate lanceolate mucronate, flowers lateral cluſtered ſeſſile pubeſcent.

12. Metroſideros ſaligna.
Smith in Linn. tranſ. 3. 272.
Leaves alternate lanceolate attenuated to both ends mucronate, flowers lateral cluſtered ſeſſile ſmooth.

13. Metroſideros capitata.
Smith in Linn. tranſ. 3. 273.
Leaves ſcattered obovate mucronulate, heads terminating, calyxes and braëtlets hairy.

DESCRIPTIONS, &c.

1. This is a very magnificent ſpecies, eaſily diſtinguiſhed by its broad ſeſſile leaves, and hiſpid branches. Flowers yellow, with wide-ſpreading ſtamens, growing in umbels, many of which unite to form a large terminating corymb, rough with red-brown hairs, like thoſe of *Robinia hiſpida*. Young plants are to be ſeen in moſt collections about London; but it has not yet flowered.

2. Flowers ſmaller, appearing to be white. Panicles formed of ſeveral branches croſſing each other, and terminating in little umbels. Sometimes the flower-ſtalks are hiſpid, ſometimes ſmooth.

3. This may be known from the preceding by its narrower, longer, more rigid and ſhining, oblique or falcated leaves. The panicle is more irregularly and repeatedly branched; its utmoſt ramifications but imperfectly umbellate. The flowers are much larger, yelloviſh white [b]. Calyx ovate-globular, with from five to twelve ribs, very ſhortly five-toothed, ſuberous, thick, aromatic. Seed, when ripe, roundiſh plano-convex, with a ſhort creſt at the top and on the back, dun-coloured, ſmooth [c].

Theſe three ſpecies were found at Port Jackſon in New South Wales, by Mr. White [d].

4. Leaves three-nerved on the lower ſurface, the nerves vaniſhing before they come to the tip. Flowers yellow [e].

It was gathered in New Zealand by Meſſrs. Forſter, and communicated to Linnæus by Dr. Sparrman.

The ſtem is much branched. Young branches and backs of the younger leaves downy; flower-ſtalks, braëtes and calyx very much ſo. Flowers red, very ornamental, ſtanding at the end of each branch in a pair of ſmall denſe panicles or thyrſes, which are truly axillary and oppoſite, though the branch, terminating abruptly, is not protruded beyond them [f].

It reſembles the preceding very much, but that is quite ſmooth and has yellow flowers: this has the ſtem, petioles, panicle, peduncles and calyx white with down, the flowers red, and the ſtamens much longer [g].—It is a native of Otaheite.

6. The branches are long, each terminated by a thyrſe of large yelloviſh flowers, with the calyx re-

[b] Smith. [c] Gærtner. [d] Smith. [e] Linn. ſuppl. [f] Smith. [g] Linn. ſuppl.

markably

markably lengthened out, almoſt as in the Clove. Leaves ſmooth. Flower-ſtalks and calyx ſcarce perceptibly ſilky, with cloſe-preſſed hairs.—Native of New Zealand.

7. This is a tree, with round oppoſite branches. Leaves on ſhortiſh downy foot-ſtalks, entire, a little waved. Flowers greeniſh yellow, cluſtered in little globular heads, which ſtand on ſimple downy foot-ſtalks about an inch long, growing laterally, moſtly oppoſite to each other, juſt above the inſertion of the uppermoſt leaf-ſtalks, and contrary to them. Each head of flowers is accompanied by a pair of oblong downy bractes; the calyx is alſo downy.

This ſpecies is but ſlightly aromatic. Gathered near Port Jackſon by Mr. David Burton.

8. Linnæus firſt took this to be a Myrtus, and afterwards determined it to be a Leptoſpermum; but the ſtamens being diſtinct, thrice as long as the petals, and twice as long as the ſtyle, which has a perfectly ſimple ſtigma, and the calycine teeth being deciduous, it is a true Metroſideros.

The ripe capſules preciſely reſemble thoſe in Gærtner's figure of Melaleuca ſuaveolens, but that is, in other reſpects, a very different plant.

Burman's ſynonym, quoted by Linnæus, can hardly belong to this plant, unleſs his deſcription is very bad; for he calls the fruit a black berry, with one cell and a ſingle ſeed.

The dried leaves of this ſpecies are tinged with the ſame metallic green that is obſervable in thoſe of Metroſideros hiſpida, and ſome other New Holland plants of this order. It is a native of the Cape of Good Hope.

9. Leaves remarkably rigid, thick and concave, their margin reflexed, as in Celaſtrus lucidus, but leſs ſhining, whitiſh and reticulated with tranſverſe veins beneath, and marked with a ſtraight central nerve. The baſe of moſt of them is ciliated with long ſpreading hairs, like thoſe on the young branches, flower-ſtalks, calyx and even petals. The flowers are large, handſome, deep-red, but few together, in a terminating corymb or umbel. Fruit large, depreſſed, projecting in three lobes much above the rim of the calyx. Gathered by Meſſrs. Forſter in New South Wales.

10. Leaves very long, narrow, ſomewhat pungent, rigid and harſh. There is a variety with ſemicylindrical leaves, more rough on the back than the more common kind. The flowers ſurround the branches in a long cylindrical ſeſſile cluſter. Their petals are green, often ſlightly downy. Stamens very long, crimſon. Capſules round, depreſſed, when old crowding each other into an angular form. This has flowered at Hanover, but not here, though it is not uncommon in our collections.

11. This is a beautiful ſhrub. The corolla very nearly reſembles that of the preceding. It firſt flowered ſeveral years ago at the Marchioneſs of Rockingham's.

12. This is diſtinguiſhed from the preceding by its tapering leſs rigid leaves, ſmaller yelloviſh flowers, the calyx and petals of which are quite ſmooth in all their parts, neither downy nor fringed.

Dr. Smith ſuſpected that this might be M. viminalis of Gærtner; but the original ſpecimens of that ſpecies in Sir Joſeph Banks's herbarium are very different, having linear-lanceolate leaves not tapering at the ends, and downy flowers. The plant figured by Rumphius in t. 17. f. 2. of his ſecond volume has ſome reſemblance to this, but he deſcribes it as very aromatic, which ours is not.

13. This differs widely in appearance from all the other ſpecies. The leaves are ſcarcely one-third of an inch in length, very ſlightly veined, obſoletely crenate, or rather rough in the margin with minute points. Flower-ſtalks ſhort, forming little terminating heads. Calyx tubular, very hairy, with foliaceous permanent teeth. Petals ſmall, purple. Stamens of the ſame colour, and about thrice as long as the corolla. Germ very ſmall, in the bottom of the calyx. Style equal to the ſtamens. Stigma a little enlarged, but not capitate. The immature fruit has the rudiments of three ſmall valves. The form of the flower is much like that of Lythrum. The leaves are dotted, but ſcarcely aromatic.

This and the three preceding were found in New South Wales by Mr. White[1].

There are ſeveral other ſpecies of this genus, but they are not yet ſufficiently aſcertained. M. gummifera of Gærtner is an Eucalyptus. M. armillaris and nodoſa belong to the genus Melaleuca.]

MEUM. See *Athamanta*.

MEXOCOTL. See *Bromelia*.

MEZEREUM and MEZEREON. See *Daphne*.

[MICHAUXIA. *(In memory of Andrew Michaux, Botaniſt to the King of France, who travelled into Syria, Perſia and North America, and diſcovered this genus of plants.)*

Lin. gen. Silvreb. n. 1769. *p.* 840. *L'Herit. monogr.*

Mindium. *Juſſ. gen.* 164.

Claſſ. 8. 1. Octandria Monogynia.

Nat. order of *Campanaceæ*. *Campanulaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ſixteen-parted: *ſegments* lanceolate, unequal, the alternate ones reverſed.

COR. one-petalled, wheel-ſhaped, eight-parted, larger than the calyx: *ſegments* linear-lanceolate, ſpreading very much, revolute at the tip.

Nectary eight-valved, ſtaminiferous.

STAM. *Filaments* eight, awl-ſhaped, permanent. *Anthers* linear, very long, preſſed cloſe to the ſtyle.

PIST. *Germ* inferior, turbinate. *Style* columnar, permanent. *Stigma* eight-parted: ſegments awl-ſhaped, revolute.

PER. *Capſule* turbinate, truncated, eight-celled, valveleſs: cells rhombed.

SEEDS very numerous, ſmall, oblong, inſerted into the receptacles.

ESSENTIAL CHARACTER.

Cal. ſixteen-parted. *Cor.* wheel-ſhaped, eight-parted. *Nect.* eight-valved, ſtaminiferous. *Capſ.* eight-celled, many-ſeeded.

SPECIES.

1. Michauxia campanuloides. *Rough-leaved Michauxia. L'Herit. monogr. Ait. hort. kew.* 2. 8. *Curt. magaz.* 219.

Mahon. Dioſcor. l. 4. *c.* 16.

Medium Dioſcoridis vel Mindium Rhazis. *Rauw. itin.* 284. *t.* 35. *Dalech. hiſt. app.* 33. *Bauh. hiſt.* 2. 805. *Rati hiſt.* 2. 732.

Viola mariana laciniatis folius peregrina. *Bauh. pin.* 94.

Campanula. *Mor. hiſt.* 2. 460. *ſ.* 5. *t.* 3. *f.* 31. *Gron. orient.* 19.

Mindium. *Adanſ. fam.* 2. 134. *Juſſ. gen.* 164.

DESCRIPTION, *&c.*

This is a handſome biennial plant, with the habit of a Campanula. Stem ſimple, paniculed when in flower, upright, herbaceous, rough-haired, green, two feet high, the thickneſs of the little finger, milky as are alſo the branches, peduncles and calyxes. Branches alternate, axillary, flowering all over, ſpreading, reclining at the end. Root-leaves petioled, cordate; the next petioled and runcinate. Stem-leaves half-embracing, lanceolate, acute, widening into ears at the baſe, irregularly gaſhed, ſerrate, nerved, wrinkled, rough-haired, rigid, waved, aſcending at the ſides, purple at the edge, four inches long, an inch and half wide. Flowers in a panicle, peduncled, bracted, hanging down, white, four inches in diameter; ſome ſlightly tinged with purple on the outſide. Peduncles alternate, one-flowered, reflex, cylindrical, purpliſh. Bracte under the peduncle, half-embracing, cordate, acute, ſerrate, rough-haired, ſpreading, and beſides this a ſmall bracte on the peduncle itſelf.

It differs from Campanula, in the number of parts only, as Chlora does from Gentiana. Michaux ſent the ſeeds from Aleppo, and Billardiere found it on Lebanon[2].

Introduced in 1787, by Monſ. L'Heritier. It flowers from June to auguſt[3].

Mr. Curtis informs us, that he ſaw a plant of this fully blown at Meſſrs. Grimwoods at Kenſington in 1792, nearly ſix feet high, branched almoſt to the

[1] Smith. [2] L'Heritier. [3] Hort. kew.

bottom,

bottom, and loaded with a profuſion of flowers, bearing ſome diſtant reſemblance to thoſe of the Paſſion flower.

The ſeeds have not ripened in this country, ſo that being a biennial plant we cannot keep it at preſent. It requires the protection of a greenhouſe.

MICHELIA. (*So named by Linnæus, in honour of Pietro Antonio Micheli, of Florence, who publiſhed* Nova Plantarum Genera, Flor. 1729. fol.)

Lin. gen. n. 691. *Reich. n.* 749. *Schreb. n.* 963. *Gærtn. t.* 137. *Juſſ.* 280.

Claſſ. 13. 7. Polyandria Polygynia.

Nat. order of *Conduplicatæ. Magnoliæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* three-leaved: *leaflets* petal-form, oblong, concave, deciduous.

COR. *Petals* fifteen, lanceolate; the outer ones larger.

STAM. *Filaments* very many, awl-ſhaped, very ſhort. *Anthers* erect, acute.

PIST. *Germs* numerous, imbricate in a long ſpike. *Styles* none. *Stigmas* reflex, blunt.

PER. *Berries* (berried capſules) as many, globular, one-celled, half-bivalved, *G.* diſperſed in a raceme.

SEEDS four, (from two to eight, *G.*) convex on one ſide, angular on the other.

OBS. *It differs from* Magnolia *only in the number of ſeeds, and in the ſoftneſs of the pericarp.* G.

ESSENTIAL CHARACTER.

Cal. three-leaved. *Pet.* fifteen. *Berries* many four-ſeeded.

SPECIES.

1. Michelia Champaca.

Lin. ſpec. 756. *ſyſt.* 508. *Reich.* 2. 627. *ſ.* 2791. *n.* 144. *Oſb. it.* 93. *t.* 141. *engl. edit.*

Tsjampaca. *Rumph. amb.* 2. 199. *t.* 67, 68.

Champacam. *Rheed. mal.* 1. 31. *t.* 19. *Raii hiſt.* 1641. *Burm. ind.* 124.

Leaves lanceolate.

2. Michelia Tsjampaca.

Lin. ſyſt. 508. *Reich.* 2. 627. *mant.* 78. *Gærtn. fruct.* 2. 263.

M. euonymoides. *Burm. ind.* 124.

Tsjampaca ſylveſtris. *Rumph. amb.* 2. 202. *t.* 68.

Leaves lanceolate-ovate.

DESCRIPTIONS, *&c.*

1. This is a lofty tree, with a trunk as large as a man can compaſs, covered with a thick aſh-coloured bark. Leaves a ſpan or more in length, and four or five inches in width, contracted into an oblong narrow point, of a hard texture, flat and ſmooth, duſky green above, brighter green beneath, on petioles an inch in length. Flowers on the extreme twigs, axillary, on thick, upright peduncles an inch and half in length, and having a very fragrant ſmell. Petals narrow in three rows; in the outer row eight, three times as broad as thoſe in the middle row, which are alſo eight; towards the top they are more round and ſometimes pointed or cuſped, but leſs ſo than in the middle row: in the inner row they are ſmall, ſhort, very much cuſped towards the top, pale yellow. Fruit oblong ſpheroidal, with a thickiſh rind, firſt green, then pale whitiſh yellow, having a very ſharp taſte, and not a very pleaſant ſmell[a]. Calyx none. Corolla double. Petals fourteen; the ſix outer greater. Filaments ſurrounding the piſtil: anthers longer than the filaments. Styles, &c. as in Nymphæa. The flowers are offered as an agreeable preſent[b].

Native of the Eaſt Indies.

2. Flowers whitiſh or pale yellow, not ſmelling ſo ſweet. Leaves broader, petioled, and even when they are young covered with a ſilky pubeſcence, like thoſe of the Willow[c]. Capſules ſeveral, in a ſtrobile-ſhaped ſpike compreſſed to an edge towards the axis, but on the outſide ſwelling into a convex back, produced at top into a ſhort point continued below into the peduncle: at firſt fleſhy, but afterwards ſomewhat coriaceous, ſoft, orange-ruſt-coloured, opening on the outer ſide. Seeds one or two, ovate, turgid-lens-ſhaped, berried, red[d].

Native of the Eaſt Indies.

[a] Rheede. [b] Oſbeck. [c] Linn. [d] Gærtner.

MICHELIA. See *Gmelina* and *Pontederia.*

MICHOCOS. See *Grewia.*

MICROLEUCONYMPHÆA. See *Hydrocharis.*]

MICROPUS. (*From* μικρος *little, and* ποδς, *a foot.*)

Lin. gen. n. 906. *Reich. n.* 1080. *Schreb. n.* 1346. *Gærtn. t.* 164. *Juſſ.* 185. Gnaphalodes. *Tournef.* 439.

Claſſ. 19. 4. Syngeneſia Polygamia Neceſſaria.

Nat. order of *Compoſitæ Nucumentaceæ. Corymbiferæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Common inferior* five-leaved: *leaflets* thin, ſmall, obſolete. *Interior* very large, five-leaved: *leaflets* looſe, diſtinct, helmet-ſhaped, compreſſed, converging longitudinally by the margin.

COR. *Compound* of ten hermaphrodites in the diſk, and five females in the circuit.

Proper of the hermaphrodite one-petalled, funnel-form; five-toothed, erect: of the female none.

STAM. in the hermaphrodites. *Filaments* five, briſtle-ſhaped, very ſhort. *Anthers* cylindric, tubular, the length of the corollet.

PIST. in the hermaphrodites. *Germ* obſolete. *Style* filiform, longer than the ſtamens. *Stigma* obſolete.

In the females. *Germ* obovate, compreſſed, within each ſcale of the common inner calyx. *Style* from the inner ſide of the germ, briſtle-ſhaped, bent in towards the hermaphrodites, the length of the calyx. *Stigma* two-parted, ſlender, acuminate.

PER. none. *Calyx* unchanged, but the inner one larger, indurated.

SEEDS of the hermaphrodites none: of the females ſolitary, obovate, included in the proper leaflet of the inner calyx. *Down* none.

REC. with ſharp very ſmall *chaffs* ſeparating the ſeeds of the females, but not the florets of the diſk.

ESSENTIAL CHARACTER.

Cal. calycled. *Ray* of the corolla none. *Female florets* wrapped up in the calycine ſcales. *Down* none. *Recept.* chaffy.

SPECIES.

1. Micropus ſupinus. *Trailing Micropus.*

Lin. ſpec. 1313. *ſyſt.* 796. *Reich.* 3. 942. *hort. upſ.* 275. *Gouan illuſtr.* 74. *Gærtn. fruct.* 2. 389. *Cavan. hiſp.* 22 *n.* 37. *t.* 35.

Filago ſupina. *Lamarck. flor. franc.* 53. *n.* IX.

Gnaphalodes luſitanica. *Tournef. inſt.* 439.

Pſeudo-gnaphalium ſupinum, ſemine echinato. *Mor. hiſt.* 3. 93.

Gnaphalium ſupinum, echinato ſemine. *Pluk. phyt.* 1. 187. *f.* 6.

Stem procumbent, leaves in pairs.

[2. Micropus erectus.

Lin. ſpec. 1313. *ſyſt.* 796. *Reich.* 3. 942. *amoen.* 3. 421. *Loeſl. hiſp.* 166. *t.* 1. *f.* 3. *hort. cliff.* 402. (Gnaphalium). *Gærtn. fruct.* 2. 389.

Gnaphalium minus repens. *Magn. monſp.* 111.

G. minus latioribus foliis. *Bauh. pin.* 263.

G. Plateau 3. *Cluſ. hiſt.* 1. 229.

Filago ſ. Impia capitulis lanuginoſis. *Vaill. par.* 52.

Leontopodium verius Dioſcoridis. *Barr. ic.* 296.

Stem upright, calyxes toothleſs, flowers ſolitary.]

DESCRIPTIONS, *&c.*

1. This is an annual plant. The roots ſend out ſeveral trailing ſtalks, ſix or eight inches long, [divaricating, often branched, covered with a white nap, as is the whole plant. Leaves in pairs, generally oppoſite or nearly ſo, wedge-ovate, connate, plaited, three-nerved. Flowers axillary, ſeſſile, from the baſe to the very top of the ſtem] in ſmall cluſters, very ſmall, white. [Common calyx ſimple, (the inner one being called the corolla) compoſed of five or more ſcarioſe, pellucid ſegments, ſo ſmall as to be ſcarcely viſible to the naked eye. Florets hermaphrodites ſix, and females four. Corolla of the former green, with a purple five-parted border: of the latter longer, one-leafed, plaited, with the border preſſed cloſe on both ſides, gaping at the tip, where the ſtigma iſſues forth, within green and ſmooth, without tomentoſe, becoming indurated, and then muricated on the back in two rows. In the hermaphrodites anther purple, germ effete, ſtyle ſimple, ſtigma club-ſhaped: in the females,

germ sharp at the base; style longer than the corolla, arched inwards; stigma standing out, bifid, reclining on the hermaphrodite flowers. Receptacle very small, with very small chaffs. Seeds brown, ovate, closely included within the corolla[1].

Gærtner says, that he has searched in vain for the marginal chaffs that Linnæus attributes to the receptacle, and suspects that they are nothing else but the minute leaflets with which the calyx is obsoletely calycled at the base.

Native of Portugal, Spain, Italy and the Levant. It was cultivated in 1759, by Mr. Miller, and flowers from june to september[2]. In Spain it flowers in may.

2. This also is annual. The leaflets of the calyx are from seven to nine, compressed, woolly unarmed. Receptacle awl-shaped, separated into roundish tubercles, naked. Seeds obovate, bald, included within the calycine leaflets[3].

Native of Spain, France, and the Levant.]

PROPAGATION AND CULTURE.

1. This is sometimes preserved in gardens for the beauty of its silvery leaves. If the seeds be sown in autumn, or permitted to scatter, the plants will come up in the spring, and require only to be kept clean from weeds, and thinned where they are too close. When the seeds are sown in the spring, they seldom grow the first year.

[MICROTEA. (*From μικρότης, smallness, so called from the minuteness of the parts of fructification.*)

Lin. gen. Schreb. n. 1739. *p.* 797. *Swartz prodr.* 53. *descr. t.* 12.

Class. 5. 2. Pentandria Digynia.

Nat. order of *Oleraceæ. Atriplices*, Juss.

GENERIC CHARACTER.

Cal. *Perianth* five-leaved: *leaflets* oblong, permanent.

Cor. none.

Stam. *Filaments* five, filiform, the length of the calyx, inserted into the receptacle. *Anthers* subglobular, twin.

Pist. *Germ* superior, subglobular, echinated. *Styles* two, very short, divaricating. *Stigmas* simple, acute.

Per. *Drupe* dry, coriaceous, thin, echinated.

Seed. *Nut* roundish, smooth, with a single kernel.

ESSENTIAL CHARACTER.

Cal. five-leaved, spreading. *Cor.* none. *Drupe* dry, echinated.

SPECIES.

1. Microtea debilis.

Swartz prodr. 53. *descr.* 542. *t.* 12.

Scholleria. *Act. hafn.* 2. 210.

DESCRIPTION, &c.

It is an annual, native of the island of St. Christopher's in the West Indies[4]. Also of Granada, St. Eustatia, Guadaloupe, &c. Swartz thus describes it.—Plant smooth, a foot high. Stem herbaceous, branched, diffused, almost upright, striated, smooth. Branches irregular, diverging, weak, spreading. Leaves alternate, petioled, ovate-lanceolate, acuminate, entire, nerved, veinlets, smooth, somewhat succulent, like those of Chenopodium, deep green. Peduncles terminating or lateral, opposite to the leaves, distachyous. Racemes filiform, almost upright: flowers approximating, mostly directed one way, on short pedicels, very minute, greenish white. Bractes lanceolate, bvaline at the base of the pedicels. Fruit the size of Mustard seed, having very minute cells on the surface, echinate at the edge. Nut black, shining. Or it may be considered as a seed covered with a coriaceous echinate or muricate skin[5].

MIEGIA. (*J. Rud. Mieg published* Theses Medicæ Basil. 1721, 4°.—*And Achilles Mieg, published* Specimen observationum Anatomicarum atque Botanicarum, Basil. 1751, 4°. *I suppose this genus is named from one or both of them.*)

Lin. gen. Schreb. n. 1713. *p.* 786.

Remirea. *Aubl. guian.* 44. *t.* 16.

Class. 3. 1. Triandria Monogynia.

GENERIC CHARACTER.

Cal. *Glume* one-flowered, two-valved: *valves* ovate, concave, nerved: *upper* valve shorter, blunt; *lower* a little longer, sharpish.

Cor. two-valved. *Valves* ventricose, nerved: *outer* ovate, blunt, within and longer than the calycine valve; *inner* oblong, compressed at the tip, sharpish, the edges convoluted, longer than the outer, within the upper calycine valve.

Nectary one-leafed, ovate, gibbous at the back, somewhat compressed, acute, even, thick, suberous, thinner at the tip and edges, shorter than the corolla, opposite to the larger corolline glume, involving the germ.

Stam. *Filaments*: three, capillary, longer than the corolla. *Anthers* oblong, acute.

Pist. *Germ* oblong, subtriquetrous, within the nectary. *Style* simple, capillary, longer than the corolla. *Stigmas* two capillary.

Per. none.

Seed single, oblong, triquetrous-rounded, rolled up in the nectary, included within the permanent calyx and corolla.

Obs. *Aublet gives a character of his* Remirea *very different from this, which is from a dried specimen by Schreber. The nectary is singular in this plant.*

ESSENTIAL CHARACTER.

Cal. one-flowered, and *Cor.* two-valved. *Nect.* one-valved, involving the germ. *Seed* triquetrous-rounded, included within the calyx, corolla and nectary.

SPECIES.

1. Miegia maritima.

Lin. spec. ed. Willd. 311.

Remirea maritima. *Aubl. guian.* 1. 44. *t.* 16.

DESCRIPTION, &c.

Root creeping. Culms half a foot high covered with leaves branched at the top. Leaves lanceolate striated acute rigid. Panicle terminating contracted into an ovate spike.—Native of the sandy coasts of Cayenne and Guiana[6].

MIGNONETTE. See *Reseda.*

MILFOIL. See *Achillea.*

MILIUM (*of Pliny. So called of* Mille, *a thousand; because of the multitude of its grains.*)

Lin. gen. n. 79. *Reich. n* 85. *Schreb. n.* 110. *Juss.* 29. *Tournef. t.* 298.

Class. 3. 2. Triandria Digynia.

Nat. order of *Gramina, Graminee*, or *Grasses.*

GENERIC CHARACTER.

Cal. *Glume* one-flowered, two-valved: *valves* ovate, acuminate, almost equal.

Cor. two-valved, less than the calyx: *valves* ovate, one less.

Nectary two-leaved: *leaflets* ovate, obtuse, gibbous at the base.

Stam. *Filaments* three, capillary, very short. *Anthers* oblong.

Pist. *Germ* roundish. *Styles* two, capillary. *Stigmas* pencil-form.

Per. none.

Seed single, covered, roundish.

ESSENTIAL CHARACTER.

Cal. two-valved, one-flowered: valves almost equal. *Cor.* very short. *Stigmas* pencil-form.

SPECIES.

[1. Milium capense. *Cape Millet-Grass.*

Lin. syst. 109. *Retch.* 1. 167. *Willd.* 1. 358. *mant.* 185.

Panicle capillary, calyxes acuminate, awn of the corolla terminating curved.

2. Milium punctatum. *Dotted Millet-Grass.*

Lin. spec. 91. *syst.* 109. *Reich.* 1. 167. *Willd.* 1. 359. *amœn.* 5. 392. *Swartz obs.* 37.

Branches of the panicle quite simple, flowers alternate in pairs directed one way.

3. Milium lendigerum. *Yellow-spiked Millet-Grass.*

Lin. syst. 109. *Reich.* 1. 167. *Willd.* 359. *Schreb. gram.* 14. *t.* 23. *f.* 3. *Vahl symb.* 2. 18. *Wither. arr. ed.* 3. 122. *Villars dauph.* 2. 71.

[1] Cavanilles. [2] Hort. kew. [3] Lœfl. & Gærtn. [4] Swartz prodr. [5] Swartz descr.

[6] Willdenow.

Agroſtis auſtralis. *Lin. mant.* 30.
A. ventricoſa. *Gouan hort.* 39. 547. *t.* 1.
Alopecurus ventricoſus. *Hudſ. angl.* 28.
Gramen ſerotinum arvenſe, panicula pyramidali. *Raii hiſt.* 1288. *Scheuch. gram.* 148.
Gr. loliaceum, panic. ramoſa lutea. *Magn. monſp.* 297. *Mor. hiſt.* 3. 182. *ſ.* 8. *t.* 3. *f.* 12.
Gr. alopecuro accedens, &c. *Pluk. phyt. t.* 33. *f.* 6.
Panicle ſubſpiked, flowers awned.

4. Milium compreſſum. *Compreſſed Millet-Graſs.*
Lin. ſpec. ed. Willd. 359. *Swartz prodr.* 24.
Spikes generally in threes, florets alternate awnleſs preſſed cloſe to the rachis, culm jointed-compreſſed in the middle, pedunckes very long.

5. Milium digitatum. *Fingered Millet-Graſs.*
Lin. ſpec. ed. Willd. 359. *Swartz prodr.* 24.
Spikes digitated generally in fours ſubſeſſile, florets awnleſs preſſed cloſe directed one way, leaves cartilaginous-ſerrate at the edge.

6. Milium paniceum. *Panic Millet-Graſs.*
Lin. ſpec. ed. Willd. 360. *Swartz prodr.* 24.
Spikes ſubdigitate alternate approximating filiform, florets directed one way awnleſs preſſed cloſe three-cornered.]

7. Milium effuſum. *Common Millet-Graſs.*
Lin. ſpec. 90. *Reich.* 1. 168. *Willd.* 360. *fl. ſuec. n.* 61. *hort. cliff.* 27. *Hudſ. angl.* 29. *Wilber. arr. ed.* 3. 122. *Relh. cant. n.* 48. *Curt. lond.* IV. 12. 248. *Hall. helv. n.* 1525. *Pollich pal. n.* 67. *Lœrs herborn. n.* 50. *t.* 8. *f.* 7. *Heſſm. germ.* 23. *Roth. germ.* 1. 36. 2. 79. *Krock. ſilef. n.* 108. *Villars dauph.* 2. 70.
Gramen ſylvaticum, panicula miliacea ſparſa. *Bauh. pin.* 8. *theatr.* 121. *Scheuch. gram.* 133. *Mor. hiſt.* 3. 8. 1. 5. *f.* 10.
Gr. miliaceum. *Lob. ic.* 3. *Ger. emac.* 6. 1. *Raii ſyn.* 402.—vulgare. *Park. theat.* 1153.
Flowers panicled diſperſed awnleſs.

8. Milium conſertum. *Cluſtered Millet-Graſs.*
Lin. ſpec. 90. *Reich.* 1. 168. *Willd.* 360. *Heſſm. germ.* 23. *Krock. ſilef. n.* 109.
Gr. paniculatum alpinum latifolium, panicula miliacea ſparſa. *Scheuch. gram.* 134.
Flowers panicled cluſtered.

[9. Milium globoſum. *Globular Millet-Graſs.*
Lin. ſyſt. 109. *Willd.* 360. *Thunb. jap.* 49.
Panicle patulous, glumes awnleſs, pedicels with a yellow hair.

10. Milium paradoxum. *Black-ſeeded Millet-Graſs.*
Lin. ſpec. 90. *ſyſt.* 109. *Reich.* 1. 169. *Willd.* 360. *Scop. carn. n.* 83. *t.* 1. *Schreb. gram. t.* 28. *f.* 2. *Villars dauph.* 2. 71.
Agroſtis paradoxa. *Lin. ſpec.* 1. 62. *Ger. prov.* 81. *Sauv. monſp.* 45.
Gr. avenaceum paniculatum galloprovinciale, aquilegiæ ſemine. *Mor. hiſt.* 3. 214. *Pluk. phyt. t.* 32. *f.* 2.
Flowers panicled awned.

11. Milium villoſum. *Woolly Millet-Graſs.*
Lin. ſpec. ed. Willd. 361. *Swartz prodr.* 24.
Andropogon inſulare. *Lin. ſpec.* 1480. *Swartz obſ.* 383. *Diſſ. noſtr. n.* 21. *Brown. jam.* 365. 2.
β. Bobartia ſpicis capitatis, involucro majori foliolo tectis. *Brown. jam.* 129.
Panicle lax, florets awnleſs, calyxes woolly.

12. Milium ramoſum. *Branched Millet-Graſs.*
Lin. ſpec. ed. Willd. 361. *Retz. obſ.* 6. 22.
Culm branched, flowers panicled uſually in pairs hirſute.

DESCRIPTIONS, *&c.*

1. Culms a palm in height, even, very tender. Leaves narrow, with hairs ſcattered over them underneath, and the throat bearded. Panicle diſperſed on every ſide. Pedicels as ſlender as a very fine hair. Calycine valves ovate, ſomewhat ventricoſe, acuminate, equal in length. Seed the length of the calyx. Awn terminating, curved, longer than the flower.
Native of the Cape of Good Hope[a].

2. Culm from one foot to two feet in height, ſimple, upright, round, jointed, ſmooth. Leaves broadiſh, entire, ſtriated, even. Sheaths beardleſs, cloſed. Panicle upright, ſimple: branches alternate, ſcattered, upright. Florets pubeſcent, two together, one generally leſs than the other, on very ſhort pedicels, one ſhorter than the other, ſurrounded at the baſe with a duſky ring. Rachis angular, filiform, rough-haired. Calycine glumes equal, acuminate, rough-haired on the outſide. Corolline glumes ſmaller, equal, ovate, the outer more ſhortly awned. Anthers very minute, brown. Stigmas feathered black-purple. Seed oblong, ſhining.
Native of Jamaica, in moiſt meadows[b].

3. This is a very ſmall annual plant, extremely hard to aſcertain, from the difficulty of ſeeing its characters. The ſpikes are concealed by ſmall awns, through which very ſmall ſeeds may be diſtinguiſhed, of the ſame form and colour with thoſe of Panicum viride, but only one-fourth or one-fifth of the ſize[c]. Panicle linear-lanceolate, gloſſy, from an inch and half to three inches in length. Calyx bellying and colourleſs at the baſe, finely ſerrulated at the edges, the longer valve awn-pointed. Larger valve of the corolla terminating in four little teeth, the ſmaller valve in two, much ſmaller than the calyx[d]: ſcarcely perceptible indeed without a glaſs[e].
According to Dr. Stokes, in its ſtructure this graſs is an *Avena*, and totally different from *Milium effuſum*. Mr. Hudſon made it an *Alopecurus*, but it cannot properly be conſidered as of that genus, becauſe the corolla is two-valved. Linnæus and Gouan have made it an *Agroſtis*, and according to Withering, if it muſt be removed from this genus, it would beſt accord with that; but the remarkable ſwell at the baſe of the calyx, rendered ſtill more remarkable by its being thin, colourleſs and tranſparent in that part, ſeems ſufficient to eſtabliſh it in its preſent ſituation.
Native of Portugal, the South of France and England. Iſle of Sheppey, Gillingham in Norfolk, near Weymouth.

4. This is a perennial graſs, native of the Weſt Indies.

5. Native of Jamaica. Annual.

6. Native of Jamaica[f].

7. Root perennial and creeping. Culms ſlender, three or four feet high, with about four joints. Leaves from four to ſeven inches or a foot in length, ſmooth, thin and weak, very finely ſtriated their whole length, rough if drawn backward through the hand, three or four lines in breadth, terminating gradually in a fine point. Sheaths ſtriated, ſmooth, at the inner baſe of the leaf terminating in a membrane which is often jagged. Panicles from four inches in length to a ſpan, a foot or more, nearly upright, ſpreading and looſe; the branches of it very fine and crooked[g]. It appears to be much ſcattered from the various lengths of the pedicels, which grow in whorls, and give this graſs an airy, light and elegant appearance[h]. The filaments are longer than the corolla: the anthers firſt oblong, then forked at each end. Germ ſmooth. Styles turned back, feathered and white. It is diſtinguiſhed from the Panics, to which it has the greateſt natural affinity, by having a calyx of two valves only[i]. The corolla is like that of *Phalaris arundinacea*, but it has no hairs at the baſe, and is not keeled; it is juſt ſhorter than the calyx[k]. The height it uſually attains, the ſituation in which it grows, and the delicacy of its panicle, diſtinguiſh this from all our other Graſſes[l].
Native of moſt parts of Europe, in woods. It flowers in may.

8. This reſembles the preceding very much, ſo much that Haller regards it only as a variety. The culm is from two to three feet in height, ſmooth and round. Leaves flat, ſmooth, ſix or ſeven lines in breadth, from ſix inches to a foot in length, firſt, rough at the edges; ſheaths ſtriated, ſmooth. Panicle ſcattered, a foot or eighteen inches long and more, with more and cloſer flowers. Glumes of the calyx green, with ſmooth white edges; of the corolla whitiſh[m].
Native of Germany and Switzerland, in woods.

[a] Swartz. [b] Villars. [c] Withering. [d] Woodward. [e] Swartz. [f] Curtis. [g] Withering. [h] Curtis. [i] Stokes. [k] Curtis. [l] Krocker.

9. Culm

[a] Lin. mant.

9. Culm ſimple, upright, a foot high or more. Leaves lanceolate, ſtriated, rugged, entire, margined, patulous, ſcarcely a finger's length. Sheaths ciliate at the throat and along the edges. Panicle patulous, ſubovate. Peduncles and pedicels capillary, flexuoſe, with a yellow belt below the tip. Calyxes ovate, blunt, awnleſs, ſmooth, brownith-green.—Native of Japan[a].

10. This ſpecies reſembles the Reed. The root is annual. The culms a foot and half high. Panicle white, large and open. Calyx looſe, whitiſh, nerved and compreſſed. Valves of the corolla even and ſhining, one of them ending in a long awn. Seed black, naked, ſhining, ovate[a]. The culms are three or four feet high, and the root perennial, according to Villars.

Native of the South of France and Carniola. Introduced in 1771, by Monſ. Richard. It flowers in july[b].

11. For the deſcription ſee *Andropogon inſulare*. It is an annual Graſs, and a native of Jamaica. Browne affirms, that the roots and leaves pounded and applied externally, cure ſores and ulcers of all ſorts with more certainty than moſt other things uſed for that purpoſe. It is a ſtrong deterſive and agglutinant; and doubtleſs, would make an excellent ingredient in vulnerary apozems and infuſions.

β. Bobartia or Round-headed Graſs of Browne is a variety of this Milium. He only ſays that it grows very rank, and is eaſily diſtinguiſhed by its large ſolitated heads.

12. Culms leafy, compreſſed, decumbent, with pubeſcent joints. Leaves linear, narrow, quite ſmooth, as are alſo the joints. Panicles ſeveral, on long peduncles, from the upper ſheaths; each a ſpan long, ſtiff, ſimply branched. Pedicels commonly two-flowered, villoſe, thickened, with a ſuburbicular receptacle long-haired at the edge. Beneath each flower a blackiſh ring. Lower flower ſubſeſſile. The lower peduncles are frequently twice two-flowered. Calyx lanceolate, acute, one-flowered: valves equal, hairy on the outſide. Corolla almoſt cartilaginous, ſmooth, ſhining, ſhorter than the calyx: outer valve convex, with a ſtiff point at the top concealed within the calyx, and the edges ſlightly bent in; the inner awnleſs, flat, with the edges bent in and converging at the baſe. Anthers bifid at both ends. Germ minute. Styles white, almoſt the length of the corolla. Stigmas long, feathered, brown.

If the pencilled ſtigma be the eſſential character of *Milium*, this Graſs ſhould be referred to *Agroſtis*: but the habit, calyx concealing the corolla, and the ovate form of the corolla, which is not acuminate although it has a point, all forbid this arrangement.

Native of the Eaſt Indies[c].

MILIUM. See *Holcus* and *Panicum*.

MILK-PARSLEY. See *Selinum*.

MILK-VETCH. See *Aſtragalus*.

——— Baſtard. See *Phaca*.

MILK-WORT. See *Polygala*.

MILLEFOLIO AFFINIS. See *Selago*.

MILLEFOLIUM. See *Achillea*, [*Acroſtichum*, *Ceratophyllum*, *Cotula*, *Gnaphalium*, *Hottonia*, *Phellandrium*, *Ranunculus*, *Utricularia*.

MILLEGRANA. See *Hermiaria*.]

MILLERIA. (*So named by Houſtoun in honour of his friend Philip Miller, F. R. S. Author of the Gardener's Dictionary and Kalendar.*)

Linn. gen. n. 985. *Reich. n.* 1067. *Schreb. n.* 1332. *Mart. cent.* 4. *Juſſ.* 187. *Gærtn. t.* 168.

Claſs. 19. 4. Syngeneſia Polygamia Neceſſaria.

Nat. order of *Compoſitæ Oppoſitifoliæ. Corymbiferæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Common* one-leafed, three-parted, very large, converging into a plane-three-ſided form, permanent: the two inner leaflets equal, ſubovate, acute, flat; the outer twice as large, roundiſh, acuminate, flat, cordate, more deeply divided from the reſt.

COR. *Compound* half-radiate. Corollets hermaphrodite two, within the ſmaller calycine leaflets: female one, within the large calycine leaflet.

Proper of the hermaphrodites one-petalled, tubular, erect, five-toothed—of the female ligulate, erect, blunt, concave, emarginate.

STAM. in the hermaphrodites: *Filaments* five, capillary. *Anthers* as many, erect, linear, connected by the middle of their ſides, the length of the corolla, acute.

PIST. in the hermaphrodites: *Germ* oblong, very ſlender. *Style* filiform, the length of the corollet. *Stigmas* two linear, weak, blunt, ſpreading.—In the females: *Germ* large, three-cornered. *Style* filiform, the length of the corollet. *Stigmas* two, briſtle-ſhaped, reflex, long.

PER. none. *Calyx* converging into a three-cornered figure.

SEEDS in the hermaphrodites none. In the females ſolitary, narrower towards the baſe, blunt, oblong, three-ſided. *Down* none.

REC. *Common* very ſmall, naked.

OBS. *In* M. quinqueflora *the female corollet is trifid, and there are four hermaphrodite tubular corollets. Calyx two-valved. Style of the male ſimple, of the female bifid.—The calyxes have always from ſeven to nine flowers.* Cavanilles.

ESSENTIAL CHARACTER.

Cal. three-valved. *Ray* of the corolla halved. *Down* none. *Recept.* naked.

SPECIES.

1. Milleria quinqueflora. *Five-flowered Milleria.*
Lin. ſpec. 1301. *Juſſ.* 789. *Reich.* 3. 918. *mant.* 478. *hort. cliff.* 425. *Gærtn. fruct.* 2. 423.
M. dichotoma. *Cavan. diſſ.* 58. *n.* 90. *t.* 81.
M. annua erecta, floribus ſpicatis luteis. *Mart. cent. t.* 41.
β. Milleria maculata. *Mill. dict. n.* 2.
M. annua ramoſior, foliis maculatis profundius ſerratis. *Mart. cent. t.* 47. *f.* 2.
Leaves cordate, peduncles dichotomous, calyxes double.
2. Milleria biflora. *Two-flowered Milleria.*
Lin. ſpec. 1301. *Reich.* 3. 918. *hort. cliff.* 425. *t.* 25. *hort. upſ.* 275. *Linſt. it.* 239. *Gærtn. fruct.* 2. 423.
M. annua erecta minor, foliis parietariæ, floribus ex foliorum alis. *Mart. cent. t.* 47. *f.* 1.
β. Milleria triflora. *Three-flowered Milleria.*
Mill. dict. n. 4.
Leaves ovate, peduncles quite ſimple, calyxes ſimple.
[3. Milleria Contrayerba.
Cavan. diſſ. 2. *n.* 4. *t.* 4.
Eupatorioides faliis folio trinervi, flore luteo, vulgo Contraverba. *Feuillé, p.* 18. *t.* 14.
Stem grooved, branches oppoſite decuſſated, leaves lanceolate ſerrate, flowers glomerate.

DESCRIPTIONS, *&c.*

1. Stem two feet high, ſtiff, ſmooth, grooved, brachiate. Root annual. Leaves oppoſite, triple-nerved, netted. Petioles connected at the edge, with a blunt reflex ſtipule interpoſed between them. Panicles trifid, dichotomous, with one-flowered pedicels. Calyx two-valved, ſqueezed or contracted, when paſt flowering converging into a globe. Male floret yellow; female one, three-parted. Style in the males ſimple, in the females bifid[a].]

It riſes with an herbaceous branching ſtalk from four to five or ſix feet high. Leaves about four inches long, and three inches broad towards their baſe, drawing to a point at the end, ſlightly ſerrate, having two veins on each ſide the midrib, which diverge and join to it near the baſe, meeting again at the point, which is generally oblique to the foot-ſtalk, which is about an inch long, and has the leaf running down on each ſide of it; the leaves are of a light green and hairy. The peduncles come out at the diviſions of the ſtalk; they branch out again by pairs, and terminate in looſe ſpikes of yellow flowers, compoſed of four or five male or imperfect hermaphrodite florets, which have no ſeed, and one female ligulate floret, which is ſucceeded by a ſingle, oblong, angular ſeed, wrapped in the calyx. It flowers in july and auguſt, and the ſeeds ripen in autumn.

It was diſcovered by Dr. William Houſtoun at Campeachy in the year 1731.

[a] Thunberg. [b] Linn. Villars. [c] Hort. kew. [d] Retzius.

[a] Linn. mant.

β. This

β. This approaches near to the preceding, but the ſtalks riſe ſix or ſeven feet high, branching out very wide. The leaves are ſeven inches long, and four inches and a half broad towards their baſe, ending in long acute points; they are more deeply ſerrate, and have ſeveral large black ſpots ſcattered over them; their ſurface is rougher, and they are of a darker green. The upper leaves are long and lanceolate. The pedunckles branch out wider, and the ſpikes of flowers are ſhorter. It was diſcovered by Mr. Robert Millar at Campeachy, in 1734.

2. This is alſo an annual plant, riſing with an herbaceous ſtalk upwards of two feet high, branching out at a ſmall diſtance from the root into three or four ſlender ſtalks, which are naked almoſt to the top, where they have two ovate-lanceolate leaves placed oppoſite, about two inches long, and three quarters of an inch broad near their baſe, ending in points; they are hairy, ſtand on naked foot-ſtalks near an inch long, and are rough; they have three longitudinal veins, and are ſlightly indented on their edges. The flowers come out at the foot-ſtalks of the leaves, in ſmall cluſters. The common calyx is compoſed of three orbicular leaves, compreſſed together. In each of theſe are two imperfect hermaphrodite florets, which are barren, and one female ligulate fruitful floret, to which ſucceeds a roundiſh angular ſeed, incloſed in the calyx. It was diſcovered at Campeachy by Dr. Houſtoun.

[According to Gærtner, the calyx of this is ſingle and three-valved; one of the valves is very large, ſubcordate, crenulate, with an oval cavity in the middle; the two other valves are much ſmaller, lanceolate-ovate, almoſt equal, cloſing the cavity of the larger valve in front. There is no veſtige of chaffs in the receptacle. Seed oblong, acuminate downwards, ſubtriquetrous, reddiſh cheſtnut-coloured, ſmooth, bald.—The preceding has a double calyx, the former one-leafed, unequally trifid, the latter augmented with five unequally leaflets, lying on the inner ſurface of the former: both are permanent, forming an involucre to the ſeed. The inner leaflets of the calyx may be regarded as chaffs, ſince they correſpond with the number and different ſizes of the germs; but ſince in the firſt ſpecies they are placed on the outſide of the receptacle, and the ſecond has them not, it ſeems better to refer them to the calyx. The outer ſegments of the calyx, being cloſely joined when ripe, form an ovate-turbinate, gibbous, coriaceous, black conceptacle, which incloſes the ſeed, and at the ſame time conceals the five interior leaflets, which are membranaceous, very ſlender, oblong, unequal, and reſembling chaffs. Seed ſubclavate, ſtriated, curved inwards, brown, bald.]

β. Stem upright, three or four feet high, with ovate-lanceolate leaves the whole length, near four inches long, and almoſt two broad near the baſe; they have three longitudinal veins, and towards the top there are two more which diverge from the midrib, but join again at the point; the upper ſide is of a dark green and ſmooth, the under ſide pale green, the edges are indented. Flowers axillary in ſmall cluſters, having three imperfect hermaphrodite florets and one female floret in each, on ſhort pedunckles. The calyxes are much ſmaller than thoſe of the preceding. It flowers and ſeeds here much later than the others. It was diſcovered by Mr. Robert Millar at Campeachy. [I have placed this as a variety of the ſecond, but I am not able to aſcertain whether it is ſo or not. The number of florets alone in this genus is not ſufficient to conſtitute ſpecific differences.

3. Stem red, grooved, three feet high. Branches ſomewhat ſpreading and villoſe. Leaves oppoſite, embracing, acutely ſerrate, ſmooth, three-nerved, nerves protuberant on the lower ſurface, which is glaucous. Flowers terminating, glomerate in corymbs. Common calyx deeply three-parted: the parts ovate, concave, and frequently two bractes at the baſe. Corolla yellow, villoſe at bottom: imperfect hermaphrodite florets two to five, female one. In the latter, the germ is larger, oblong-ovate, ſtriated, compreſſed. Seeds very ſmooth, longitudinally grooved, oblong-ovate.

It is an annual plant, native of Huanuco in Peru: and flowers at Madrid from ſeptember to december.

Juſſieu, deceived by dry ſpecimens, made a diſtinct genus of this plant, under the name of *Flaveria*; but in the living plant the *ligula* of the female floret is apparent.

The calyx is ſometimes two-leaved and two-flowered, and then one is male or imperfect hermaphrodite, and one female. Sometimes it is four-parted and many-flowered, having five male, and one female floret. Now and then there is only a ſingle floret, which is owing to the abortion of the reſt.

Neither is the calyx very large, nor is it always three-parted. The male florets alſo exceed two, and in the firſt ſpecies are commonly ſeven or nine. The generic characters therefore of *Milleria* ſhould be corrected thus:

Calyx ſimple, many-flowered, two-parted or three-parted.
Corolla of the hermaphrodite tubular, with a five-parted border—of the female, ligulate, emarginate or trifid.
Seed ſtriated, ſolitary in the male, none in the others.
Down none*.]

PROPAGATION AND CULTURE.

Sow the ſeeds early in the ſpring, on a moderate hot-bed. When the plants are about two inches high, tranſplant each into a ſeparate pot filled with light rich earth. Plunge them into a moderate hot-bed of tanner's bark. Shade them until they have taken root; and water them frequently. Then raiſe the glaſſes every day to give them a large ſhare of free air, when the weather is warm, and continue to water them duly, for they are very thirſty plants. In a month they will riſe to a conſiderable height, and ſhould then be ſhifted into larger pots, and plunged into the bark-bed, where they may have room to grow, eſpecially the firſt ſort. In the middle of july they will begin to flower, and the ſeeds will be ripe in a month or ſix weeks after. Gather them when they begin to change of a dark brown colour, for they ſoon fall off.

Theſe plants will continue flowering till michaelmas, or later, if the ſeaſon prove favourable: but when the cold of autumn comes on, they ſoon decay.

[MILLET CYPERUS GRASS. See *Scirpus*.

MILLET GRASS. See *Milium*.

MILLET, Indian. See *Holcus*.

MILT-WASTE. See *Aſplenium*.]

MIMOSA. (*So named by Tournefort*, q. Mimus mutabilis, *from the ſhifting or moving quality of the leaves, in ſome ſpecies.*—A Mimo, cujus motus imitari videtur. *Tournef.*)

Lin. gen. n. 1158. *Reich. n.* 1271. *Schreb. n.* 1595. *Gærtn. t.* 155. *Tournef. t.* 375. *Juſſ.* 346.

Acacia. *Tournef. t.* 375. Inga. *Plum.* 19.

Claſſ. 23. 1. Polygamia Monoecia.

Nat. order of *Lomentaceæ. Leguminoſæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-toothed, very ſmall.

COR. *Petal* one, funnel-form, half-five-cleft, ſmall.

STAM. *Filaments* capillary, very long. *Anthers* incumbent.

PIST. *Germ* oblong. *Style* filiform, ſhorter than the ſtamens. *Stigma* truncated.

PER. *Legume* long, with ſeveral tranſverſe partitions.

SEEDS many, roundiſh, of various forms.

OBS. *Many male flowers fall off; ſome are female, others hermaphrodite in the different ſpecies.*

Mimoſas *of Tournefort have a jointed legume, and the leaves as it were ſenſitive.*

Acacias *of Tournefort have a cylindric legume, and the leaves not moving with the touch.*

Ingas *of Plumier have a fleſhy legume.*

No part of the fructification is conſtant in this genus.

Calyx five-toothed, in others trifid.

Corolla one-petalled, in ſome five-petalled, others have no corolla.

Stamens in ſome many, in others ten, or five, or four, in ſome monadelphous, in others coſtrated.

* Cavanilles.

Pericarp a Legume, but fleshy in some, membranaceous in others, in some winged, in others jointed, and in some four-valved.
Seeds of different forms.

ESSENTIAL CHARACTER.

HERMAPH. *Cal.* five-toothed. *Cor.* five-cleft. *Stam.* five or more. *Pist.* one. *Legume.*
MALE. *Cal.* five-toothed. *Cor.* five-cleft. *Stam.* five, ten or more.

SPECIES.

* *With simple leaves.*

[1. Mimosa verticillata. *Whorl-leaved Mimosa.*
L'Herit. sert. angl. 30. t. 41. Ait. hort. kew. 3. 438. Curt. magaz. 110.
Unarmed, leaves whorled linear pungent.
2. Mimosa simplicifolia. *Simple-leaved Mimosa.*
Lin. syst. 913. suppl. 436.
M. simplex. *Sparrm. in act. upf. vol. 3. p. 195.*
M. Mangium. *Forst. flor. austral. n. 395.*
Mangium montanum. *Rumph. amb. 3. t. 81.*
Unarmed, arborescent, leaves ovate quite entire nerved blunt, spikes globular peduncled.

** *With leaves simply pinnate.*

3. Mimosa alba. *White Mimosa.*
Swartz prodr. 85.
Unarmed, leaves pinnate trijugous, pinnas equal ovate-acuminate, petiole submargined.
4. Mimosa Inga. *Large-leaved Mimosa* or *Inga Tree.*
Lin. spec. 1498. Reich. 4. 337. hort. cliff. 209. Swartz obs. 388. Brown. jam. 253. 10.
Inga flore albo fimbriato, fructu dulci. *Plum. gen. 13. ic. 25.*
Arbor filiquosa brasiliensis, foliis pinnatis costa media membranulis extantibus. *Sloan. jam. 2. 58. t. 183. f. 1. Raii hist. 1762. Merian. surin. t. 51.*
Unarmed, leaves pinnate five-paired, petiole margined jointed.
5. Mimosa laurina. *Laurel-leaved Mimosa.*
Swartz prodr. 85.
Unarmed, leaves pinnate two-paired, pinnas ovate shining almost equal, petiole linear angular, spikes axillary solitary.]
6. Mimosa fagifolia. *Beech-leaved Mimosa.*
Lin. spec. 1498, syst. 913. Reich. 4. 338. Jacqu. amer. 264. t. 164. pict. 128. t. 247. Pluk. phyt. t. 141. f. 2.
Unarmed, leaves pinnate two-paired, petiole margined.
[7. Mimosa nodosa. *Knobbed Mimosa.*
Lin. spec. 1498. Reich. 4. 338. dir. cliff. 49. hort. cliff. 209. Lour. cochinch. 649.
Phaseolus arboreus tetraphyllos zeylanicus. *Pluk. phyt. t. 211. f. 5. Burm. zeyl. 192. ind. 222. Raii suppl. 438.*
Unarmed, leaves pinnate two-paired, inner pinnas smaller, petiole linear.
8. Mimosa pilosa. *Hairy-leaved Mimosa.*
Lour. cochinch. 650.
Unarmed, leaves pinnate many-paired very hairy, heads terminating, legumes straight slender.

*** *With bigeminate or tergeminate leaves.*

9. Mimosa bigemina. *Sharp four-leaved Mimosa.*
Lin. spec. 1499. Reich. 4. 339. fl. zeyl. n. 218. Burm. ind. 222. Vahl symb. 2. 103.
Katou-conna. *Rheed. mal. 6. 21. Raii hist. 1746.*
Unarmed, leaves bigeminate acuminate.]
10. Mimosa Unguis cati. *Blunt four-leaved Mimosa.*
Lin. spec. 1499. syst. 914. Reich. 4. 339. hort. cliff. 207. Swartz obs. 389. Brown. jam. 252. 4. Pluk. phyt. t. 1. f. 6. Plum. ic. 4. (Acacia).
Thorny, leaves bigeminate blunt.
[11. Mimosa tergemina. *Tergeminate Mimosa.*
Lin. spec. 1499. syst. 914. Reich. 4. 339. Jacqu. amer. 265. t. 177. pict. 129. t. 262. f. 69. Plum. spec. 17. ic. 10. f. 1. (Acacia).
Unarmed, leaves tergeminate.]

**** *Leaves conjugate and at the same time pinnate.*

12. Mimosa latifolia. *Broad-leaved Mimosa.*
Lin. spec. 1499. Reich. 4. 340. Plum. spec. 17. ic. 9. (Acacia).
Unarmed, leaves conjugate, pinnas terminating opposite, lateral ones alternate.
13. Mimosa purpurea. *Purple Mimosa* or *Soldier Wood.*
Lin. spec. 1500. syst. 914. Reich. 4. 340. Plum. ic. 10. f. 2. (Acacia).
Unarmed, leaves conjugate pinnate, inmost pinnas smaller.
[14. Mimosa reticulata. *Netted Mimosa.*
Lin. syst. 914. Reich. 4. 340. mant. 129. Pluk. phyt. t. 123. f. 2. (Acacia).
Spines stipular, leaves conjugate, leaflets six-paired, petioles terminated by a gland and a prickle.]
15. Mimosa viva. *Lively Mimosa.*
Lin. spec. 1500. Reich. 4. 341. Brown. jam. 254. 13. Sloan. jam. 2. 58. t. 182. f. 7. Raii suppl. 480.
Unarmed, leaves conjugate pinnate, the partial ones four-paired roundish, stem herbaceous, unarmed.
16. Mimosa circinalis. *Spired Mimosa.*
Lin. spec. 1499. Reich. 4. 341. Plum. spec. 17. ic. 5. Catesb. car. 2. t. 97.
Prickly, leaves conjugate pinnate, pinnas equal, stipules spinose.
[17. Mimosa cineraria. *Ash-coloured Mimosa.*
Lin. spec. 1500. Reich. 4. 341. Brown. jam. 252. 5. Pluk. phyt. t. 2. f. 1. (Acacia).
Prickly, leaves conjugate pinnate, pinnas equal, prickles curved inwards.
18. Mimosa casta. *Chaste Mimosa.*
Lin. spec. 1500. Reich. 4. 342. hort. cliff. 208. upf. 145. Beerb. lugdb. 2. 55. Burm. ind. 212. Comm. hort. 1. 55. t. 28. (Æschynomene).
Prickly, leaves conjugate pinnate, partial ones three-paired almost equal.]
19. Mimosa sensitiva. *Sensitive Plant.*
Lin. spec. 1501. Reich. 4. 342. Breyn. cent. 31. t. 16. Trew. ehret. t. 95. Raii hist. 980. 4.
Prickly, leaves conjugate pinnate, partial ones two-paired, the inmost very small.
20. Mimosa pudica. *Humble Plant.*
Lin. spec. 1501. Reich. 4. 342. hort. cliff. 208. upf. 144. Gærtn. fruct. 2. 344. Plum. spec. 17. ic. 202. Breyn. cent. 40. t. 18. Comm. hort. 1. 57. t. 29. (Æschynomene). *Raii hist. 979. 2.* Caaco). *Park. theat. 1617. f. 2.*
Prickly, leaves subdigitate pinnate, stem bifpid.

***** *With doubly-pinnate leaves.*

[21. Mimosa Entada. *Rampine Mimosa.*
The same with the next species.
22. Mimosa scandens. *Climbing Mimosa.*
Lin. spec. 1501. syst. 915. Reich. 4. 343. Swartz obs. 389. Lour. cochinch. 650.
Gigalobium scandens claviculatum. *Brown. jam. 362.*
Lens phaseoloides. *Burm. zeyl. 139.*
Phaseolus maximus perennis, folio decompofito, lobo maximo contorto. *Sloan. jam. 68.*
Arbor filiquosa, juglandis folio, brasiliana, lobo longissimo, Acaciæ filiquæ instar distincto. *Bauh. pin. 404.*
Phaseolus novi orbis, s. Faba purgatrix, latissima cordis figura. *Pluk. phyt. t. 211. f. 6.*
Faba marina. *Rumph. amb. 5. p. 5. t. 4.*
Lobus brasilianus ingens. *Clus. exot. 3. 60.*
Pulsatrix. *Lin. zeyl. n. 644. Burm. ind. 222.*
Perim-kaku-valli. *Rheed. mal. 8. 59. t. 32, 33, 34.*
Unarmed, leaves conjugate terminated by a tendril, leaflets two-paired.]
23. Mimosa picna.
Lin. spec. 1502. Reich. 4. 344. hort. upf. 145. Houst. reliq. 10. t. 23. Mill. fig. t. 182. f. 2.
Unarmed, leaves bipinnate, spikes five-flowered, the lower ones full or double.
[24. Mimosa triquetra. *Three sided Mimosa.*
Vahl symb. 3. 102.
M. natans. *Lin. suppl. 439. syst. 914.*
Unarmed, procumbent, leaves two-paired, heads roundish, stems compressed below three-sided above.
25. Mimosa natans. *Floating Mimosa.*
Vahl symb. 3. 102.
Nitri-todda-vaddi. *Rheed. mal. 9. 35. t. 20.*
Neptunia oleracea. *Lour. cochinch. 655.*

Leaves

Leaves bipinnate two-paired or three-paired, leaflets thirteen-paired, heads oblong, stem flexuose rooting at bottom.

26. Mimosa virgata. *Long-twigged Mimosa.*
Lin. spec. 1502. *syst.* 915. *Reich.* 4. 344. *Jacqu. hort.* 1. 34. *t.* 80.
Acacia virgata. *Gærtn. fruct.* 2. 317. *t.* 148.
Unarmed erect angular, leaves bipinnate, spikes ten-stamened, the lower ones castrated males.)

27. Mimosa punctata. *Spotted-stalked Mimosa.*
Lin. spec. 1502. *Reich.* 4. 344. *Brown. jam.* 253. 8. *Comm. hort.* 1. 61. *t.* 31. (Æschynomene).
Unarmed, leaves bipinnate, spikes erect, flowers ten-stamened, lower ones castrated.

28. Mimosa pernambucana. *Slothful Mimosa.*
Lin. spec. 1502. *syst.* 915. *Reich.* 4. 345. *hort. cliff.* 209. *upsal.* 145. *Pluk. phyt.* 1. 307. *f.* 3. *Zan. hist.* 151. *t.* 60. *ed.* 2. 162. *t.* 123. *Sloan. jam.* 2. 88.
Unarmed, leaves bipinnate, spikes drooping five-stamened, lower ones castrated, stem decumbent.

29. Mimosa arborea. *Rough Tree Mimosa.*
Lin. spec. 1503. *Reich.* 4. 345. *Swartz obs.* 390. *Thunb. jap.* 229. *Lour. cochinch.* 651. *Brown. jam.* 252. 3. *Pluk. phyt. t.* 251. *f.* 2. *Sloan. jam.* 2. 54. *t.* 182. *f.* 1, 2. *Raii suppl.* 477. (Acacia).
Unarmed, leaves bipinnate, pinnas halved, acute, stem arborescous.

[30. Mimosa Julibrissin. *Smooth Tree Mimosa.*
Scop. insubr. 1. 18. *t.* 8. *Ait. hort. kew.* 3. 440.
M. arborea. *Forsk. descr.* 177. *n.* 89. *Gmel. it.* 3. 372. *t.* 40.
Arborescent, leaves bipinnate, pinnules cultriform acuminate, all the flowers perfect.

31. Mimosa comosa.
Swartz prodr. 85.
Unarmed, arborous, leaves bipinnate trijugous, pinnas (nine or ten-paired) oval retuse at the base, flowers panicled monadelphous.

32. Mimosa Lebbeck.
Lin. spec. 1503. *Reich.* 4. 345. *Hasselqu. in act. upsal.* 1750. *p.* 9. *itin.* 473. *engl. edit.* 249. *Forsk. Ægypt.* 177. *n.* 89. *Pluk. mant.* 2. *t.* 331. *f.* 1.
Unarmed, leaves bipinnate quadrijugous, pinnas oval-oblong, flowers monadelphous in bundles, stem arborous.

33. Mimosa odoratissima. *Sweet-scented Mimosa.*
Lin. syst. 915. *suppl.* 437. *Vahl symb.* 3. 102. *Pluk. amalth.* 1. 351. *f.* 4.
Unarmed, leaves bipinnate quadrijugous multijugous, leaflets oblong blunt, panicles rod-like, spikelets globular.

34. Mimosa speciosa. *Bladder-Senna-leaved Mimosa.*
Lin. syst. 915. *Jacqu. collect.* 1. 47. *Ait. hort. kew.* 3. 440.
Unarmed, leaves bipinnate subquadrijugous, pinnas generally nine-paired, leaflets oblong smooth, a gland above the base of the rib.

35. Mimosa vaga.
Lin. spec. 1503. *Reich.* 4. 346. *hort. cliff.* 209. *Lour. cochinch.* 651.
Guabi-pocaca-biba. *Maregr. bras.* 111. *Pis. bras.* 170.
Unarmed, leaves bipinnate, outer pinnas larger curved in pubescent.

36. Mimosa corniculata.
Lour. cochinch. 651.
Unarmed, bipinnate, petioles swelling at the base, supported by a little callous horn, leaflets generally eight-paired.

37. Mimosa villosa.
Swartz prodr. 85.
Unarmed, leaves bipinnate generally four-paired, pinnas ovate, both they and the petioles villose, flowers globular many-stamened, stem shrubby.

38. Mimosa latiliqua. *Broad-podded Mimosa.*
Lin. spec. 1504. *Reich.* 4. 346. *Plum. spec.* 17. *ic.* 6. (Acacia).
Unarmed, leaves bipinnate, partial ones five-paired, branchlets flexuose, buds globular.

39. Mimosa polystachia.
Lin. syst. 915. *Reich.* 4. 347. *Jacqu. amer.* 265. *t.* 183. *f.* 53. *pict.* 129. *t.* 262. *f.* 67. *Plum. spec.* 7. *ic.* 12. (Acacia).
Unarmed, leaves bipinnate, partial ones and pinnas six-paired oblong.

40. Mimosa mangensis.
Swartz prodr. 85. *Jacqu. amer.* 267. 5. *pict. t.* 262. *f.* 70.
Spines solitary short, leaves bipinnate generally nine-paired, spikes globular axillary solitary.

41. Mimosa muricata. *Muricated Mimosa.*
Lin. spec. 1504. *Reich.* 4. 347. *Plum. spec.* 17. *ic.* 11.
Unarmed, leaves bipinnate, partial ones five-paired, proper ones many-paired, stem muricated.

42. Mimosa juliflora.
Swartz prodr. 85. *Brown. jam.* 252. 2.
Spines stipulary in pairs, leaves bipinnate bijugous distinguished by a gland, spikes pendulous, legumes compressed.

43. Mimosa peregrina.
Lin. spec. 1504. *Reich.* 4. 347. *hort. cliff.* 209.
Unarmed, leaves bipinnate, partial ones fourteen-paired, pinnas forty-paired, with a petiolar gland at the base.)

44. Mimosa glauca. *Glaucous Mimosa.*
Lin. spec. 1504. *syst.* 916. *Reich.* 4. 347. *Breyn. cent.* 1. 73. *Mill. fig.* 4. *t.* 4. *Trew. Ehret. t.* 36. *Catesb. car.* 2. *t.* 42. (Acacia).
Unarmed, leaves bipinnate, partial ones six-paired, pinnas very many, with a gland among the lowest.

[45. Mimosa pterocarpa. *Wing-fruited Mimosa.*
Vahl symb. 3. 103. *Pluk. mant.* 329. *f.* 3. (Acacia).
M. pterocarpa. *Lamarck encycl.* 1. 1. *p.* 13.
Unarmed, leaves bipinnate many-paired, a petiolar gland between the two outmost, spikes axillary, legumes winged.

46. Mimosa grandiflora. *Great-flowered Mimosa.*
L'Herit. sert. angl. 30. *t.* 42. *Ait. hort. kew.* 3. 441. *Pluk. amalth.* 3.
Unarmed, leaves abruptly bipinnate, many-paired, pinnules many-paired, leaflets very distinct, raceme compound terminating.]

47. Mimosa Houstoni. *Houstoun's Mimosa.*
L'Herit. sert. angl. 30.
M. Houstoniana. *Mill. dict. n.* 16.
Gleditschia inermis. *Lin. spec.* 1509.
Mimosa. *Houst. reliqu.* 12. *t.* 26.
Acacia americana, &c. *Houst. Mss.* 22. *Mill. fig.* 4. *t.* 5.
Unarmed, leaves bipinnate abrupt commonly six-paired, pinnules many-paired, leaflets somewhat confluent, raceme compound terminating.

48. Mimosa cinerea. *Ash-coloured Mimosa.*
Lin. spec. 1505. *syst.* 916. *Reich.* 4. 348. *Fl. zeyl. n.* 215. *Burm. zeyl.* 3. *t.* 2. *Pluk. phyt. t.* 121. *f.* 5. (Acacia).
Spines solitary, leaves bipinnate, flowers in spikes.

49. Mimosa cornigera. *Horned Mimosa* or *Cuckold-Tree.*
Lin. spec. 1505. *syst. ed.* 13. 770. *ed.* 14. 916. *Reich.* 4. 348. *hort. cliff.* 208. *suppl.* 438. *Jacqu. amer.* 266. *pict.* 129. *Seba thes.* 1. 113. *t.* 70. *f.* 13. *Pluk. phyt. t.* 122. *f.* 1. *Comm. hort.* 1. 209. *t.* 107. (Acacia).
Spines stipulary connate divaricating compressed awl-shaped at the tip, leaves bipinnate, leaflets from twelve to twenty-paired, spikes axillary elongated.

[50. Mimosa Catechu.
Lin. syst. 916. *suppl.* 439. *Woodv. med. bot.* 183. *t.* 66.
Spines stipulary, leaves bipinnate many-paired, glands of the partial ones single, spikes axillary in pairs or threes pedunculed.

51. Mimosa horrida. *Horrid Mimosa.*
Lin. spec. 1505. *Reich.* 4. 349. *Vahl symb.* 1. 81.
M. Oriota. *Forsk. descr.* 177. & M. gummifera, *ejusd. cat. arab.* 124. *n.* 615. *Pluk. phyt. t.* 121. *f.* 4.
Spines stipulary the length of the leaves, leaves bipinnate, partial ones six-paired, branchlets corn.

52. Mimosa lera. *Fierce Mimosa.*
Lour. cochinch. 652.
Spines branched, leaves pinnate, flowers in spikes.

53. Mimosa eburnea. *Ivory-thorned Mimosa.*
Lin. syst. 916. *suppl.* 437.

Spines ſtipulary connate divaricating round awl-ſhaped, leaves bipinnate, leaflets ſix-paired, ſpikes globular pedunculed axillary ſeveral.

54. Mimoſa latronum. *Rogues Mimoſa.*
Lin. ſyſt. 916. *ſuppl.* 438.

Spines ſtipulary connate divaricating round awl-ſhaped, leaves bipinnate, leaflets four-paired, ſpikes elongated pedunculed axillary commonly in pairs.

55. Mimoſa filicioides. *Fern-like Mimoſa.*
Cavan. hiſp. 55. *n.* 86. *t.* 78.

Unarmed, leaves bipinnate, partial ones ſix-paired, leaflets very numerous, very ſmall, ciliate, without glands.

56. Mimoſa tortuoſa. *Writhed Mimoſa.*
Lin. ſpec. 1505. *Reich.* 4. 349. *amoen.* 5. 411. *Brown. jam.* 251. *t.* *Swartz obſ.* 391.

Spines ſtipulary, leaves bipinnate four-paired, a gland between the loweſt, pinnas ſixteen-paired, ſpikes globular.

57. Mimoſa farneſiana. *Farneſian Mimoſa* or *Sponge Tree.*
Lin. ſpec. 1506. *ſyſt.* 916. *Reich.* 4. 349. *hort. upſ.* 146. *Vahl ſymb.* 1. 81. *Lour cochinch.* 652.
M. ſcorpioides. *Forſk. cat. conſt.* 35. *n.* 448. & *cat. ægypt.* 77. *n.* 553.
Acacia indica farneſiana. *Ald. farneſ.* 2. *Raii hiſt.* 977.

Spines ſtipulary diſtinct, leaves bipinnate, partial ones eight-paired, ſpikes globular ſeſſile.

58. Mimoſa nilotica. *Egyptian Mimoſa.*
Lin. ſpec. 1506. *ſyſt.* 917. *Reich.* 4. 350. *mat. med.* 221. *hort. cliff.* 208. *Woodv. med. bot.* 187. *t.* 67. *Haſſelqu. itin.* 475. *Fabric. helmſt.* 327. *Blacko. t.* 377. *Pluk. phyt. t.* 123. *f.* 1.
Acacia foliis ſcorpioides leguminoſæ. *Baub. pin.* 392.
A. vera. *Baub. hiſt.* 1. 429. *Veſl. ægypt. t.* 8. (good)
Park. theat. 1547.
A. ægyptiaca. *Hern. mex. t.* 866.
Acanthus Theophraſti. *Raii hiſt.* 976.

Spines ſtipulary ſpreading, leaves bipinnate, the outer partial ones ſeparated by a gland, ſpikes globular pedunculed.

[59. Mimoſa ſtellata.
Vahl ſymb. 1. 81. *Forſk. deſcr.* 177.

Spines ſtipulary, leaves bipinnate, petioles having recurved prickles underneath, flowers racemed.

60. Mimoſa pigra.
Lin. ſpec. 1507. *Reich.* 4. 350. *amoen.* 4. 274.
Æſchynomene ſpinoſa quinta. *Comm. hort.* 1. 59. *t.* 30?
Æ. ſol. acaciæ latioribus, frondibus longiſſimos aculeos habentibus. *Breyn. cent.* 20.

Prickly, even, leaves bipinnate with oppoſite prickles, ſpine erect between each of the partial ones.]

61. Mimoſa aſperata. *Hairy-podded Mimoſa.*
Lin. ſpec. 1507. *ſyſt.* 917. *Reich.* 4. 351. *Mill. fig. t.* 182. *f.* 3. *Brown. jam.* 253. *n.* 11.
Æſchynomene ſpinoſa quarta. *Breyn. cent.* 43. *t.* 19.
Æ. ſpinoſa quinta. *Comm. hort.* 1. 59. *t.* 30.

Prickly, rough-haired, leaves bipinnate with oppoſite prickles, ſpine erect between each of the partial ones.

[62. Mimoſa Senegal.
Lin. ſpec. 1506. *Reich.* 4. 351. *mat. med.* 221. *Adanſon in act. par.* 1778. *p.* 20.

Spines in threes, the middle one reflex, leaves bipinnate, flowers in ſpikes.

63. Mimoſa caſſia. *Gray Mimoſa.*
Lin. ſpec. 1507. *Reich.* 4. 352. *fl. zeyl. n.* 217. *Pluk. mant. t.* 330. *f.* 3. *Burm. zeyl. p.* 3. (Acacia).

Prickly, leaves bipinnate, pinnas oval-oblong obliquely acuminate.

64. Mimoſa pennata. *Small-leaved Mimoſa.*
Lin. ſpec. 1507. *Reich.* 4. 352. *fl. zeyl. n.* 216. *Lour. cochinch.* 652. *Burm. zeyl.* 2. *t.* 1. *ind.* 224.

Prickly, leaves bipinnate very numerous linear-acerose, panicle prickly, heads globular.

65. Mimoſa Intſia. *Angular-ſtalked Mimoſa.*
Lin. ſpec. 1508. *ſyſt.* 917. *Reich.* 4. 352. *hort. cliff.* 209. *mant.* 503. *Pluk. phyt. t.* 122. *f.* 2. Intſia. *Rheed. mal.* 6. *p.* 7. *t.* 4.

Prickly, leaves bipinnate, pinnas curved inwards, ſtem angular, ſtipules longer than the prickle.

66. Mimoſa ſemiſpinoſa.
Lin. ſpec. 1508. *Reich.* 4. 353. *hort. cliff.* 208.

Prickly, leaves bipinnate, joints of the ſtem prickly above.]

67. Mimoſa quadrivalvis.
Lin. ſpec. 1508. *Reich.* 4. 353. *Mill. fig. t.* 182. *f.* 1. *Houſt. reliqu.* 11. *t.* 25. *Loeſl. it.* 266. *n.* 146.

Prickly, leaves bipinnate, ſtem quadrangular with recurved prickles, legumes four-valved.

[68. Mimoſa tenuifolia.
Lin. ſyſt. 917. *Reich.* 4. 353. *Plum. ſpec.* 17. (Acacia).

Prickly, leaves bipinnate, partial ones twenty-paired, pinnas many-jointed.

69. Mimoſa Ceratonia.
Lin. ſpec. 1508. *Reich.* 4. 354. *Plum. ſpec.* 17. *ic.* 8. (Acacia).

Prickly, leaves bipinnate five-paired, partial ones three-paired, pinnas three-nerved.

70. Mimoſa tamarindifolia.
Lin. ſpec. 1509. *ſyſt.* 917. *Reich.* 4. 354. *mant.* 503. *Plum. ſpec.* 7. *ic.* 17.

Prickly, leaves bipinnate four-paired, partial ones ten-jointed, ſtipules armed.

71. Mimoſa ſinuata.
Lour. cochinch. 653.

Prickly, leaves bipinnate many-paired, heads axillary, ſolitary, legumes ſinuate, ſtem climbing.

72. Mimoſa ſaponaria. *Soap Mimoſa.*
Lour. cochinch. 653.
Cortex ſaponarius. *Rumph. amb.* 1. 6. *t.* 72. *f.* 66.

Unarmed, leaves bigeminate and pinnate, panicle terminating.]

Species from Mr. Miller.

73. Mimoſa lutea. *Yellow Mimoſa.*
Mill. dict. n. 17.
Acacia ſpinoſa, foliorum pinnis tenuiſſimis glabris, floribus globoſis luteis, ſpinis longiſſimis. *Houſt. Mſs.*

Prickly, leaves bipinnate ſmooth, flowers globular pedunculed, prickles very long.

74. Mimoſa anguſtiſſima. *Narrow-leaved Mimoſa.*
Mill. dict. n. 19.
Acacia non ſpinoſa, floribus globoſis albis, foliorum pinnis tenuiſſimis glabris, ſiliquis ad ſingula grana tumidis. *Houſt. Mſs.*

Unarmed, leaves bipinnate, pinna very narrow ſmooth, legumes ſwelling.

75. Mimoſa campechiana. *Stag-horned Mimoſa.*
Mill. dict. n. 20.
Acacia ſpinoſa tenuifolia, ſpinis ſingulis cornu bovinum per longitudinem ſiſſum referentibus. *Houſt. cat. Mill. fig.* 4. *t.* 6.

Thorny, leaves bipinnate, pinnas narrow, with ſpines like an ox's horn ſplit longitudinally.

Species from the Plants of Coromandel.

76. Mimoſa dulcis. *Sweet-taſted Mimoſa.*
Roxb. corom. 67. *t.* 99.

Thorns ſtipular, leaves bigeminate, leaflets obliquely oblong, ſmooth, pointed.

77. Mimoſa Xylocarpa. *Wood-fruited Mimoſa.*
Roxb. corom. 68. *t.* 100.

Leaves ſcattered in pairs, pinnate, leaflets from two to four-paired, entire, oblong, ſmooth, the outer pair largeſt, glands on the petioles, ſtipules lanceolate.

Species from the Linnean Tranſactions, &c.

78. Mimoſa myrtifolia. *Myrtle-leaved Mimoſa.*
Smith in Linn. tranſ. 1. 252. *New. Holl.* 51. *t.* 15. *Cart. magaz.* 302.

Leaves elliptic lanceolate oblique quite entire cartilaginous at the edge, heads in axillary racemes, legumes linear with a thick edge.

79. Mimoſa ſuaveolens. *Sweet-ſcented Mimoſa.*
Smith in Linn. tranſ. 1. 252.

Leaves linear acuminate ſtraight cartilaginous at the edge, the primordial ones pinnate, branches triquetrous.

80. Mimoſa hiſpidula. *Little hairy Mimoſa.*
Smith New. Holl. 53. *t.* 16.

Leaves elliptical, oblique, rugged on each ſide and at the margin, branchlets hiſpid-pubeſcent, heads ſolitary.

81. Mimosa microphylla. *Prickly red Mimosa. Abbot's Georgia* 123. *t.* 62.
M. Intsia. *Walt. carol.* 252.
Prickly all over, leaves bipinnate eight-paired, leaflets fifteen-paired, heads axillary peduncled solitary or in pairs.

Species from Vahl's second part of Symbolæ Botanicæ.

82. Mimosa mellifera. *Honied Mimosa. Vahl symb.* 2. 103.
M. unguis cati. *Forsk. descr.* 176.
Thorny, leaves bigeminate blunt, prickles recurved.

83. Mimosa nitida. *Shining Mimosa. Vahl symb.* 2. 103.
Thorny, leaves bipinnate two-paired, a gland between each, leaflets five-paired, spikes globulose peduncled.

84. Mimosa umbellata. *Umbelled Mimosa. Vahl symb.* 2. 103.
Thorny, leaves conjugate and bipinnate two-paired, flowers umbelled, legumes spiral.

85. Mimosa Arak.
Vahl symb. 2. 104. *Forsk. descr.* 176.
Spines in threes straight, leaves bipinnate three-paired, proper five-paired, a gland between the lowest pair of the partial ones.

DESCRIPTIONS, *&c.*

This genus is composed of trees, shrubs, and undershrubs; some are unarmed, and others have prickles or thorns either all over or at the base of the petioles. The leaves are chiefly pinnate or bipinnate, and the petiole is sometimes glandular. Flowers in heads or spikes, either axillary or terminating, some of them usually imperfect or abortive. Some of the species yield a gum from the bark, others a clammy juice from the pods. The leaves in general are contracted in the evening and expanded again in the morning; and some of the species, more sensible, yield to the touch, and are hence commonly called Sensitive plants. This genus, now become unwieldy from the number of known species, may perhaps be hereafter divided from the number of stamens and structure of the legume or pod [a].

1. The leaves on this plant are described as simple, linear and pungent or hard and prickly at the end, and growing in whorls six or seven together; but it has dissimilar leaves, and the primordial ones, or two or three first leaves which appear on the seedling plants are bipinnate. This disposition to produce dissimilar leaves occurs in several other species of Mimosa, lately introduced from New South Wales, of which country this is a native [b]. It was found there by Mr. David Nelson, and was introduced at Kew by Sir Joseph Banks. It flowers from march to may [c]. Mr. Curtis remarks, that it is some years in arriving at its flowering state: that he first saw it in flower, and afterwards with ripe seed-pots, at Mr. Malcolm's at Kennington.

2. This is a beautiful little tree, with a smooth ash-coloured bark, and large leaves, very flat, without any longitudinal rib, but with numerous nerves, they are quite smooth and on very short petioles. Stipules none. Spikes globular, axillary, small, on short pedunckles. Legume compressed, curved inwards, the length of the leaf, torulose. When not in flower, it has no appearance of a Mimosa [d].

Native of the island of Tanna. Introduced in 1775, by John Reinhold Forster, L. L. D.[e]

3. Native of Cayenne.

4. This is a tree from ten to fifteen or twenty feet in height. The trunk and branches without thorns. Leaves pinnate alternate. Leaflets five-paired, sessile, connected by a margined subulate common petiole, ovate-lanceolate, generally entire, nerved, veined, smooth. Glands solitary between each pair of leaves. Pedunckles terminating, many flowered. Flowers in a sort of spike, rather large. Calyx one-leafed, five-toothed. Corolla twice as large as the calyx, five-toothed, greenish-white. Filaments monadelphous, very long. Anthers minute. Germ oblong. Style filiform. Stigma blunt. Legume long, angular-compressed, curved, with the futures two-keeled.

Native of the West Indies, especially on the banks of rivers, flowering early in the spring [f].

5. Native of the island of St. Christopher's.

6. This is a tree thirty feet in height, with an elegant close head, and a straight trunk ten feet long, and a foot in diameter. The wood is whitish, and the bark is gray. Leaves two-paired or three-paired; leaflets subovate, blunt, dark green, the outer ones three or four inches long and much larger than the others. Spike simple, solitary, cloffish, two inches long, containing about forty flowers, that are whitish and have scarcely any smell. Legume coriaceous, whitish yellow, including a sweet whitish pulp, which is sucked by the natives. They call the tree and fruit in Martinico *Pois doux*.

Native of the West Indies [g].

7. This is a small tree, with spreading unarmed branches. Leaflets ovate, acuminate. Common petiole linear, proper scarcely any. Flowers white, in diffused racemes, ending in umbellets, having hermaphrodite and male flowers mixed. Segments of the corolla ovate. Filaments about one hundred, monadelphous. Legume compressed, curved, with few seeds.

Native of Ceylon and Cochinchina.

8. This is an upright shrub, four feet high, hairy, with spreading branches. Leaflets ovate, blunt, hairy on both sides, the lower ones smaller. Flowers terminating, conglobated into a large white head. Calyx five-cleft, upright. Corolla bell-shaped. Filaments twice as long as the corolla; with very small roundish anthers. Legume linear, straight, slender, many-seeded.

Native of Cochinchina, in woods [h].

9. This is a tree with alternate leaves. Petioles bifid, with two leaflets at the top of each division. Leaflets lanceolate-ovate, like bay-leaves, smooth, quite entire, acuminate. Flowers in panicles, from the axils and ends of the branches, scattered, many-stamened, monadelphous, monopetalous, with the germ on a pedicel [i].

Native of the East Indies.

10. This is a small tree from seven to ten feet in height. The trunk is branched and unarmed. Branches subdivided, commonly unarmed, ash-coloured, wrinkled. Stipules none. Petiole bifid, each part terminated by two, sometimes but rarely by four leaflets. Leaflets wedge-shaped, ovate, blunt, entire, a little oblique, nerved, smooth. Glands at the division of the petiole, and between the pinnas. Pedunckles axillary and lateral, cluftered, scattered, terminated by a head of flowers. Corolla whitish. Filaments monadelphous, three times as long as the corolla, capillary, purplish. Anthers minute, simple. Germ oblong, compressed, blood-red. Style awl-shaped. Stigma simple. Legume compressed, twisted. Seeds five or six, compressed a little, shining, black, fastened by a scarlet membrane [k].

Native of Jamaica and other islands in the West Indies. Browne calls it the *Black-head Shrub* or *large-leafed Mimosa*.] Miller says they call it *Dettor Long*, and that the seeds are frequently brought to England by that name. [It was introduced in 1690, by Mr. Bentick [l].

According to Sloane, the seeds are eaten by goats, and sometimes by the negroes. The bark is very astringent, and is used in lotions and fomentations in America.

11. Petiole bifid, each pedicel terminating in two leaflets, and besides these, two opposite leaflets at the division of the common petiole. Flowers monadelphous [m]. Corolla cylindrical, with a very small upright border. Filaments twice, thrice, and often four times as long as the corolla, with a five-cleft membrane connecting them at top, resembling an inner corolla. Legume long, compressed, acuminate, one-celled, two-

[a] Jaffieu. [b] Curtis. [c] Hort. kew. [d] Linn. suppl. [e] Hort. kew. [f] Swartz. [g] Idem. [h] Jacquin. [i] Loureiro. [k] Linn. zeyl. [l] Swartz. [m] Hort. kew. [n] Linn.

valved, the valves rolled in ſpirally after they are divided. Seeds ſeveral, ſubovate, ſhining black [a].

Native of the Weſt Indies.

12. Flowers many-ſtamened, ſeſſile [b]. The leaves are like thoſe of the Walnut; and the flowers are purple [c]. Native of South America. Cultivated in 1768, by Mr. Miller.

13. This alſo has purple flowers, and is native of South America [d]. It was cultivated in 1768, by Mr. Miller [e].

14. This is a tree with rigid branches, that are flexuoſe from bud to bud. Under each bud is a pair of horizontal, whitiſh ſtipular thorns, the length of the leaves. Leaves petioled, conjugate or one-paired, with pinnate, ſix-paired leaflets. Common petiole terminated above by a gland, beneath by a prickle. Leaflets oblong-linear, blunt, at equal diſtances, the loweſt ſmaller. Legume oval, a hand in length and half as much in breadth, compreſſed, with large ſcattered ſeeds.

Native of the Cape of Good Hope [f].]

15. This has trailing herbaceous ſtalks, putting out roots at every joint, and ſpreading to a conſiderable diſtance. In the ſtove at Chelſea, a ſingle plant, in one ſummer, ſpread near three feet ſquare, and the branches were ſo cloſely joined, as to cover the ſurface of the bed: but when they are permitted to grow thus, they ſeldom produce flowers. The leaflets are narrow, and the petioles are ſhort and ſmooth. Flowers axillary, on naked peduncles about an inch in length; they are of a pale yellowiſh colour, and are collected into ſmall globular heads. Legumes ſhort, flat, jointed, containing three or four compreſſed, roundiſh ſeeds.

[This ſpecies is ſo very ſenſible as to contract its leaves on every ſlight touch or change of the atmoſphere; a puff of breath from the mouth will make an impreſſion on it; and Sir Hans Sloane relates, that having marked his name on a bed of it with a ſtick, it continued viſible for ſome time.

Native of Jamaica in the paſtures or ſavannahs [g]. Cultivated by Mr. Miller in 1759.]

16. The leaves of this tree divide into many ramifications; the leaflets are roundiſh, and placed in a very regular order. The ſeeds, which are flat, and one half of a beautiful red colour, the other half of a deep black, grow in long twiſted pods, and hanging by a ſmall thread for ſome time out of the pod, when they are ripe, make a very agreeable appearance. It was brought from the Bahama iſlands by Mr. Cateſby, in the year 1726.

[It agrees with M. Unguis cati in its ſtipular ſpines, and long pods ſpirally convoluted, but differs entirely from it in the leaves [h].

17. This prickly ſhrub is common in moſt of the ſugar colonies, eſpecially in Antigua, where the leaves are frequently uſed, mixed with corn, for their riding horſes; and it is thought to free them from botts and worms. It grows in a ruffed form, and ſeldom riſes above five or ſix feet from the ground, though it ſpreads a great deal more in its growth [i]. Browne names it Fingrigo or thorny Mimoſa. According to Linneus it is a native of the Eaſt Indies.

18. The lower flowers of the ſpikes are ten-ſtamened and barren; the upper ten-ſtamened and fertile. Native of the Eaſt Indies [k].]

19. This riſes with a ſlender woody ſtalk ſeven or eight feet high, armed with ſhort recurved thorns. The leaves grow upon long foot-ſtalks which are prickly, each ſuſtaining two pairs of wings; the outer pair has two lobes which join at their baſe, and are rounded on the outſide, but ſtraight on the inner edges, ſhaped like a pair of ſheep-ſhears; they are much larger than the inner, are almoſt two inches long, and one inch broad in the middle. From the place where theſe are inſerted in the ſtalk, come out ſmall branches, which have one or four globular heads of pale purpliſh flowers coming out from the ſide, on ſhort peduncles; and the principal ſtalk has many of thoſe heads of flowers on the upper part for more than a foot in length; and this, as alſo the branches, is terminated by like heads of flowers. Pods broad, flat, jointed, opening by two valves; containing one, two or three compreſſed orbicular ſeeds. The leaves move but ſlowly when touched, but the foot-ſtalks fall, when they are preſſed pretty hard. [Linneus remarks, that the flowers are five-ſtamened and apetalous.

Native of Brazil. Introduced before 1733, by William Houſtoun, M. D. [l] Mr. Miller ſays, that he ſent the ſeeds from La Vera Cruz, where it grows naturally.

20. Roots compoſed of many hairy fibres, which mat cloſe together, from which come out ſeveral woody ſtalks, which decline towards the ground, unleſs they are ſupported; they are armed with ſhort recurved ſpines, and have winged or pinnate leaves, compoſed of four, and ſometimes five pinnas, whoſe baſes join at a point, where they are inſerted into the foot-ſtalk, ſpreading upwards like the fingers of a hand. Flowers from the axils, on ſhort peduncles, collected in ſmall globular heads, of a yellow colour. Pods ſhort, flat, jointed, in cloſe cluſters, almoſt covered with ſtinging hairy covers.

[Calyx funnel-form, trifid, with one lobe wider. Corolla none. Filaments four, ſix times as long as the calyx, erect, filiform. Germ roundiſh. Style awl-ſhaped, a little ſhorter than the ſtamens. Stigma acute [m]. Legume oblong, compreſſed, jointed, girt by a filiform future with harmleſs ſpinules: joints from two to four, papery, one-celled, ſeparating from each other and from the future, and opening by two valves. Seeds ſolitary, rounded, lens-ſhaped, ſmooth, ſhining, honey-coloured or rufeſcent, with an eye-like ſtreak in the middle on each ſide, and faſtened by a capillary chord to the inner margin of the valves: ſkin ſingle, papery, thin: albumen watery, pale, thin, adhering cloſe to the ſkin: embryo ſtraight, yellow: cotyledons orbicular, leafy: plumule none: radicle rather large, retracted, ſtraight, centrifugal [n].

Native of Brazil.] It is the moſt common of any ſpecies in the iſlands of the Weſt Indies, and in the Engliſh gardens. The ſeeds are ſold in the ſeed-ſhops, by the name of Humble Plant. [Parkinſon calls it Mimick, Mocking, or thorny Senſitive Plant or Shrub, and ſays that he ſaw a living plant of it in a pot at Chelſey in Sir John Davers garden, where divers ſeeds being ſown about the middle of may 1638 and 1639, ſome of them ſprang up to be near half a foot high.

Senſitive plants were not unknown to the ancients. Theophraſtus ſpeaks of the Αιγυπτιον as growing about Memphis in Egypt; and Pliny of the *Ægilynomene*, ſo called from its contracting the leaves at the approach of the hand.

It is thus characterized in the flowing poetry of Darwin:

" Weak with nice ſenſe, the chaſte Mimoſa ſtands,
" From each rude touch withdraws her timid hands;
" Oft as light clouds o'erpaſs the ſummer glade,
" Alarm'd ſhe trembles at the moving ſhade;
" And feels, alive through all her tender form,
" The whiſper'd murmurs of the gath'ring ſtorm;
" Shuts her ſweet eye-lids to approaching night,
" And hails with freſhen'd charms the riſing light."

" Naturaliſts" ſays Dr. Darwin, " have not explained the immediate cauſe of the collapſing of " the Senſitive plant; the leaves meet and cloſe in " the night during the ſleep of the plant," (which in Sweden, according to Linneus, is from ſix in the evening to three in the morning during the months of june and july) " or when expoſed to much cold in " the day time, in the ſame manner as when they are " affected by external violence, folding their upper " ſurfaces together, and in part over each other like " ſcales or tiles; ſo as to expoſe as little of the upper " ſurface as may be to the air; but do not indeed " collapſe quite ſo far: for when touched in the night " during their ſleep, they fall ſtill farther, eſpecially " when touched on the foot-ſtalks between the ſtems

[a] Jacquin. [b] Linn. [c] Plumier. [d] Idem. [e] Hort. kew. [f] Linn. mant. [g] Browne and Sloane. [h] Linn. [i] Browne [k] Linn. [l] Hort. kew. [m] Linn. [n] Gærtner.

" and

" and the leaflets, which ſeems to be their moſt ſenſi-
" tive or irritable part. Now as their ſituation after
" being expoſed to external violence reſembles their
" ſleep, but with a greater degree of collapſe, may it
" not be owing to a numbneſs or paralyſis conſequent
" to too violent irritation, like the faintings of animals
" from pain or fatigue? A Senſitive plant being kept
" in a dark room till ſome hours after day-break, its
" leaves and leaf-ſtalks were collapſed as in its moſt
" profound ſleep, and on expoſing it to the light,
" above twenty minutes paſſed before the plant was
" thoroughly awake and had quite expanded itſelf.
" During the night the upper or ſmoother ſurfaces of
" the leaves are appreſſed; this would ſeem to ſhow
" that the office of this ſurface of the leaf was to ex-
" poſe the fluids of the plant to the light as well as to
" the air[f]."]

It would be to little purpoſe to trouble the reader with the ſeveral idle ſtories related of theſe plants by travellers, nor to inſert what has been ſaid by others, who have attempted to account for the motion of the leaves of theſe plants on their being touched; I ſhall therefore only mention what I have myſelf obſerved in theſe plants, for more than forty years that I have cultivated them.

The firſt is, that they are more or leſs ſuſceptible of the touch or preſſure, according to the warmth of the air in which they grow; for thoſe plants which are kept in a warm ſtove, contract their leaves immediately on being touched, either with the hand, a ſtick, or any other thing, or by the wind blowing upon them: ſome of the ſorts only contract their ſmall leaves, which are placed along the midrib; others not only contract their ſmall leaves, but the foot-ſtalk alſo declines downward on being touched: the firſt are called Senſitive, and the ſecond Humble Plants; but when theſe plants are placed in a cooler ſituation, they do not move ſo ſoon, nor contract ſo cloſely, as thoſe which are in a greater warmth; and thoſe which are entirely expoſed to the open air, have very little motion, but remain in one ſtate, neither expanded nor cloſed, but between both, eſpecially in cool weather; nor do theſe ſhut themſelves at night, as thoſe do which are in a warm temperature of air.

The ſecond is, that it is not the light which cauſes them to expand, as ſome have affirmed, who have had no experience of theſe things; for in the longeſt days of ſummer, they are generally contracted by five or ſix in the evening, when the ſun remains above the horizon two or three hours longer; and although the glaſſes of the ſtove in which they are placed, are covered cloſe with ſhutters to exclude the light in the middle of the day, yet if the air of the ſtove is warm, the leaves of the plants will continue fully expanded, as I have ſeveral times obſerved. Nor do theſe plants continue ſhut till the ſun riſes in the morning, for I have frequently found their leaves fully expanded by the break of day in the morning; ſo that it is plain the light is not the cauſe of their expanſion, nor the want of it that of their contraction.

I have alſo obſerved, that thoſe plants which are placed in the greateſt warmth in winter, continue vigorous, and retain their faculty of contracting on being touched; but thoſe which are in a moderate warmth, have little or no motion.

When any of the upper leaves of theſe plants are touched, if they fall down and touch thoſe which are below them, it will occaſion their contracting and falling, ſo that by one touching another, they will continue falling for ſome time. When the air of the ſtove in which theſe plants ſtand, is in a proper temperature of warmth, the plants will recover themſelves, and their leaves will be fully expanded in about eight or ten minutes. I have frequently watched them as they have been recovering, and have always found it has been by a vibratory motion, like the index of a clock.

Some of the ſorts are ſo ſuſceptible of the touch, that the ſmalleſt drop of water falling on their leaves will cauſe them to contract, but others do not move without a much greater preſſure.

The roots of all the ſorts have a very ſtrong diſagreeable odour, almoſt like that of a common ſewer. I have met with ſome accounts of theſe plants, in which it is mentioned, that the leaves and branches have a poiſonous quality, and that the Indians extract a poiſon from them, which kills by ſlow degrees, and that the root of the plant is the only remedy to expel it; but how far this is true I cannot ſay, having never made any experiments on the qualities of theſe plants; but if theſe plants have ſo deadly a quality as related, this ſenſibility with which they are endued, may be deſigned by Providence to caution perſons from being too free with them, and as many of them are ſtrongly armed with thorns, that is a guard againſt their being eaten by animals; for in all the enquiries which I have made of thoſe perſons who have reſided in the countries where they naturally grow, I could never learn that any animal will browſe upon them.

Mr. Miller has another ſpecies (n. 4.) to which he gives the ſame name of *pudica*, and which was diſcovered by the late Dr. Houſtoun at La Vera Cruz. This has woody ſtalks, which decline to the ground, ſpreading out two or three feet from the root, and ſend out ſeveral ſide branches, armed with ſhort yelloviſh ſpines under the foot-ſtalks of the leaves, and cloſely covered their whole length with briſtly ſtinging hairs: the foot-ſtalks are three inches long, and at the top ſuſtain four ſingle winged leaves, whoſe baſes meet in a point, but ſpread above like the fingers of an open hand: theſe wings are about three inches long, and have ſmall narrow leaflets cloſely ſet by pairs along the midrib, which is alſo covered on the under ſide with the like briſtly hairs as the ſtalk. Flowers axillary, upon pretty long peduncles, collected into globular heads, and of a pale yelloviſh colour. Pods ſmall, jointed, containing two or three ſhining black ſeeds. The common Humble Plant has the wings of the leaves ſhorter than this, and the ſtalks are not hairy.

[22. This climbs to the tops of the talleſt trees, to the height of one hundred and fifty feet, frequently overſpreading many of the neighbouring branches, and forming large arbours. The withs are ſlender, but tough and flexile[e], ſtriated, ſtiff, and ſmooth. Common petioles long, oppoſite, thickened at the baſe, round, very ſmooth, terminating in a tendril, by which the branches are ſupported. Pinnas four-paired, petioled, oblong, blunt at top, emarginate, nerved, ſmooth on both ſides, ſhining. Glands none. Tendril long, upright, bifid at the end. Spikes axillary, erect, very long, many-flowered. Flowers approximating, ſubſeſſile, ſmall. Petals five, erect, oblong, green. Filaments twenty to twenty-four, yellow, ſhorter than the corolla, and ſpringing from its baſe. Anthers globular. Legume very large, from ſix to eight feet long, and five or ſix inches wide, compreſſed, variouſly writhed, two-valved. Seeds ſeveral, orbicular, ſomewhat compreſſed, with a hard brown ſhining rind, and a black mark. Moſt of the flowers are abortive[f].

Browne ſays that the female plants throw out their flowers ſeparate, and are ſucceeded by ſo many pods. Loureiro found no male flowers, but all hermaphrodites. He aſſigns, as Linneus does, no more than ten ſtamens to the flowers, and ſays that they are twice as long as the corolla.

Native of both Indies and Cochinchina. In the Weſt Indies it is called *Cocoon*.]

23. This was diſcovered by Dr. Houſtoun at La Vera Cruz, growing in ſtagnant water, where the ſtalks were very broad and flat, and floated on the ſurface: but where the water was dried up the ſtalks grew upright and were round, which is always the caſe when the plant is cultivated in a garden; ſo that they might eaſily paſs for different plants with thoſe who never ſaw them growing in both ſituations. When cultivated in a garden this has great reſemblance to the 27th, but the ſtalks never grow ſo erect, the wings of the leaves are longer, and ſtand more horizontal in this,

[e] Browne. [f] Swartz.

[f] Loves of the Plants, p. 25.

the heads of flowers are much larger, the ſtamens are longer, and the flowers on the under ſide of the ſpike which have no ſtamens are double; the pods alſo are ſhorter, and much broader than thoſe of punctata. It is an annual plant in this country: and has ſince been found in the iſland of Barbuda, in a marſhy ſpot.

[Stems round, herbaceous, ſmooth, procumbent, rooting at all the joints. Leaves three-paired or four-paired, contracting with the leaſt touch. From the axils of theſe ſpring erect peduncles, four or five inches high, with ſcales the whole length, ſuſtaining handſome, yellow, almoſt globular heads, the ſame ſize with thoſe of red Clover. Flowers different in ſhape, nature and uſe: thoſe in the middle truly five-petalled, in ſmall five-cleft calyxes, with many long ſtamens; but thoſe in the circuit inſtead of ſtamens have oblong, beautiful, golden leaflets, much wider and handſomer than the true petals, which are ſmall and of a greeniſh colour. Theſe double flowers are barren; but the ſingle ones are ſucceeded by flat, ſmooth, two-valved legumes, containing ſeveral, black, ſhining, compreſſed ſeeds [a].—Cultivated by Mr. Miller before 1733.

24. Stems ſlender, a foot high, ſimple, ſmooth, compreſſed at bottom, above ſtriated and three-ſided. Leaflets ſcarcely an inch long, with about twelve pairs: pinnas linear, blunt, mucronate, ſmooth, appearing in the magnifier to be ciliate-ferrate. Petioles not glandular. Stipules ſemicordate, attenuated, ſmooth. Peduncles axillary, ſolitary, ſhorter than the leaf, with two oblong leaves in the middle. Flowers in a globular head, the ſize of a pepper-corn. Legumes about ſix, unguicular, pedicelled, oblong, compreſſed, ſmooth, four-ſeeded. This is wrongly placed under the name of natans, among the ſpecies with ſimply pinnate leaves, in Syſtema Vegetabilium [b]. Obſerved by Koenig in the Eaſt Indies.

25. Stems herbaceous, angular, ſmooth, floating, putting out rooting fibres at the lower joints. Leaves petioled: pinnas ſmall, the inmoſt ſmaller than the others, linear-oblong, quite entire. Glands none. Stipules ovate-rhomboidal, blunt iſh. Peduncles axillary, ſolitary, five inches long: ſpike oblong, nodding before flowering time: the lower florets a little more remote, barren and larger. Legumes compreſſed, an inch long.

Koenig ſent this under the name of *natans*, but called that which bears this name in the Supplement of the younger Linneus *triquetra*. The former is an aquatic plant, being found floating on freſh waters in the Eaſt Indies; but the latter is by no means ſo: Vahl therefore has changed the name with propriety.

Loureiro has conſtituted a new genus out of this ſpecies under the name of Neptunia. He ſays that it is cultivated in Cochinchina for ſalads, being faſtened to ſtakes in the water, that it may not float away, as it is entirely detached from the earth.

26. Spike roundiſh, nodding. Flowers ten-ſtamened, yellow; the lower ones of the ſpike without ſtamens or petals [c].—Native of the Weſt Indies. Introduced in 1774, by Joſeph Nicholas de Jacquin, M. D. It flowers in july and auguſt [d].

27. This riſes with upright branching ſtalks ſix or ſeven feet high, becoming woody towards the root, but not perennial (at leaſt they are not ſo here in any ſituation, the plants always decaying in winter;) they are ſmooth, and the leaves are compoſed of four or five pairs of long winged lobes, which have about twenty pairs of ſmall leaves ranged along the midrib; they are ſmooth and rounded at their points, of a full green on their upper ſide, but pale on their under. Theſe ſmall leaves contract themſelves together on their being touched, but the foot-ſtalks do not decline at the ſame time, as thoſe do which are titled Humble Plants, this therefore is called the Senſitive Plant by way of diſtinction. The flowers are produced upon long foot-ſtalks, which come out from the wings of the leaves, and are diſpoſed in globular heads which nod downward; they are yellow, and all thoſe which have petals have ten ſtamina in each, but thoſe ſituated round the border have neither petals nor ſtamina; thoſe on the upper part of the ſpike are ſucceeded by pods an inch and a half long, and a quarter of an inch broad, which change to a dark brown when ripe, incloſing three or four compreſſed, ſhining, black ſeeds.

[The ſtem has callous dots irregularly diſpoſed on it. The leaves are four-paired, with a depreſſed gland between the firſt pair. Leaflets twenty-paired. Peduncles with two, alternate, half-cordate bractes. Spikes oblong. All the florets ten-ſtamened, the lower ones male and caſtrated. Corolla five-petalled [e]. Browne calls it the larger ſmooth Senſitive, and ſays that it has been introduced into Jamaica from ſome other part of the world, probably from the Continent of America.]

28. Stems ſeldom more than two feet and a half high, and ſmooth. Leaves compoſed of three or four pinnas, which are ſhorter, and the leaflets much narrower than in the 23d and 27th ſorts: the heads of flowers are ſmaller, and the pods longer and narrower. It grows naturally in all the iſlands of the Weſt Indies, where it is called the Slothful Senſitive Plant, becauſe the leaves do not contract on being touched.

[The flowers are made up of many long white filaments, forming all together a round head. Pods flat, an inch long, and a quarter of an inch broad, with a round protuberance at each ſeed [f].

29. This is a lofty tree, with an upright ſmooth trunk, covered with an aſh-coloured bark. Branches diverging, bent down, ſmooth. Partial leaves twelve-paired. Univerſal petiole round, ſtriated, ferruginous-pubeſcent: partial petioles alſo ferruginous. Glands roundiſh, concave, between the petioles. Sealelets bifid, minute, at the baſe of the partial petioles. Pinnas ſixteen or eighteen-paired, halved, ſubſeſſile, acute, entire, ſmooth. Spikes pedunculed, ſubglobular, compoſed of aggregate, ſeſſile, white flowers. Peduncles axillary, ſlender. Corolla three times as long as the calyx, with a five-toothed border of a whitiſh fleſh-colour. Filaments monadelphous, twice as long as the corolla. Legume ſubcylindric, curved, twiſted, red, four or five inches long: valve blood-red within. Seeds ſpherical, ſhining-black [g].

Branches, petioles and peduncles rough-haired. Leaves ſeven-paired, with ſeventeen-paired leaflets; the loweſt ſmaller. Above the knee of the partial leaves a two-parted ſcale. Spike ovate. Flowers in bundles, one-petalled, five-cleft, monadelphous, many-ſtamened. Stamens fleſh-coloured, very long. There is a variety which is ſmooth, with leaflets from twelve to fourteen, and twenty-ſeven pinnas [h].

In Jamaica, where it is found in moſt parts of the iſland, it is called *Maſcotah* or *Wild Tamarind Tree*; it grows to a very conſiderable ſize, and is looked upon as an excellent timber wood [i].

It is a native not only of the Weſt Indies, but alſo of Japan and China.

30. This is a tree with a ſmooth aſh-coloured bark; the branches as it were in whorls, tuberous at the baſe, nodding at the end. Leaves bipinnate; the common petiole patulous and the partial ones tuberous at the baſe. The primary petiole near the baſe ſuſtains a gland, or hemiſpherical ſhining tubercle. Above the baſe of each ſecondary petiole are alſo two other glands, which are oppoſite and horned; one of theſe is frequently wanting, and the firſt pinnule occupies its place. Pinnules oppoſite, from eight to twelve-paired, ſeldom twenty-five in number, without any odd one. Theſe leaflets are unequal-ſided, paler and ſomewhat veined on the upper ſurface, on very ſhort petioles, and terminated by a ſlender point. Stipules linear, patulous, ſoon falling. Peduncles from ſome of the ends of the young ſhoots, and having tubercles diſpoſed in a ſort of ſpiral line. From each tubercle come out two peduncles in an angle of about ſixty degrees, each ſupporting from ſixteen to twenty flowers in a ſpherical head. Flowers all perfect: one in the

[a] Houſt. reliq. [b] Vahl. [c] Linn. from Miller. [d] Horſt. kew. [e] Linn. [f] Sloane. [g] Swartz. [h] Linn. [i] Browne.

middle larger than the reſt, with a one-leafed, five-cleft calyx; a tubular, five-cleft corolla, with ovate, concave ſegments, the tube twice or near thrice as long as the calyx, ſomewhat villoſe, and when examined by a magnifier appearing to have lucid dots ſcattered over it; from the bottom of this the nectary, ſtriated, ſmooth, bearing the ſtamens on its edge, as in monadelphous flowers. In the bottom of this tube lies the germ, which is lanceolate, ſubſeſſile, green, ſmooth; the ſtyle is ſlender, long and white; the ſtigma blunt, appearing rough with very minute papillæ, when examined with a glaſs. The other flowers are ſmaller, and ſcarcely one or two of theſe produce fruit. The ſtamens are five times as long as the corolla, ſlender, ſtraight, fleſh-coloured, from twenty to twenty-eight in number. Filaments connate at the baſe into a tube. Anthers green, compoſed of two globules, in which are ſmall, pellucid, ſpherical particles. Fruit four to ſeven inches long, and an inch wide; pedicelled, flat, drawn to a point at both ends, margined, yelloviſh on the outſide, firſt greeniſh and then white within, and never opening. From both ſutures ſpring branched nerves, and the edge is ſlightly repand, ſometimes ſinuated here and there. Seeds elliptic, four lines long, of a reddiſh brown colour, moderately compreſſed, ſharp at one end and rounded at the other, marked on both ſides with one or two little excentrical pits and two raiſed lines forming an elliptical area: they are from ſeven to twelve in number, and faſtened to one ſuture by a ſlender twiſted thread, three lines in length, but they break looſe when ripe, and move about if the pod be ſhaken. This has been confounded with the preceding [1].

Native of the Levant. Introduced about 1745, by Richard Bateman, Eſq. It flowers in auguſt [2].

31. Native of Jamaica [3].

32. Leaves deſtitute of glands. Pinnas from twelve to twenty, an inch in length. Bundles of flowers pedunculed. Legume a ſpan long [4]. It is cultivated in the gardens at Cairo, where it flowers in june, and becomes a large tree; but Haſſelquiſt does not aſcertain whether it be a native of Egypt. Linnæus however and Forſkahl give it as indigenous of Upper Egypt. The Arabs call it *Lebbeck*, which Linnæus has adopted for the trivial name of the ſpecies.

33. This is a looſy tree, with villoſe ſomewhat hoary branches, and hoary petioles. Leaves large, three or four-paired, with glands towards the lower pinnas and within the upper ones. Pinnas many-paired: leaflets obliquely oblong, very ſmooth above, hoary beneath. Panicles axillary, three, elongated, large, diffuſed: the pedicels terminating in globular ſpikes. Flowers white, very fragrant. Legumes flat, coriaceous, much reſembling thoſe of M. latiſiliqua, but narrower and leſs waved [5]. Vahl remarks, that there is an oblong, ſeſſile gland near the baſe of the general petiole, and frequently two or four pedicels from the ſame point.

Native of the iſland of Ceylon.

34. This is a very elegant tree, quite ſmooth all over. Trunk round, with an even aſh-coloured bark, marked with tranſverſe ferruginous little warts. Leaves ſmooth, alternate: rib roundiſh, about a foot long, having a little above its origin an oval, ſeſſile, conſpicuous gland. Pinnas oppoſite, moſtly four on each ſide, nine-paired or thereabouts, without an odd one. Pinnules oblong, obſcurely ſickle-ſhaped, very blunt, quite entire, on very ſhort petioles, oppoſite, flat, an inch long. Peduncles three inches long, either ſolitary or a few together. Flowers numerous, ſeſſile or on very ſhort peduncles, extremely ſweet, in a handſome head, at the top of which is one flower, different from the reſt and abiding longer, which is probably the only fertile one, though all appear to be hermaphrodites. Calyx yellow. Corolla herbaceous [6].

35. This is a middle-ſized tree, with ſpreading branches. Leaves four or five-paired; the partial ones four-paired: leaflets ovate, acute, incurved, ſmoothiſh: petioles linear, ſhort, pubeſcent [7]. Flowers umbelled, many-ſtamened, with tomentoſe calyxes, according to Linnæus:—white, ſubterminating, in a panicle terminating in heads, and about twenty ſtamens, longer than the corolla, according to Loureiro.

Native of the Eaſt Indies, Cochinchina, and Brazil.

36. This alſo is a middle-ſized tree, with ſpreading branches. Leaves many-paired: leaflets commonly eight-paired: the common petiole thickened at the baſe, and propped by a recurved callous hook. The male flowers are many-ſtamened and monadelphous, with four-cleft calyxes and corollas. Panicle terminating, ending in duſtiſh cymes of white flowers. Loureiro did not ſee any hermaphrodite flowers.

Native of China, near Canton.

37. Native of the Weſt Indies [8].

38. Bractes half-cordate. Peduncles in threes. Flowers in heads. An obſolete gland on the common petiole below the partial pinnas. Germs globular, two-valved; with two, roundiſh, concave or hemiſpherical leaflets. Leaves very ſmooth [9].—Native of the Weſt Indies. Introduced in 1777, by Daniel Charles Solander, L. L. D. It flowers moſt part of the ſummer [10].

39. This plant, which becomes a tree itſelf, climbs up other trees, overtops them, and drags them down by its weight. The trunk is round, covered with a brown bark, and often nine inches in diameter. Partial leaves on each ſide commonly three or four, of which the two end ones, after they have dropped their leaflets, are changed into very ſtrong tendrils, which entwine the branches of any neighbouring tree, and adhere to it ſo cloſe, that they can ſcarcely be ſeparated. The proper leaflets are commonly ſeven on each ſide, oblong, blunt, emarginate. Particular ſpikes cloſe, two inches long, turned upwards and erect, about thirty together on the ſame common pedunculc, which is a foot long and ſtretched out horizontally. Flowers ſmall, herbaceous, about 150 on each particular ſpike, ſo that in the whole compound ſpike there are about 4500. To this multitude of flowers, many of which are male, ſcarcely ten legumes ſucceed, and theſe very ſeldom arrive at maturity.

Native of the Weſt Indies, where it is a great nuiſance to the ſugar planters by deſtroying the trees which they ſet to ſhelter their ſugar grounds [11].

40. This is an upright tree, about twenty feet in height, with branches ſtretched out horizontally. Spines awl-ſhaped, acuminate, ſtrong, ſubaxillary, five-lined. Leaves axillary, with the common petiole two inches long, and a ſmall, oblong, blunt, upright gland a little above the baſe. Partial pinnas an inch long: leaflets oblong, blunt, ſcarcely three lines in length. Spikes globular, axillary, ſolitary, turned upwards, on a pedunclc an inch in length. Flowers white, void of ſcent [12].

Native of Jamaica and other iſlands of the Weſt Indies; and about Carthagena in New Spain. Frequent in the iſland of Mango.

41. Peduncles long, bearing many ſpikes. Native of America [13].

42. This ſhrub riſes frequently to the height of fourteen or fifteen feet or more. It is not ſo prickly as the *tortuoſa*, (n. 56.) and its leaves are rather larger. It is of a ſpreading growth, and furniſhed with oblong flower-ſpikes, and very long legumes. It has been introduced into Jamaica from the continent, and thrives very luxuriantly in many parts of the low lands [14].

43. Legumes ovate-oblong, flat. Native of America [15].

44. Spikes globular, large, pedunclcd. Flowers white, apetalous, ten-ſtamened [16]. Legumes long, flat. It flowers in april, and the ſeeds are ripe in autumn. It was diſcovered by Dr. Houſtoun at La Vera Cruz, and ſent to Europe by him in 1729 [17]. But it had been cultivated before, in 1690, in the Royal garden at Hampton Court [18].

45. Branches unarmed, ſmooth, obſcurely angular at top, having a few ſmall dots ſcattered over them. Leaves twenty-four paired, the inmoſt ſmaller. Leaflets fifty-paired and more. Pinnas minute, ſmooth, veined when inſpected by the magnifier, acute. Petioles channelled

[1] Scopoli. [2] Hort. kew. [3] Swartz. [4] Linn. [5] Linn. ſuppl. [6] Jacquin. [7] Loureiro.

[8] Loureiro. [9] Swartz. [10] Linn. [11] Hort. kew. [12] Jacquin. [13] Idem. [14] Linn. [15] Browne. [16] Linn. [17] Idem. [18] Mill. fig.

channelled above, ſmooth, purpliſh at the baſe. Gland oblong, brown, towards the baſe of the petiole and between the two or three outer pairs, hollow. Stipules briſtle-ſhaped. The lower ſpikes axillary, ſimple, ſolitary, ſhorter than the leaf; the upper ones ſubracemoſe, in pairs, two inches long. Flowers alternate, approximating, numerous. Calyx ſmooth. Legume a little compreſſed, an inch long, linear-lanceolate, ſurrounded longitudinally by a membrane.

It has the appearance of M. Catechu, but differs in having no ſpines, ſhorter ſpikes, and the calyxes ſmooth not hoary.

Native of the Iſle of France[m].

46. This is very nearly allied to M. Houſtoni, but differs from it in having more frequent pinnules, and the leaflets very diſtinct, ovate at the baſe; whereas in M. Houſtoni they are confluent at the rachis, truncated at the baſe, and reſemble a pinnatifid leaf.

Native of the Eaſt Indies[n]. Introduced about 1769, by Mrs. Norman. It flowers from june to ſeptember[o].

47. Leaves hairy underneath. Inflorescence as in M. grandiflora, but the flowers ſmaller. Corollas viſcoſe, permanent. Legumes parallelogram-ſhaped, acuminate, flat except where the ſeeds are, very tomentoſe, ruſous. Seeds oblong, compreſſed, with a zone on each ſide, inſerted into both margins of one of the ſutures.

This is the true Gleditſchia inermis of Linnæus, for which Duhamel, Du Roi and others have taken an unarmed variety of Gleditſchia triacanthos[p]; which ſee in this Dictionary.

It is one of the moſt beautiful ſpecies of the genus. The petals being very large, and of a fine purple colour, with their ſtamens ſtretched out to a conſiderable diſtance beyond the petals, the flowers make a charming appearance when the trees are covered with them; and when the pods, which are ferruginous, are ripe and hanging plentifully from every bough, the view of the trees is very pleaſing from a ſmall diſtance. The ſeeds were ſent to Europe from La Vera Cruz, by Dr. Houſtoun[q].

48. Stem branched, even. Spines either terminating the branches, or ſolitary from the axils, ſtraight and long. Leaves lanceolate, very ſlender, ten-paired: leaflets twenty-two-paired. Spikes of flowers oblong, ovate or cylindrical, pedunculed, axillary, ſolitary. There are no prickles on the plant[r].

Native of the Eaſt Indies.

49. This tree ſeldom exceeds twelve feet in height. It has numerous branches forming a pyramidal figure. Leaves ſmall. Flowers alſo ſmall, yellow, and void of ſcent, in a cloſe cylindrical ſpike, an inch and half long. Legumes coriaceous, containing a buttery pulp, in which the ſeeds are rolled up. The ſpines are very ſingular, they are ſubaxillary and connate at the baſe, reſembling the horns of oxen; they are brown, ſhining, hollow, and the longeſt are more than five inches in length; they are all over the tree, and when the pods are ripe and the leaves are fallen, they have a ſingular appearance. A ſort of ant lodges in theſe thorns in innumerable quantities, and if the tree be ſhaken ever ſo little, they fall down like a ſhower of rain and attack the paſſenger. This tree grows every where in the woods about Carthagena; flowers in june and july, and the ſeeds ripen in ſeptember[s].]

Mr. Miller ſays the ſpines are extremely large and crooked, and of a whitiſh colour, that the flowers appear to have little beauty in them, and that the branches growing deformed, and being but thinly ſet with leaves, even in their greateſt vigour, and deſtitute of them during ſeveral months, the tree does not make a good appearance, but is chiefly ſingular on account of its writhed ſpines. He obſerves that it is rare in England. [It was cultivated in 1691, in the Royal Garden at Hampton Court[t].

50. This is a ſmall tree, growing to twelve feet in height, and one foot in diameter; it is covered with a thick rough brown bark, and towards the top divides into many cloſe branches. Leaves alternate: partial pinnæ near two inches long, commonly from fifteen to thirty pair, having ſmall glands between them: each wing has uſually about forty pairs of linear leaflets, beſet with ſhort hairs. Spines ſhort, recurved, in pairs at the baſe of each leaf. Flowers hermaphrodite and male, in cloſe axillary ſpikes, four or five inches long. Calyx tubular, hairy, dividing into five oval pointed ſegments. Corolla whitiſh, twice the length of the calyx. Filaments twice the length of the corolla, adhering at the baſe of the germ, which is oval. Pod lanceolate, brown, ſmooth, compreſſed, with an undulated thin margin. Seeds ſix or eight, roundiſh, flattened, producing a nauſeous odour when chewed.

An Indian drug, long known by the name of Terra Japonica, and now more properly called Catechu (from *Cate*, a tree, and *Chu*, juice,) is now aſcertained to be the produce of this tree. This extract in its pureſt ſtate is a dry pulverable ſubſtance, outwardly reddiſh, inwardly ſhining dark brown, tinged with a reddiſh hue: to the taſte it diſcovers conſiderable aſtringency, ſucceeded by ſome ſweetneſs. It diſſolves almoſt wholly in water, except the impurities, which are uſually ſandy, and amount to about one-eighth of the maſs. Rectified ſpirit diſſolves about ſeven-eighths into a deep-red liquor. It may be uſefully employed as an aſtringent, eſpecially in alvine fluxes; alſo in uterine proſtuvia, in debility of the viſcera in general, in catarrhal affections, &c. This extract is the baſis of ſeveral formulæ, but the beſt way of taking it is in an infuſion in warm water with cinnamon or caſſia.

Native of Indoſtan, plentifully in the mountains[u].

51. Branches angular, ſmooth, with a brown bark. Leaves ſometimes two from the axil of the ſpines: partial four or five-paired, inner ſhorter, with leaflets from five to ſeven-paired, outer eight to eleven-paired: leaflets linear, acute, ſmooth. Spines in pairs white, purple at the tip. Flowers in a globular head, axillary and ſolitary, firſt ſeſſile then pedunculed, ſhorter than the leaves. Legumes compreſſed, attenuated at the baſe[v].

Native of the Eaſt and Weſt Indies and Arabia.—Linnæus remarks, that in the American plant the heads of flowers are globular and pedunculed, as in M. tortuoſa, but that there is a minute two-valved bracte in the middle.

52. This is a large tree, with ſpreading branches, and large branched ſtraight ſcattered ſpines. Leaves unequally pinnate, commonly five-paired; with oblong-ovate, emarginate, ſmooth leaflets. Flowers pale, in long, lateral, ſcattered ſpikes: males many, more ſlender; hermaphrodites fewer, at the baſe of the ſpike. Corolla five-cleft. Stamens ten. Legume eight inches long, curved, flat, ſmooth, brown. Seeds many, ovate, compreſſed.

Native of China and Cochinchina; where it is alſo planted for hedges, which are impenetrable by animals[w].

53. This is a ſmall tree, remarkable alſo for its tremendous ſpines, at the ends of the branches, next the flowers, where there are no leaves; they are two inches long, connate at the baſe, very ſtraight, round, compreſſed as in M. cornigera, ſhining very much and whitiſh like ivory, red at the tip. The ſpines on the lower part of the ſtem are very ſhort. Leaves four-paired. Leaflets ſmall, aſh-coloured, ſix-paired. Peduncles from four to eight in the axils of the ſpines, each terminating in ſmall, yellow globules of flowers. Native of the Eaſt Indies.

54. This is a very thorny, branching, depreſſed ſhrub. Branchlets flexuoſe, interwoven, ſmooth, with whitiſh dots. Leaves very ſmall. Spines ſhining, the colour of milk, over all the branches, long, very ſtraight, divaricating. Spikes axillary, elongated, commonly in pairs, ſeldom ſolitary. Flowers white. Legume compreſſed, half-mooned.—Native of the Eaſt Indies: found by Koenig abundantly at the foot of Tripully mountain, between Tanſchu and Tirut Schinapally.

Theſe thorny Mimoſas, with their interwoven

[m] Vahl. [n] L'Heritier. [o] Hort. kew. [p] L'Heritier. [q] Mill. fig. [r] Linn. zeyl. [s] Jacquin. [t] Hort. kew. [u] Woodville, Kerr, in med. obſ. 5. 151. [v] Vahl from Forſk. [w] Loureiro.

branches

branches and terrible thorns, form impenetrable thickets in the mountainous parts of India, and are the ſecure retreat of ſmaller animals, birds and rogues [a].

55. Stem ſhrubby, branched, three feet high, covered with a reddiſh bark, rugged, very hairy, eſpecially when young, as are alſo the petioles and pedunicles. Leaves alternate: leaflets ſeventy and more, ovate-oblong, one-nerved, wider on one ſide of the baſe, and hence approximating ſo as to reſemble the leaves of Fern. Stipules awl-ſhaped, ciliate, withering. Flowers in pedicelled heads diſpoſed in a panicle. Calyx one-leafed, whitiſh, very ſmall, five-notched at top. Corolla white, with five ovate petals, double the length of the calyx. Filaments very numerous, white, in a diverging bundle, much longer than the corolla. Germ ovate-oblong, compreſſed, acuminate.

Native of Mexico. It flowered in the royal garden at Madrid in october. It approaches to M. filicifolia of Lamarck; (Dict. 1. 13.) and perhaps alſo to M. peregrina of Linneus [b].—This ſpecies ſhould have been placed after n. 43.

56. This is a ſhrub, with a branching ſtem. Branches diffuſed, ſubdivided, flexuoſe, ſmoothiſh, ſpiny, with a brown bark. Spines in pairs, almoſt united at the baſe, ſtretched out, half an inch long. Leaves three or four from one point, alternate: partial ones two-paired or three-paired: pinnas twelve to ſixteen, lanceolate, bluntiſh, entire, ſmooth. Univerſal petioles round, filiform, reddiſh; partial petioles angular. Glands ſolitary, brown, in the middle of the univerſal petioles, below the leaflets. Flowers pedunicled, in heads, yellow. Peduncles ſolitary, above the ſpines among the leaves half an inch in length, bent down. Filaments monadelphous, twenty to twenty-four, upright, yellow. Germ ovate, minute. Legume horned, roundiſh, toruloſe, drawn to a point at both ends, beaked, black. Seeds obovate, black, compreſſed a little.

Between the outer coat of the pod and the inner membrane ſeparating the ſeeds, there is a liquor of the conſiſtence and colour of a ſyrup, which ſmells very ſtrong, and is bitter and aſtringent. Browne ſays, that this would prove an excellent medicine, where rough aſtringents are requiſite. The whole plant is bitter, and the flowers have a very ſtrong ſmell [c]. Indeed the ſmell of all the parts is ſo rank and diſagreeable, that it cannot be uſed even for fire-wood. It is chiefly uſed for hedges. The cattle are ſaid to browſe upon the tender ſhoots in dry weather, and their milk thereby becomes rank.

Native of Jamaica, where it is common in the low lands, and is called the common Acacia or Acacee-buſh [d].

57. Flowers many-ſtamened, very fragrant, yellow, in ſeſſile heads [e]. Vahl ſays they are always pedunicled in the South of Europe and Barbary; and Loureiro informs us that they are ſo in Cochinchina. The petioles have a gland below the leaflets. The legumes are fuſiform [f].

Native of St. Domingo and other iſlands of the Weſt Indies, as Jamaica, Barbadoes, &c. according to Miller; alſo of Barbary, Egypt, and Cochinchina, at leaſt in a ſtate of cultivation.]

For the ſweetneſs of its flowers it has been diſperſed through moſt parts of Europe, has been made familiar to the Italian gardens, ſince it was introduced into the Farneſe garden in 1611, and is cultivated in great plenty in Spain and Portugal. The Italian gardeners, who bring over orange-trees, &c. bring alſo many young plants of this to England, under the name of Gazia. [It was cultivated in 1731, by Mr. Miller, and flowers from june to auguſt [g].]

58. This tree arrives at a large ſize in countries where it grows naturally, but in England is rarely ſeen more than eight or ten feet high. [It has the habit of M. farneſiana and Senegal; from the firſt it differs in having no callous dots upon the branches; from the ſecond, in having the bark by no means white, but purple: nor has it ſpines in threes, like M. Senegal, but in pairs, and longer than thoſe of M. farneſiana. Branches purple, even. Partial leaves about five pairs; between two pairs of the outer ones a gland is inſerted into the common petiole. Legumes necklace-ſhaped, compreſſed: the joints roundiſh-rhomb-ſhaped. Flowers many-ſtamened in peduncled heads. A gland between the outer pair of the partial leaves. Native of Egypt and Arabia. This is the tree which yields the Gum Arabic [h]. It was cultivated here in 1664 [i].

According to Haſſelquiſt, the Arabs call it Charad, and it is this, not M. Senegal, that produces Gum Arabic, Frankincenſe, and Succus Acachæ.

This ſpecies and Mimoſa Senegal growing together promiſcuouſly, the latter having by chance been brought to Europe inſtead of the former, and Proſper Alpinus not having diſtinguiſhed them, M. Senegal was generally believed to be the tree that produced the above-mentioned gums: but the genuine tree was known only to thoſe who cultivated it in Egypt, where they call the true one *Charad*, and the other, which is of no value *Feine*. They both grow in Lower Egypt, where they are planted in gardens, but they grow wild in the ſandy deſert, near the ancient ſepulchres of the Egyptians, and this, or Acacia vera is ſaid to grow plentifully in ſeveral parts of Upper Egypt. The gum is gathered in vaſt quantities from the trees growing in Arabia petræa, near the north bay of the Red Sea, at the foot of mount Sinai, whence is brought the Thus, ſo called by dealers in drugs in Egypt from Thur or Thor, which is the name of a harbour in the north bay of the Red Sea, near mount Sinai; thereby diſtinguiſhing it from the Gum Arabic, which is brought from Suez, not far from Cairo. The gum Thus is alſo more pellucid and white; whereas Gum Arabic is of a brown or dirty yellow colour and generally opaque [k].

59. Branches round, ſmooth, with a thorn on each ſide by the petiole. Leaves ten-paired: leaflets thirteen-paired, oblong, rounded at both ends, equal on both ſides. Common petiole with a pair of oppoſite recurved prickles underneath to each pair, and an upright prickle above. Peduncle axillary, a ſpan and half in length, villoſe above. Flowers in a compound raceme, numerous, ſpreading, ſcattered, on pedicels the length of the flowers. Calyx five-leaved; leaflets ovate, acute. Petals five, lanceolate. Filaments ten, diſtinct, a little longer than the corolla. Germ oblong. Style longer than the ſtamens. Stigma ſimple, blunt. Legume compreſſed, membranaceous, lanceolate.—Native of Arabia [l].

Loureiro has given the name of *ſtellata* to a ſpecies very different from this, and which Willdenow ſuppoſes may be the ſame with M. verticillata, n. 1.

60. The ſtem has recurved prickles ſcattered over it in pairs. Leaves commonly ſix-paired, with many-paired pinnas. On the univerſal petioles there are recurved prickles between each of the partial ones; and there is a ſtraight upright prickle which is longer, between each pair of the partial ones, in place of a gland. Heads globular. Legumes membranaceous-compreſſed, jointed, rugged.—Native of South America [m].]

61. This has a ſhrubby erect ſtalk about five feet high, hairy and armed with ſhort, broad, ſtrong thorns, which are white, ſtanding on each ſide, almoſt oppoſite, or alternate. Leaves five or ſix-paired, with a ſtrong midrib, and between each pair two ſhort ſtrong ſpines, pointing out each way. Leaflets extremely narrow and very cloſe. Towards the upper part of the ſtalk the flowers are produced from the ſides on ſhort peduncles; they are collected into globular heads, and are of a bright purple colour; the ſtalks are alſo terminated by ſmaller heads of the like flowers. Pods flat, jointed, about two inches long, and a quarter of an inch broad, ſpreading like rays, there being commonly five or ſix joined together at the baſe; they ſeparate at each articulation, leaving the two ſide membranes or borders ſtanding. The ſeeds, which are

[a] Linn. ſuppl. [b] Cavanilles. [c] Swartz. [d] Browne. [e] Linn. [f] Idem. [g] Hort. kew. [h] Linn. [i] Hort. kew. from Evelyn. [k] Haſſelquiſt, Engl. edit. 250. [l] Vahl. [m] Linn. amoen.

compreſſed

compreſſed and ſquare, drop out from the joints of the pods, which are hairy at firſt, but as they ripen become ſmooth. The petioles do not fall on being touched, but the leaflets cloſe up.

[Linnæus remarks, that the whole plant is rough-haired except the pinnas. The leaves often fourteen-paired, with many-paired leaflets. An upright awl-ſhaped ſpine between each pair of partial leaves; and two ſtout recurved ſolitary oppoſite ſhorter prickles between each pair of partial ones. Legume compreſſed, with ſtiffiſh pale-red hairs [a].

According to Browne, it riſes commonly to the height of ſeven or eight feet. The ſmaller branches and ribs are full of ſhort recurved thorns; and each rib again emits a number of long ſlender prickles, from the inter-ſpaces of its foliations, or ſmalleſt ribs, which, like ſo many needles, guard the tender leaves. The branches are moderately thick, but the leaves are ſmall, and very apt to move on every occaſion. The pods are compreſſed and hairy, and when ripe divide into as many parts as there are ſeeds, which fall off ſeparately; theſe parts, in the natural ſtate are held between two ribs, that run along the margins of the pod, in the inner grooves of which they move with great eaſe, when contracted and detached from each other.]

Native of Vera Cruz, where it was found by Dr. Houſtoun. [Browne ſays it was introduced into Jamaica from the main continent. Mr. Miller cultivated it before 1733.

Swartz affirms, that this and the preceding ſpecies are not diſtinct, but only varieties.

62. This is diſtinguiſhed at firſt ſight by its white bark. The ſpines at the baſe of the leaf are three, and not two, as in M. niloutica [b].

Native of Africa.

63. Leaves blunt, broad, of five, ſix or ſeven pairs of leaflets: each leaflet of from twelve to ſixteen pairs of pinnas. Gland oblong, above the baſe of the petioles. Prickles recurved, ſcattered on the ſtem and petioles. Peduncles ſimple, lateral. Panicle prickly with the flowers in heads [c].

Native of the Eaſt Indies. Introduced in 1773, by Sir Joſeph Banks [d].

64. Fruteſcent. Paniele very much branched, naked, terminating the ſtem and branches. Prickles ſmall, ſcattered over the ſtem and panicle. Leaves having from twelve to twenty pairs of partial leaves, with an oblong melliferous pore at the baſe of the general petiole. Leaflets linear and almoſt capillary. No prickles on the petioles or peduncles. A gland above the baſe of the petioles [e].

Loureiro deſcribes it as a large procumbent branching ſhrub, with many ſhort ſcattered prickles. Leaves more than ten-paired, with about forty pairs of leaflets. Flowers white, polygamous, in a vaſt diffuſed terminating panicle, of very many ſmall globular heads. Calyx four-toothed. Corolla none. Stamens above one hundred, very ſlender.

Native of the Eaſt Indies, and of Cochinchina, where the bark is converted into a ſort of tow, which is uſed for ſtopping cracks both in houſes and boats. Introduced in 1773, by Sir Joſeph Banks [f].

65. Branches obtuſe-angled, even. Prickles at the angles, recurved, ſcattered; and two, a little larger, under the ſtipules. Leaves four-paired. A gland between the loweſt partial leaves. Partial leaves twelve-paired. Pinnules blunt, curved in a little. Prickles recurved, ſcattered, under the common petiole: and rudiments of little prickles among the partial leaflets [g].

Native of the Eaſt Indies. Introduced in 1778, by Patrick Ruſſell, M. D.

66. Native of America.]

67. This has a creeping root. Stalks ſlender, having four acute angles, armed pretty cloſely with ſhort recurved ſpines. Leaves on long prickly ſtoot-ſtalks, and thinly placed on the branches. Wings two pairs, about an inch aſunder, ſhort: leaflets narrow, not very cloſe. Peduncles axillary, ſuſtaining a ſmall globular head of purple flowers. Legumes four-cornered, two inches long, four-celled, four-valved; containing ſeveral angular ſeeds in each cell.

Found at La Vera Cruz by Dr. Houſtoun, [and cultivated by Mr. Miller before 1733. It ſeems to be originally of Africa, and to have been carried to America by the ſlaves.

68. This was at firſt conſidered as a variety of M. pennata. It is ſet down by miſtake as a native of Ceylon, for it is from South America.

69. There are recurved prickles on the ſtem and petioles. Pedunckes lateral, cluſtered, headed. Legumes blunt, with a prickly ſuture.—Native of South America [h].

70. Branches with few recurved prickles. Leaves four or five-paired. A gland between the loweſt partial ones, which are twelve-paired, but the loweſt pinnule wants the oppoſite on the inſide. On the common petiole are two remote prickles, underneath between each partial ones. Stipules wide, acuminate, purple. Legumes very wide [i].—Native of America.

71. Stem ſhrubby, long, branched, prickly. Pinnas linear, many, very ſmall. Peduncles long, ſuſtaining ſmall, globular heads of flowers. Calyx ſlightly four-cleft, with rounded ſegments. Corolla none. Legume long, ſtraight, ſinuous, compreſſed. Seeds oblong, flattiſh.—Native of Cochinchina, in woods.

72. This is an arboreous ſhrub, with ſpreading unarmed branches. Leaves ſome unequally pinnate, others bigeminate: leaflets ovate, acuminate, petioled. It ſeems to be allied to M. bigemina.—Native of Cochinchina, in woods.

The bark yields excellent ſoap [k].]

73, 74, 75. Theſe are not deſcribed by Miller in his Dictionary. They were found by Houſtoun in South America.

The laſt of them is one of the moſt ſingular ſpecies yet known, the ſpines being ſpread open and flat, appearing as if ſplit lengthwiſe. The leaves are very beautiful, but the flowers being ſmall and of an herbaceous colour, make no great appearance. In the natural place of its growth this tree produces flowers almoſt through the year, and a ſucceſſion of pods is generally found on it, but the ſeeds are commonly eaten by inſects before they come to maturity [l].

[76. Trunk ill-ſhaped. Bark aſh-coloured, pretty ſmooth. Branches numerous, ſomewhat twiggy: young ſhoots winding and often bent back. Thorns ſtipular, ſuberect, ſharp, but not long. Leaves alternate, twice-double: leaflets obliquely oblong, ſmooth, pointed, about an inch long. Petioles and petiolets end in a ſharp point. Panicles terminating, thin, oblong, compoſed of diverging racemes of ſhort pedicelled ſmall globular heads of white corollets. Filaments numerous, united below into a tube. Legume ſwelled, particularly at the ſeeds, twiſted like a ſcrew, a little downy, the valves themſelves thin, almoſt membranaceous; when ripe they open naturally, and expoſe to view much roſe-coloured firm lobated fleſhy pulp, in which the black ſhining ſeeds are hid.

This is probably not a native of India, but was introduced from the Philippine iſlands, for the ſake of the pulp which fills the legumes. It grows quickly to a tree, a rich ſandy ſoil ſuits it beſt, and it flowers in the cold ſeaſon.

The fleſhy pulp of the legumes is reckoned wholeſome; it is ſweet, but inſipid and dryiſh. The Spaniards at Manilla raiſe many of the trees for the ſake of this pulp, and call it Sappan-fruit. It would aſſiſt the poor in times of ſcarcity in thoſe countries, and the gum, wood and bark may turn to account there. As it grows very faſt, it may alſo be reared for fences, inſtead of many leſs uſeful buſhes and trees.

77. Trunk ſtraight. Bark brown, pretty ſmooth. Branches numerous. Leaves ſcattered about the extremities of the branchlets, in pairs. Leaflets oppoſite, without an odd one, from two to four pairs, with a ſingle one below the pairs on the outſide: they are

[a] Linn. [b] Idem. [c] Linn. ſuppl. [d] Hort. kew. [e] Linn. ſuppl. [f] Hort. kew. [g] Hort. kew. [h] Linn. mant. [i] Linn. ſpec. [k] Linn. mant. [l] Loureiro. Mill. fig.

entire,

entire, oblong, ſmooth on both ſides; the outer pair largeſt, about five inches long and two broad; thoſe below are little more than half that ſize. Common petiole ſhort, with a large brown gland: partial petiole round, with a ſimilar gland between each pair of leaflets. Stipules lanceolate. Peduncles axillary, two to four; two to three inches long, each ending in a globular head of fragrant florets. Filaments ten, diſtinct, inſerted into the bottom of the tube. Legume broad-ſickle-form, exceedingly hard and heavy; the outſide covered with brown farina; about ſix inches long, and three broad. Seeds about ten, brown, ſmooth, each about as large as a kidney-bean.

This is one of the largeſt ſpecies of the genus. It is a native of the mountainous parts of the Circars only; caſting its leaves during the cold ſeaſon, and flowering at the beginning of the hot ſeaſon.

The wood of this tree is of a chocolate-colour towards the centre. The natives eſteem it much, and uſe it for many purpoſes, where hard durable tough timber is required; for plough-heads it is particularly in requeſt, the Telingas ſeldom uſing iron in their ploughs [a].

78. Height three or four feet. Branches alternate, upright, angular, with a very tough ſmooth bark. Leaves of the young ſeedlings in pairs and pinnated, with oval leaflets: but when the ſtem riſes, the common footſtalks of its leaves become dilated, the leaflets ceaſe to appear, and the whole ſhrub is furniſhed only with ſuch dilated naked footſtalks, which are to all intents and purpoſes leaves: they are alternate, vertical, ſmooth, firm and glaucous. Stipules none. On their upper edge near the baſe a ſmall concave gland. Racemes axillary, ſolitary, erect, of about ſix alternate heads, each having three or four ſmall white flowers. The calyx has only four ſegments, and the corolla four petals. Germ roundiſh. Pod linear, pointed, zigzag, brown, with a very thick margin. Seeds about ſix, oblong [b].

The flowers on the young branches are very numerous, and fragrant like thoſe of Spiræa Ulmaria.

Mr. Hoy raiſed it from ſeeds brought from New South Wales, in Sion gardens, belonging to his Grace the Duke of Northumberland; and it flowered there in 1790 [c]. It produced ripe pods and perfect ſeeds in the ſtove of Cheliea garden, in may 1795; but in the greenhouſe the flowers go off without any tendency to produce fruit. It is a ſhrub of quick growth and a ready blower [d].

Mr. Curtis remarks that the foliage is uſually edged with red, and that he did not obſerve the leaves to be glaucous or very much undulated.

79. The branches of this are moſt acutely triangular, and much compreſſed; their edges bright red. Leaves alternate, four or five inches long, with a rib and margin like the laſt. Flowers in axillary racemes, yelloviſh white, fragrant. Petals four. Stamens numerous. Young capſules ſmooth and glaucous.

This ſpecies and the preceding belong to the firſt diviſion of this genus, for the knowledge of which we are indebted to the ſouthern hemiſphere. In their adult ſtate they have leaves totally different from thoſe which they produce at firſt ſpringing out of the ground, as deſcribed in the preceding ſpecies. We have not any deſcription of the primordial leaves of M. ſimplicifolia, but it is probable that they alſo are pinnated.

This alſo flowered in Sion gardens under the care of Mr. Hoy, in the year 1790, from ſeeds brought from New South Wales [e].

80. This forms a thick rigid buſh. Branches numerous, alternate, ſpreading, round, very rough with a ſhort denſe rigid pubeſcence, eſpecially when young. Leaves alternate, apparently vertical, ſeſſile, pointed, entire, extremely harſh with minute prominent ſcattered points, eſpecially on the rib and the cartilaginous margin. Stipules in pairs, very minute, triangular, membranous. Flowers pale yellow, many together in little round heads, which ſtand ſolitary, on rough axillary peduncles ſhorter than the leaves, deſtitute of bracles. Calyx in four ſegments ciliated. Petals four, concave. Pod compreſſed, broadiſh in proportion to its length. It has much aſperity about it; whereas the other ſimple-leaved ſpecies are perfectly ſmooth. It is an inhabitant of Port Jackſon in New South Wales, and the living plant has not yet been introduced [f].

81. Native of Georgia and Carolina.

82. In the leaves this reſembles M. Unguis cati, but they are only one-fifth of the ſize. Legumes enſiform, compreſſed, not circinate. A gland at the baſe of the petiole, and not among the leaves.—Native of Egypt.

This ſhould have been placed after n. 10.

83. Branches round, purple, flexuoſe, pubeſcent. Leaves remote, on very ſhort petioles, very ſmooth, an inch and half long: the partial ones two-paired, the outer larger: the proper interior ones four-parted, the outer five-paired: pinnules ſeſſile, the inner ones ſmaller, oblong, narrower on the inner ſide, oblique at the baſe, mucronate, bright green, ſhining above. Gland orbiculate, ſeſſile between the partial leaves, purple edged with yellow. Petiole pubeſcent, terminated by a rigid ſpinule. Spines ſtipulary, oppoſite, ſtraight, ſpreading very much, ſtout, purple, paler at the tip. Peduncles axillary, in pairs, the length of the leaves, pubeſcent. Flowers eight to ten in each head.

Found by Koenig in the Eaſt Indies. This ſhould be placed after glauca, n. 44.

84. This is a tree, with round ſmooth dotted branches, and ſhort flexuoſe remote tubercled wrinkled branchlets. Leaves on the branches remote, alternate; on the branchlets approximating, ſubopppoſite or terminating. Leaflets eight or ten-paired: pinnules oblong, membranaceous, ſmooth, mucronate, the inmoſt ſmaller, thoſe of the terminating pair obovate, oblique at the baſe on one ſide. A ſmall gland between each pair of leaflets. Spines ſtipular, ſtraight, ſpreading very much, blunt. Peduncles on the branchlets, axillary, ſolitary, an inch and half long, ſhorter than the leaf, filiform, angular, erect. Flowers from twelve to ſixteen in an umbel. Calyx bell-ſhaped, five-toothed. Corolla one-petalled, twice as long as the calyx. Filaments numerous, very long, monadelphous. Legume involute-ſpiral, when young pubeſcent.

Found in Ceylon by Koenig.—Place after glauca, n. 44.

85. Branches purple, ſmooth, flexuoſe. Leaves uſually in pairs: partial ones three-paired, the outmoſt larger pinnate; the inner two or three-paired, in the ſecond pair four or five-paired: pinnules oval, the inner ones ſmaller. Petiole pubeſcent: a ſeſſile gland between the loweſt pair. Spines ſtipular, in threes, all ſtraightiſh, the middle one ſhorter.

It differs from M. Senegal by its purple branches, ſtraight ſpines, and fewneſs of pairs to the leaves; in that the leaves are many-paired and wider, and the petiole is terminated by a recurved prickle.

Native of Arabia [g].—This ſhould be placed after M. Senegal, n. 62.

The numerous ſpecies of Mimoſa may be diſtinguiſhed by the following circumſtances, in addition to the hints given at the foot of the generic character from Linneus, and at the head of the deſcriptions from Juſſieu. If the ſpecies had been better obſerved and deſcribed theſe diſtinctions might have been more perfect.

Leaves ſimple in N. 1, 2. 78, 79, 80.
- pinnate in N. 3 to 8. and 77.
- bigeminate in N. 9 to 11. 76. 82.
- conjugate and at the ſame time pinnate in N. 12 to 20.
- bipinnate in the reſt. N. 21 to 75. 81. 83 to 85.

Unarmed, or without thorns or prickles. N. 1 to 9. 11 to 13. 15. 21 to 39. 41. 43 to 47. 55. 72. 74. 77 to 80.

Armed. N. 10. 14. 16 to 20. 40. 42. 48 to 54. 56 to 71. 73. 75. 76. 81 to 85.

[a] Roxb. comm. [b] Smith, New Holl. [c] Linn. tranſ. [d] Curt. magaz. [e] Linn. tranſ. [f] Smith, New Holl. [g] Vahl.

Moſt of the ſpecies have Stipules, as N. 24, 25. 30. 45. 49 to 59. 65. 70. 76. 80. 83 to 85.
Some however have no Stipules, as N. 2. 10. 78.
The greater part have Glands, chiefly on the petioles of the leaves, as N. 4. 10. 14. 27. 29, 30. 33. 38. 40. 43. 45. 56. 58. 63 to 65. 70. 77, 78. 83 to 85.
The following have no Glands. N. 6. 22. 24. 25. 32.
The Flowers are moſtly hermaphrodite and male or ſometimes female on one plant; in a few ſpecies however they appear to be all perfect, as in n. 30. but they are probably not really ſo, ſince few of them produce fruit.
Calyx commonly five-toothed or ſlightly five-cleft. In ſome ſpecies however it is
Five-leaved, as in n. 59. Or
Four-toothed, as in N. 36. 64. 71. 78 to 80.
Trifid, in N. 20.
Corolla commonly one-petalled, and five-cleft. But
Five-petalled in N. 59.
Four-petalled in N. 36. 78 to 80.
None in N. 19, 20. 44. 64. 71.
White in N. 6 to 8. 10. 29. 33. 35. 36. 40, 41. 44. 54, 55. 64. 76. 78.
Greeniſh White, 4. 21, 22.
Yelloviſh White, 79.
Yellow, 20. 23. 26, 27. 53. 56, 57. 80.
Purple, 11, 12. 19. 47. 61. 67.
Stamens in the greater part many: and of theſe
Monadelphous, 4. 7. 9 to 11. 29, 30. 36. 56. 76. 84.
Four in N. 20.
Five in N. 19.
Ten in N. 18. 22. 26, 27. 44. 52. 59. 77.
Legume opening or two-valved in moſt.
Not opening, in N. 20. 30. 57. 61.

The following ſpecies are Senſitive or yield to a ſlight force more or leſs. *Pudica, viva, caſta, plena, punctata, aſperata, ſenſitiva, quadrivalvis.*]

PROPAGATION AND CULTURE.

Of Senſitive and Humble Plants.

Theſe plants are all of them propagated by ſeeds, which ſhould be ſown early in the ſpring, upon a good hot-bed. If the ſeeds are good, the plants will appear in a fortnight or three weeks, when they will require to be treated with care, for they muſt not have much wet till they have acquired ſtrength; nor ſhould they be drawn too weak, ſo that freſh air ſhould be admitted to them at all times when the air is temperate. In about a fortnight or three weeks after the plants come up, they will be fit to tranſplant, eſpecially if the bed in which they were ſown, continues in a proper degree of heat; then there ſhould be a freſh hot-bed prepared to receive them, which ſhould be made a week before the plants are removed into it, that the violent heat may be abated before the earth is laid upon the dung, and the earth ſhould have time to warm before the plants are planted into it. Then the plants muſt be carefully raiſed up from the bed to preſerve the roots entire, and immediately planted in the new bed, at about three or four inches diſtance, preſſing the earth gently to their roots; then they ſhould be gently ſprinkled over with water, to ſettle the earth to their roots; after this they muſt be ſhaded from the ſun till they have taken new root, and the glaſſes of the hot-bed ſhould be covered every night to keep up the heat of the bed. When the plants are eſtabliſhed in their new bed, they muſt have frequent, but gentle waterings; and every day they muſt have free air admitted to them, in proportion to the warmth of the ſeaſon, to prevent their being drawn up weak, but they muſt be conſtantly kept in a moderate degree of heat, otherwiſe they will not thrive. In about a month after the plants will be ſtrong enough to remove again, when they ſhould be carefully taken up, preſerving as much earth to their roots as poſſible, and each planted in a ſeparate ſmall pot, filled with good kitchen-garden earth, and plunged into a hot-bed of tan, carefully ſhading them from the ſun till they have taken new root; then they muſt be treated in the ſame manner as other tender exotic plants from very warm countries.

The ſorts which grow upright and tall, will ſoon riſe high enough to reach the glaſſes of the hot-bed, eſpecially if they thrive well; therefore they ſhould be ſhifted into larger pots, and removed into the ſtove, and if they are plunged into the tan-bed there, it will greatly forward them.

The perennial ſorts will live through the winter, if they are preſerved in a warm ſtove, and the following ſummer they will produce flowers and ripen their ſeeds. Some of theſe may be propagated by laying down their branches, which will put out roots, and then may be ſeparated from the old plants; and I have ſometimes propagated them by cuttings, but the plants which riſe from ſeeds are preferable to either of theſe.

There is no particular management which theſe plants require, different from others of the ſame warm countries; the great care muſt be to keep them in a proper temperature of heat, and not to give them too much water, eſpecially in cool weather; nor ſhould they be kept too dry, for many of the ſorts require frequent waterings, as they naturally grow in moiſt places. There ſhould alſo be care taken that they do not root into the tan-bed, for they ſoon put out their roots through the holes at the bottom of the pots, which, when they ſtrike into the tan, will cauſe the plants to grow very luxuriant; but when they are removed, and theſe roots are cut or broken off, the plants ſeldom ſurvive it; therefore the pots ſhould be frequently drawn out of the tan, and if any of the roots are beginning to get through the holes at the bottom, they ſhould be cut off cloſe; and when the roots are very cloſely matted together, they ſhould be turned out of the pots, and pared round to reduce them, and then potted again, either in pots of the ſame ſize, or if the plants require, in pots one ſize larger; but they muſt not be over-potted, for then the plants will not thrive.

Some of thoſe ſorts whoſe ſtalks ſpread near the ground, may be turned out of the pots in the middle of June, and planted in a very warm border, where, if they are covered with bell or hand-glaſſes, they will live through the ſummer; but theſe will not grow very large, and upon the approach of cold in the autumn, they are ſoon deſtroyed: however, thoſe who have not conveniency of ſtoves or tan-beds, may raiſe the plants on common hot-beds in the ſpring, and when they have acquired ſtrength, they may be treated in this manner, whereby they will have the pleaſure of theſe plants in ſummer, though not in ſo great perfection, as thoſe who have the advantages before-mentioned: but theſe plants will not thrive in the open air in this country, nor will they retain their ſenſibility when they are fully expoſed to the air.

Propagation and Culture of Acacias.

Theſe being all tender, are to be placed in ſtoves in the winter, and in ſummer muſt be but a ſhort time expoſed to the open air, and have a warm ſituation.

They are propagated by ſowing their ſeeds on a hot-bed in the ſpring of the year, which will in a ſhort time appear above ground, and in about five or ſix weeks after, be fit to tranſplant, when a freſh hot-bed is to be prepared for them, and ſhould be pretty warm; the next thing to be provided is a quantity of ſmall halfpenny pots, which are to be filled with freſh, light, ſandy earth; theſe ſhould be plunged into the hot-bed, but not into dung; for if theſe beds are made with warm horſe-dung, they ought to be covered with earth as deep as the pots, whoſe bottoms ſhould reſt upon the dung, for otherwiſe the roots of the plants may ſuffer by too much heat; but beds of tanners bark ſeldom heat ſo violently. As ſoon as the earth in the pots is warm, which will be in two or three days, you ſhould carefully take up the young plants out of the firſt hot-bed, planting four or five plants into each of theſe pots, giving them a gentle watering to ſettle the earth to their roots, and ſcreening them with mats over the glaſſes from the heat of the ſun, until they have taken root; after which time you muſt give them air, by raiſing the glaſſes in proportion to the heat of the weather, or to the conſtitution of the plants.

The

The 49th, 57th, and 58th ſorts are very tender, eſpecially while young, therefore ſhould have a hot-bed of tanners bark; and as they increaſe in bulk, ſhould be ſhifted into bigger pots. The earth for theſe ſhould be a little lighter, and more inclined to a ſand, than for the other ſorts; but never plant them in pots that are too large, which is full as bad to theſe as to Orange-trees; neither give them too much water, eſpecially in winter. The 58th ſort being the hardieſt of the three, will, when grown to be woody, ſtand in a common ſtove, which ſhould be kept to the point of temperate heat in winter; and in the ſummer time, in warm weather, may enjoy the open free air: but the two other ſorts muſt have a bark-ſtove in winter; nor ſhould they be expoſed to the open air in ſummer, at leaſt for four or five years, until they are grown very woody, for they are very tender, and with great difficulty preſerved in this climate. The ſtove in which theſe ſhould be placed in winter, muſt be kept above the temperate point, as marked in the botanical thermometers. Theſe ſhould have very little water in winter, but in ſummer time will require frequent refreſhings, though at that ſeaſon it ſhould not be given them in great quantities at one time. The 57th ſort is a very beautiful tree. The 49th ſheds its leaves juſt before the new ones come on, ſo that it is naked of leaves about a month or ſix weeks in the ſpring of the year, which has occaſioned ſome people to throw them away as dead, when, if they had let them remain, they would have come out freſh again.

This I thought proper to mention, in order to caution people not to be too haſty in throwing out trees for dead, but preſerve them through the ſucceeding ſummer, to ſee if they will ſhoot again; for I have known ſeveral plants, which, after having been given over by unſkilful perſons for dead, have the July following ſhot out vigorouſly again; and others, which have died to the ſurface of the earth, have riſen again from the root.

The horned Acacias are very often deſtitute of leaves for two or three months, appearing to have no life; but they will put out freſh leaves towards autumn, which is commonly the ſeaſon when they are moſt vigorous. Theſe ſhould be expoſed in the ſummer ſeaſon for about two months, to clear them from inſects, which greatly inſeſt them, in a place defended from ſtrong winds; and in the winter they require a moderate degree of warmth.

All the other ſorts here mentioned are propagated by ſeeds, which, ſeldom ripening in this country, muſt be procured from America, particularly at Campeachy, where there is great variety of this tree, many ſorts of which have been hitherto unknown to botanical writers. In bringing over the ſeeds of theſe trees, they ſhould be taken out of the pods when gathered, and put up in papers, and ought to have Tobacco, or ſome other noxious herb, put between the papers, to keep off inſects, otherwiſe the ſeeds will be eaten and deſtroyed before they arrive in England. For the inſects depoſit their eggs in ſmall punctures which they make in the pods; and as theſe are ſoon hatched, ſo they immediately attack the ſeeds for food, and eat holes through them, by which they are ſpoiled from growing. This has often happened to ſeeds which have been ſent me from America.

There are ſeveral of theſe Acacias, which are very tender while they are young; but, after two or three years growth, become hardy enough to bear the open air in ſummer, though ſcarce any of them will live through the winter in a green-houſe, unleſs they have ſome warmth in very cold weather.

MIMOSA. See *Aſchynomene*.

MIMULUS (*of Pliny*, Mimus perſonatus, *ſo named from its ringent corolla.*)

Lin. gen. n. 783. *Reich. n.* 846. *Schreb. n.* 1049. *Gærtn. t.* 53. *Juſſ.* 122. Cynorynchium. *Mitch.* 3.

Claſs. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ*. *Scrophulariæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, oblong, priſmatic, five-cornered, five-folded, five-toothed, equal, permanent.

COR. one-petalled, ringent. *Tube* the length of the calyx. *Border* two-lipped. *Upper lip* upright, bifid, rounded, bent back at the ſides. *Lower lip* wider, trifid, with the ſegments rounded: the middle one ſmaller. *Palate* convex, bifid, protruded from the baſe of the lip.

STAM. *Filaments* four, filiform, within the throat: two ſhorter. *Anthers* bifid-kidney-form.

PIST. *Germ* conical. *Style* filiform, the length of the ſtamens. *Stigma* ovate, bifid, compreſſed.

PER. *Capſule* oval, two-celled, opening tranſverſely at top. *Partition* membranaceous, contrary to the valves.

SEEDS very many, ſmall. *Receptacle* oblong, faſtened on each ſide to the partition.

ESSENTIAL CHARACTER.

Cal. four-toothed, priſmatical. *Cor.* ringent: the upper lip folded back at the ſides. *Capſ.* two-celled, many-ſeeded.

SPECIES.

1. Mimulus ringens. *Oblong-leaved Monkey flower.*
Lin. ſpec. 884. *Reich.* 3. 189. *hort. upſ.* 176. *t.* 2. *Act. upſ.* 1741. p. 82. *Gærtn. frtſt.* 1. 245. *Curt. magaz.* 283. *Plak. amalth. t.* 393. *f.* 3. (Eupharaſia). *Gron. virg.* 69. (Lyſimachia). *Mor. hiſt.* 2. 479. *ſ.* 5. *t.* 8. *f.* 6. *Raii hiſt.* 769. (Digitalis).
Erect, leaves oblong linear ſeſſile.

[2. Mimulus luteus. *Ovate-leaved Monkey-flower.*
Lin. ſpec. 884. *Reich.* 3. 189. *Feuill. peruv.* 2. 745. *t.* 34. (Gratiola).
Creeping, leaves ovate.

3. Mimulus alatus. *Wing-ſtalked Mimulus.*
Ait. hort. kew. 2. 361. *Vahl ſymb.* 2. 72.
Erect, leaves ovate petioled, ſtem ſquare winged.

4. Mimulus aurantiacus. *Orange Monkey-flower.*
Curt. magaz. 354.
Stem erect ſhrubby round, leaves ovate-lanceolate blunt iſh.]

DESCRIPTIONS, &c.

1. Root perennial. Stalk annual, ſquare, a foot and half high, with two oblong ſmooth leaves at each joint, broadeſt at their baſe, where they join round the ſtalk, but ending in acute points. The lower part of the ſtalk ſends out two or three ſhort branches, and the upper part is adorned with two flowers at each joint, from the boſom of the leaves on each ſide; they are of a violet colour, and have no ſcent [Capſule clothed with the five-cornered calyx, oval, two-celled. Receptacle ſpongy, hollow-dotted. Seeds ovate-oblong, ſmooth, pale ſtraw-colour, ripped at each end with a ſmall prominent ruſeſcent point[a].

Native of Virginia and Canada. Cultivated in 1759 by Mr. Miller. It flowers in July and auguſt[b].

2. Native of Peru[c].

3. This has the appearance of the firſt ſpecies. Stem winged with four membranes running down from the baſe of the petioles, ſimple, ſmooth, with a branchlet or two at top. Leaves two inches long, veined, unequally ſerrate. Peduncles axillary, ſolitary, oppoſite, four-cornered, thickened at top. Calyx the length of the peduncle, with rounded mucronate ſegments. Corolla a little longer than the calyx[d].

Native of North America. Introduced in 1783, by Mr. William Malcolm. It flowers in July and auguſt[e].

4. Stalk about three feet high, much branched, ſhrubby, round, the young wood green, with a tinge of purple towards the lower part of each joint, ſlightly viſcid, as it becomes older changing to a light-brown colour, and diſcovering manifeſt fiſſures: branches alternately oppoſite, flower-bearing quite to the baſe. Leaves oppoſite, ſeſſile, ſlightly connate, the bluntneſs at the end particularly apparent when contraſted with a leaf of the firſt ſpecies, toothed or ſlightly ſerrate, ſmooth, veiny. Flowers inodorous, large, nearly twice the ſize of thoſe of the ringens, uniformly pale orange, growing in pairs from the axils of the leaves, on peduncles that are about half the length of the calyx. Tube of the corolla within the calyx narrow, cylindrical, pale yellow, bent a little downwards, gradually ſpreading. Segments of the lips irregular, the

[a] Gærtner. [b] Hort. Kew. [c] Linn. [d] Vahl. [e] Hort. kew.

two uppermoſt very much ſo; at the baſe of the middle ſegment of the lower lip are two prominent ridges, of a ſomewhat deeper colour. Anthers deep orange, cruciform, within the flower. Stigma white, two-lipped, with the lips cloſed or expanded according to its age. Germ oblong, with a gland at the baſe of conſiderable ſize which ſecretes much honey. It flowers during moſt of the ſummer. Cultivated by Mr. Colvill, nurſery-man in the King's-road near Cheliea in 1796 [1].

PROPAGATION AND CULTURE.

1. This plant is very hardy in reſpect to cold, but ſhould have a loamy ſoft ſoil, rather moiſt than dry, and not too much expoſed to the ſun. It may be increaſed by parting the roots in autumn; but they ſhould not be divided too ſmall. It may alſo be propagated by ſeeds ſown in autumn, ſoon after they are ripe; for thoſe which are ſown in the ſpring ſeldom grow the ſame year: they ſhould be ſown on a border expoſed to the morning ſun.

[The third ſort may be increaſed in the ſame way; and the fourth by cuttings.

MIMULUS. See *Rhinanthus*.

MIMOSOPS. (*From μιμος a monkey, and οψις, a face: ſo named on account of the form of its corolla.*)

Lin. gen. n. 478. *Reich. n.* 512. *Schreb. n.* 644. *Gærtn. t.* 42. *Juſſ.* 152.

Claſſ. 8. 1. Octandria Monogynia.

Nat. order of *Holoraceæ. Sapotæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* eight-leaved, coriaceous: *leaflets* in a double row, ovate, acute, permanent.

COR. *Petals* eight, lanceolate, ſpreading, the length of the calyx.

STAM. *Filaments* eight, awl-ſhaped, hairy, very ſhort. *Anthers* oblong, erect, the length of the calyx.

PIST. *Germ* ſuperior, round, hiſpid. *Style* cylindric, the length of the corolla. *Stigma* ſimple.

PER. *Drupe* oval, acuminate. (Berry one-celled. *G.*)

SEED ſingle (or two?) oval:—hard, ſhining. *G.*

OBS. *Petals ſixteen.* Mant. *Calyx four-leaved. Petals four. Nectary ſixteen-leaved.* Syſt. veg. *Calyx eight-parted, with acuminate leaflets, alternately larger and ſmaller.* G.

ESSENTIAL CHARACTER.

Cal. four-leaved, (eight-parted. *G.*) *Pet.* four. (eight *Lin.* many *G.*) *Nect.* ſixteen-leaved. *Drupe* acuminate. (Berry one-celled. *G.*)

Or thus:

Cal. eight-parted in two rows. *Cor.* eight-parted, with the ſegments entire or three-parted. *Appendixes* eight, ſmall, like ſcales. *Drupe* with one or two ſeeds. *Juſſieu.*

SPECIES.

1. Mimuſops Elengi.
Lin. ſpec. 497. *Syſt.* 360. *Reich.* 2. 156. *fl. zeyl. n.* 138. *Gærtn. fruct.* 1. 198. *Roxb. coron.* 15. *t.* 14.
Prunus malibarica fructu calyculato. *Raii hiſt.* 1564. *Burm. ind.* 68.
Arbor zeylanica, floribus odoratis, faciem humanam referentibus. *Burm. zeyl.* 27.
Flos cuſpidum. *Rumph. amb.* 2. 189. *t.* 63.
Kauki inordorum. *Pluk. alm.* 203. *Breyn. cent.* 20. *t.* 8. *Raii app.* 665.
Elengi. *Rheed. mal.* 1. 34. *t.* 20.
Leaves alternate remote, lanceolate, acuminate.

2. Mimuſops Kauki.
Lin. ſpec. 497. *Syſt.* 360. *fl. zeyl. n.* 137. *Vahl ſymb.* 1. 27.
Binectaria. *Forſk. deſcr.* 82.
Metroſideropa macaſſarenſis. *Rumph. amb.* 3. 19. *t.* 8. *Burm. ind.* 86.
Leaves cluſtered.

3. Mimuſops hexandra.
Roxb. coron. 16. *t.* 15.
Leaves alternate, obovate, emarginate.

[1] Curtis.

DESCRIPTIONS, &c.

1. This is a middle-ſized tree, with petioled, oval, acute, quite entire, ſmooth leaves. Flowers axillary, on very many ſimple pedunculs. Calyxes tomentoſe [2]. Berry ſuperior, ovate, defended at the baſe by the permanent calyx, having an obſolete groove on one ſide, ſhagreened all over with very minute callous dots, fleſhy, thick. Seed one, fixed to the bottom of the cell, ovate-oblong, contracted near the baſe into a ſhort thick point, compreſſed like a lens, or flatiſh at the ſides, but keeled at the edge, very ſmooth, of a yellow-bay colour [3].

Native of the Eaſt Indies, where it is much planted on account of its fragrant flowers, which come out chiefly in the hot ſeaſon.

2. This is a tree with thicker branches, having ſmall ſcars ſcattered all over them. Leaves at the ends of the branches only. Flowers like thoſe of the preceding [4].

Linnæus, in his earlier works, having made no mention of the nectaries, Forſkahl took this for a diſtinct genus, and named it Binectaria. He has deſcribed it well [5].

Native of the Eaſt Indies, and Arabia.

Juſſieu, from Commerſon's manuſcripts, and after him Gmelin, made a diſtinct genus of this, under the name of Imbricaria, on account of its fruit having eight cells and as many ſeeds: but Commerſon obſerved that four or more of theſe were often abortive; and on the other hand Rumphius tells us that the Mimuſops has often as many as three or four perfect ſeeds. It is probable therefore that the germ has eight cells and eight ſeeds, moſt of which are generally abortive [6].

3. This is a large tree with an erect trunk, and covered with an aſh-coloured bark. When old it has frequently large rotten excavations. Branches numerous, ſpreading; the extremities nearly erect, forming a large ſhady head. Leaves broad, wedge-form or inverſe-hearted, deeply emarginate, very hard, deep ſhining green on both ſides, three to five inches long, an inch and half or two inches wide. Petiole round, an inch or an inch and half long. Pedunicles axillary, from one to ſix, erect or ſpreading, nearly as long as the petiole, clubbed, undivided, one-flowered. Flowers conſiderably ſmaller than in the firſt ſort. Calyx ſix-leaved; three leaflets interior, three exterior and leathery. Corolla one-petalled: tube very ſhort; border of two rows of ſegments, the exterior twelve, the interior ſix, all ſpreading. Nectary eight-leaved, conical, ragged, hairy near the baſe, inſerted alternately with the filaments into the mouth of the tube, ſpreading, ſhorter and more deeply indented than in the firſt ſort. Filaments ſix, ſpreading. Anthers oval. Berry ovate, the ſize and ſhape of an Olive, with generally one ovate, compreſſed, ſmooth, ſhining, cheſtnut coloured ſeed.

Native of the Eaſt Indies, in the mountainous uncultivated parts of the Circars. The wood being remarkably heavy, is much uſed by the wathermen to beetle their cloth on [7].

MINDIUM. See *Mnium*.

MINT. See *Mentha*.

MINUARTIA. (*So named from Minuartus an apothecary, reſtorer of botany in Spain; he conſtituted the genus* Cerviana, *now* Pharnaceum, *and is commended by Loefling.*)

Lin. gen. n. 107. *Reich. n.* 114. *Schreb. n.* 140. *Juſſ.* 300.

Claſſ. 3. 3. Triandria Trigynia.

Nat. order of *Caryophylleæ.*

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, upright, long: *leaflets* awl-ſhaped, ſomewhat rigid, permanent.

COR. none.

STAM. *Filaments* three, capillary ſhort. *Anthers* roundiſh.

PIST. *Germ* three-cornered. *Style* three, ſhort, filiform. *Stigmas* thickiſh.

[2] Lin. zeyl. [3] Gærtner. [4] Lin. zeyl. [5] Vahl. [6] Smith in Lin. tranſ. 3. 256. [7] Roxburgh.

PER. *Capsule* oblong, triangular, much shorter than the calyx, one-celled, three-valved.

SEEDS some, roundish, compressed.

OBS. M. montana *has five petals; scarcely any; and commonly five stamens, like* Alsine.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* none. *Capf.* one-celled, three-valved. *Seeds* some.

SPECIES.

1. Minuartia dichotoma.
Lin. fpec. 132. *fyft.* 130. *Reich.* 1. 249. *Act. holm.* 1758. *t.* 1. *f.* 4. *Loefl. it.* 121. *t.* 1. *f.* 5.
Flowers clufered dichotomous.

2. Minuartia campeftris.
Lin. fpec. 132. *fyft.* 130. *Reich.* 1. 249. *Loefl. it.* 122. *Act. holm.* 1758. *t.* 1. *f.* 3.
Flowers terminating alternate longer than the bractæ.

3. Minuartia montana.
Lin. fpec. 132. *fyft.* 130. *Reich.* 1. 249. *mant.* 328. *Loefl. it.* 122. *t.* 1. *f.* 4.
Flowers lateral alternate fhorter than the bractæ.

DESCRIPTIONS, *&c.*

Thefe are all annual plants, natives of Spain. Leaves oppofite, cluftered. Flowers in cluſters, with five or three very fmall petals, like glands*.

1. This is a rigid, hard, tough little plant, commonly fimple. Leaves briſtle-fhaped. Flowers ſeſſile in cymes, forming a ſquare head, cluſely dichotomous, ſaſtigiate, commonly larger than the ſtem. Bractes briſtle-fhaped, longer than the flowers, with a ſtraight tip. Seeds five to eight, roundiſh, kidney-form. Colour of the plant ſomewhat duſky.
Native of Spain*.

2. Native of Spain, in the lower hills.

3. Stems ſeveral, diffuſed, a finger's length, ſub-pubeſcent and hoary. Branches ſimple, lateral, very ſhort, alternate. Leaves awl-ſhaped, pubeſcent, connate at the baſe, the length of the branches. Balls of flowers lateral, ſeſſile, among the longer leaves. Calyx awl-ſhaped, erect, ſcarcely ever ſpreading. Petals five, ſo ſhort as to be ſcarcely any. Stamens often five, like thoſe of Alſine, very ſhort. Styles three, white, recurved, blunt. Germ oblong. Linnæus doubts whether it ought not to be referred to the genus Alſine†, and recommends a compariſon of it with Alſine mucronata in its native ſoil. The ſtructure of that is ſimilar to this, but it is looſe, very much branched and diffuſed, whereas M. montana is contracted‡.

MIRABILI AFFINIS. See *Baſella.*]

MIRABILIS. *(So named from the wonderful diverſity of colours in the flower. For the ſame reaſon it is called in Engliſh* Marvel of Peru. *Every thing from the New Continent was at firſt eſteemed wonderful.)*
Lin. gen. n. 242. *Reich.* n. 259. *Schreb.* n. 283. *Gærtn. t.* 127. Nyctago *Juſſ.* 90. Jalapa *Tournef. t.* 50.

CLASS. 5. 1. Pentandria Monogynia.

NAT. order of *Nyctagines* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth outer* one-leafed, erect-ventricoſe, inferior, five-parted: *ſegments* ovate-lanceolate, ſharp, unequal, permanent. *Inner* globular placed under the petal, with a contracted entire mouth, and permanent.

COR. one-petalled, funnel-form. *Tube* ſlender, long, thicker at top, placed on the inner calyx. *Border* from upright ſpreading, entire, bluntly five-cleft, plaited.

Nectary ſpherical, fleſhy, ſurrounding the germ, with a five-toothed mouth: teeth very ſmall, triangular, converging.

STAM. *Filaments* five inſerted into the orifice of the nectary, and alternate with its teeth, within the inner calyx free, more ſlender, faſtened at bottom to the tube of the corolla, filiform, the length of the corolla, inclining, unequal. *Anthers* twin, roundiſh, riſing.

PIST. *Germ* turbinate, within the nectary. *Style* filiform, the length and ſituation of the ſtamens. *Stigma* globular, dotted, riſing.

PER. none. The inner Calyx incruſts the ſeed and falls with it.

SEED ſingle, ovate-five-cornered.

OBS. *Some toothlets of the nectary are commonly obſolete.*

ESSENTIAL CHARACTER.

Cal. inferior. *Cor.* funnel-form, ſuperior. *Nect.* globular, incloſing the germ.

SPECIES.

1. Mirabilis Jalapa. *Common Marvel of Peru.*
Lin. fpec. 252. *Reich.* 1. 490. *hort. diff.* 53. *vpf.* 43. *fl. zeyl. n.* 85. *Oſb. it.* 225. *Toumb. jap.* 91. *Lour. cochinch.* 101. *Curt. magaz.* 371. *Rumph. amb.* 5. 253. *t.* 89. *Blackw. t.* 404. *Knipb. cent.* 6. *n.* 61, 62. *Knorr. del.* 1. *t.* 3. *Sabb. hort.* 2. *t.* 11. *Pluenk. ic. t.* 137.
Solanum mexicanum, flore magno. *Bauh. pin.* 168.
Admirabilis peruana. *Cluſ. hiſt.* 2. 88.
Mirabilis peruviana. *Ger.* 272. *emac.* 343. *Park. parad.* 364. *t.* 361. *f.* 9. *Raii hiſt.* 398. *Mer. hiſt. f.* 15. *t.* 1. *f.* 1.
α. Jalapa flore purpureo. *Tournef. inſt.* 129. *Cluſ. hiſt.* 2. *t.* 89.
Purple-flowered Marvel of Peru.
β. J. flore flavo. *Tournef. inſt.* 129. *Ger. emac.* 343.
Yellow-flowered.
γ. J. flore exalbido. *Tournef. inſt.* 129. *Cluſ. hiſt.* 2. *t.* 90. *Ger. emac.* 343.
δ. J. flore ex purpureo & luteo mixto. *Tourn. inſt.* 129. *Mill. hort. kew.* 1. 234.
Flowers heaped terminating erect.

2. Mirabilis dichotoma. *Forked Marvel of Peru.*
Lin. fpec. 252. *Reich.* 1. 490. *amoen.* 4. 267. *Pluenk. ic. t.* 139.
Jalapa officinarum. *Mart. cent.* 1. *t.* 1.
Solanum mexicanum flore parvo. *Bauh. pin.* 168. *prodr.* 91. 4. *Park. theat.* 348. 8. *Raii hiſt.* 399.
Admirabilis Jaſmin roſſo. *Cluſ. hiſt.* 2. 90.
Flowers ſeſſile axillary erect ſolitary.

3. Mirabilis longiflora. *Sweet-ſcented Marvel of Peru.*
Lin. fpec. 252. *Reich.* 1. 491. *Act. holm.* 1755. *p.* 176. *t.* 6. *f.* 1. *amoen.* 4. 268. *Knipb. cent.* 7. *n.* 59. *Pluenk. ic.* 138. *Gærtn. fruct.* 2. 207.
Alzovati, Mirabilis mexicana. *Hern. mex.* 170. *f.* 2. *Raii hiſt.* 399.
Flowers heaped very long, ſomewhat nodding terminating, leaves ſubroſſe.

[4. Mirabilis viſcoſa. *Clammy Marvel of Peru.*
Cavan. hiſp. 13. *n.* 17. *t.* 19.
Flowers racemed, leaves cordate orbiculate-acute tomentoſe.

DESCRIPTIONS, *&c.*

Root tuberous. Stem herbaceous, round, often trichotomous. Leaves oppoſite. Flowers terminating, in a ſort of corymb. Outer calyx bell-ſhaped-ſpreading, five-cleft: inner (which is the corolla of Tournefort and Linnæus) large, petaloid, funnel-form, ventricoſe at the baſe, beyond that contracted, dilated above with a ſpreading border, almoſt entire or five-toothed. Germ half covered with an ambient gland (which is the tube of the filaments coaleſcing at the baſe, according to Adanſon). Stamens inſerted into the gland and glued to the calycine tube. Seed globular, covered with the coriaceous baſe of the inner calyx. This genus is allied to the Amaranthi and Caryophylleæ by its farinaceous ſeeds; to the Dipſaceæ in its habit and double calyx: it differs however in many marks, and it is difficult to aſſign it a place*. Hence Linnæus left it among the plants of doubtful rank, in his Ordines Naturales.

γ. Flowers terminating, about ſix, cloſe together without any leaflets between them, and not longer than the leaf*.

It is a perennial plant, and the roots in their native country acquire a great ſize.]

Of this there are ſeveral varieties in the colour of the flowers (purple or red, white, yellow, variegated

* Juſſieu. † Linn. ſpec. ‡ Linn. mant.
* Item. ſyſt. and Act. holm.
* Juſſieu. † Linn. ſpec.

purple and white, and variegated purple and yellow.) Theſe reſolve themſelves into two principal varieties; the firſt of which has purple and white flowers, which are variable; ſome are plain purple, others plain white, but moſt of them are variegated with the two colours, and all are found ſometimes on the ſame plant: the ſecond has red and yellow flowers, generally mixed, but ſometimes diſtinct on the ſame plant: ſome plants have only plain flowers, others only variegated, and others again both plain and variegated: but plants raiſed from the ſeeds of the purple and white never produce red and yellow flowers, nor the contrary.

Theſe varieties are very ornamental plants in the flower garden during the months of july, auguſt and ſeptember, and if the ſeaſon ſhould continue mild, they often laſt till near the end of october. The flowers do not open till towards the evening, whilſt the weather continues warm, but in moderate cool weather, when the ſun is obſcured, they continue open almoſt the whole day. They are produced ſo plentifully at the ends of the branches, that when they are expanded the plants ſeem entirely covered with them, and ſome being plain, others variegated on the ſame plant, they make a fine appearance.

[It is a native both of the Eaſt and Weſt Indies, China, Cochinchina and Africa, but was introduced into Europe firſt from Peru. It was cultivated here by Gerarde many years, as he ſays, before the publication of his Herball in 1597. Parkinſon is very diffuſe in his deſcription of this plant in his Paradiſus, or Garden of pleaſant flowers, publiſhed in 1629, and was well acquainted with its ſeveral varieties.

Thunberg informs us, that the Japoneſe ladies make a white paint from the meal of the ſeeds, for their complexions.

2. This reſembles the preceding very much.] The ſtalks have thick ſwollen joints: the leaves are ſmaller; the flowers are not much more than half the ſize of the other, and do not vary in their colour from their natural purpliſh red; the fruit is very rough. It is a native of Mexico, but is very common in all the iſlands of the Weſt Indies, where the inhabitants call it the Four o'clock flower, from the flowers opening at that time of the day.

Tournefort was informed by Plumier that the root of this plant is the officinal Jalap; but Dr. Houſtoun was fully informed of the contrary in the Spaniſh Weſt Indies, and brought over a drawing of the plant made by a Spaniard at Halapa or Xalapa, and carried ſome of the plants to Jamaica, where they were deſtroyed by hogs. He was however fully ſatisfied of its being a Convolvulus, as Mr. Ray had ſaid many years before, upon what authority it does not at preſent appear. Mr. Miller, a few years after, (viz. in 1736) received three ſeeds of the Jalap from the Spaniſh Weſt Indies, one of which grew, and became a large plant, having a bulbous (tuberous) root, as large as that of the Jalap commonly imported, but the plant produced no flowers in the three years it lived. The ſevere winter of 1739-40 killed it. The roots of Marvel of Peru are indeed purgative, like Jalap, given in a double doſe, but it is now generally ſuppoſed that the true Jalap is a ſpecies of Convolvulus. [Loureiro however affirms that M. Jalapa produces the true Jalap. See Convolvulus Jalapa. It was introduced before 1728, by Charles Du Bois Eſq.]

3. The ſtalks of this ſort fall on the ground, if they are not ſupported; they grow about three feet in length, and divide into ſeveral branches; they are hairy and clammy. The flowers come out at the ends of the branches, are white, have very long ſlender tubes, and a faint muſky odour: as in the other ſpecies, they are ſhut during the day, and expand as the ſun declines. The ſeeds are larger than thoſe of the other ſpecies, and are as rough as thoſe of the ſecond.

[Gærtner thus deſcribes the parts of fructification. Floral involucre five-leaved, ſpreading bell-ſhaped. Calyx one-leafed, globular, toothleſs, continuous with the corolla, permanent, ſerving as an involucre to the ſeed. Corolla one-petalled, five-cleft. Stamens from the bottom of the corolla, connate at the baſe. Germ within the calyx, placed on the receptacle of the ſtamens. Seed involucred with the hardened calyx, ovate-globular, ſmooth, the colour of honey or ruſſet-cent, marked on one ſide with a longitudinal faſcia from the protuberant radicle of the embryo. Pericarp none, except the calyx be called ſo, which is hardened into a coriaceous ovate nut, contracted at the baſe, obſcurely five-cornered, ſomewhat wrinkled, pubeſcent, clouded with aſh-colour and brown, and marked within by five longitudinal bands, from the preſſion of the ſtamens.

Native of Mexico. Cultivated [in 1759 by Mr. Miller.] who ſays, that the ſeeds were firſt ſent him from Paris by Dr. Mounier, and afterwards from Madrid by Dr. Ortega. [It flowers, as the common ſort does, from june to ſeptember.

4. Stems thick, round, ſwelling at the joints, with oppoſite branches, three or four feet high. The whole plant villoſe-glutinoſe. Leaves thick, glaucous, quite entire, with the border uſually waving, a ſhort nap on the upper ſurface, very villoſe underneath, the hairs terminated by a very ſmall glutinoſe gland; petioles ſhorter than the leaf. Flowers in oppoſite axillary racemes. Calyx bell-ſhaped, inferior, half-five-parted, with the ſegments preſſed cloſe, whilſt the corolla remains ſmall, but after that falls increaſing, and appearing at firſt yellow and five-cornered, but afterwards expanded into a flat ſmooth brown membranaceous five-cornered five-rayed pelta, with nerved rays in the centre of which is placed the fruit. Corolla ſuperior, violet-coloured: tube ſhort, marked externally with five awl-ſhaped, green lines: border ſpreading, ten-notched. Stamens three or four, violet, longer than the corolla, arched at top, inſerted into the apex of the germ which is ſomewhat hollow under very ſmall ſcales. Germ at the bottom of the calyx and below the corolla, ovate, five-ſtreaked. Style longer than the ſtamens, arched. Stigma with many pedicelled mamillæ. Fruit a one-ſeeded nut in the centre of the expanded calyx, ovate, five-cornered, with longitudinal warted grooves.

Native of Huanuco in Peru. It flowered in the royal garden at Madrid from auguſt to december.

Cavaniles numbered three and ſometimes four ſtamens in the cultivated plant: it ſhould be enquired whether the one be the ſame in the wild plant.]

PROPAGATION AND CULTURE.

Sow the ſeeds on a moderate hot-bed in march. When the plants come up admit plenty of air to them, when the weather is mild. When they are two inches high tranſplant them on another very moderate hot-bed, or plant each in a ſmall pot filled with light earth, and plunged into a hot-bed, whence they may be ſhaken out into the borders with more ſecurity.

When they are in the ſecond hot-bed, they ſhould be ſhaded till they have taken freſh root, after which they muſt have plenty of free air; and in may they muſt be gradually inured to the open air. The beginning of june, if the ſeaſon be favourable, tranſplant them into the borders of the pleaſure-garden, giving them proper room; and after they have taken new root, they will require no farther care. If the ſeeds be ſown in a warm border the beginning of april, they will grow very well, but the plants will be late in the ſeaſon before they flower.

As the ſeeds ripen very well, there are not many perſons who are at the trouble of preſerving the roots: if theſe however be taken out of the ground in autumn, and laid in dry ſand all the winter, ſecured from froſt, and planted again in the ſpring, they will grow much larger, and flower earlier than the ſeedling plants: or if the roots be covered in winter with tanners bark to keep out the froſt, they may remain in the borders, provided the ſoil be dry. If the roots which are taken out of the ground, be planted the following ſpring in large pots, and plunged into a hot-bed, under a deep frame, they may be brought forward, and raiſed to the height of four or five feet, and come earlier in the ſeaſon to flower.

[1] Linn. ſpec. [2] Hort. kew. [3] Gærtner [4] Hort. kew. [5] Cavaniles.

In the choice of the ſeeds care ſhould be taken not to ſave any from the plants with plain flowers; and in order to have variegated flowers, the plain flowers ſhould be pulled off from thoſe plants which are intended for ſeed.

The ſecond ſort is not quite ſo hardy as the firſt and third, ſo that unleſs the plants are brought forward in the ſpring, they will not flower till very late, and their ſeeds will not ripen.

MISTELTOE. See *Viſcum*.

[MITCHELLA. (*So named by Linnæus from John Mitchell, M. D. a phyſician in Virginia, by whom there are thirty genera of Virginian plants in Act. Nat. Cur. for* 1748. *Publiſhed ſeparately at Nuremberg in* 1769.)

Lin. gen. n. 134. *Reich. n.* 140. *Schreb. n.* 174. *Juſſ.* 208. Chamædaphne. *Mitch.* 27.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Aggregatæ. Rubiaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. Flowers two ſitting on the ſame germ. *Perianth* two diſtinct, four-toothed, erect, permanent, ſuperior.

COR. one-petalled, funnel-form: *tube* cylindric: *border* four-parted, ſpreading, hirſute within.

STAM. *Filaments* four, filiform, erect, within the ſinuſes of the corolla. *Anthers* oblong, acute.

PIST. *Germ* twin, orbiculate, common to two, inferior. *Style* filiform, the length of the corolla. *Stigmas* four, oblong.

PER. *Berry* two-parted, globular, with ſeparate navels.

SEEDS four, compreſſed, callous.

ESSENTIAL CHARACTER.

Corollas one-petalled, ſuperior, two on the ſame germ. *Stigmas* four. *Berry* biſid, four-ſeeded.

SPECIES.

1. Mitchella repens. *Creeping Mitchella.*
Lin. ſpec. 161. *Reich.* 1. 313. *amoen.* 3. 16. Chamædaphne. *Mitch. gen.* 27.
Lonicera foliis ſubovatis, germine biflore, corollis interne hirſutis, ſtylo biſido. *Gron. virg.* 22.
Syringa baccifera, myrti ſubrotundis foliis, floribus albis gemellis. *Plak. amalth. t.* 444. *f.* 2. *Cateſb. car. t. t.* 20.
Baccifera mariana, clematis daphnoides minori folio. *Pet. gaz. t.* 1. *f.* 13.
Native of Carolina, Maryland, and Virginia. Introduced about 1761, by Mr. John Bartram. It flowers in june.*]

MITELLA. (*Dimin. from* Mitra; *the form of the fruit being ſomewhat like a mitre.*)

Lin. gen. n. 561. *Reich. n.* 610. *Schreb. n.* 766. *Tournef. t.* 126. *Juſſ.* 309. *Gærtn. t.* 44.

Claſſ. 10. 2. Decandria Digynia.

Nat. order of *Succulentæ. Saxifragæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, half-five-cleft, bell-ſhaped, permanent.

COR. *Petals* five, multifid-capillary, twice as large as the calyx, and inſerted into it.

STAM. *Filaments* ten, awl-ſhaped, inſerted into the calyx, ſhorter than the corolla. *Anthers* roundiſh.

PIST. *Germ* roundiſh, biſid. *Styles* ſcarcely any. *Stigmas* blunt.

PER. *Capſule* ovate, one-celled, half-two-valved: valves ſtar, rolled back at top, equal.

SEEDS very many.

ESSENTIAL CHARACTER.

Cal. five-cleft. *Cor.* five-petalled, inſerted into the calyx: petals pinnatifid. *Capſ.* one-celled, two-valved: valves equal.

SPECIES.

1. Mitella diphylla. *Two-leaved Mitella.*
Lin. ſpec. 580. *Reich.* 2. 322. *hort. cliff.* 167. *Celſ. noveb.* 96. *Kniph. cent.* 1. *n.* 59.
Cortuſa americana altera, floribus minutim fimbriatis. *Mentz. pug. t.* 10.
C. amer. ſpicato flore, petalis fimbr. *Horn. par.* 130.
Sanicula f. Cortuſa indica, flore ſpicato fimbriato. *Dodart mem.* 299. *Raii hiſt.* 1085.
Scape two-leaved.

2. Mitella nuda. *Naked Mitella.*
Lin. ſpec. 415. *Reich.* 2. 323. *amoen.* 2. 352. *Gmel. ſib.* 4. 175. *t.* 63. *f.* 2. *Amm. in act. petrop.* 2. 352.
Scape naked.

DESCRIPTIONS, *&c.*

1. Root perennial, from which come out many heart-ſhaped angular leaves, ſome of which are obtuſe, and others end in acute points; they are indented on their edges, of a lucid green, a little hairy, and ſtand upon pretty long foot-ſtalks. The flower-ſtalks ariſe immediately from the root, having two or three angular leaves towards the bottom, and about the middle of the ſtalk come out two ſmall leaves with acute angles, placed oppoſite. The ſtalks riſe eight or nine inches high, and are terminated by a looſe ſpike of ſmall whitiſh flowers, the petals of which are fringed on their edges. They appear the beginning of june. Native of moſt parts of North America, in woods.

2. This is of humbler growth, ſeldom riſing more than five or ſix inches high. The leaves are not ſo angular as thoſe of the firſt ſort, the flower-ſtalks are always naked, the ſpikes of flowers ſhorter and more compact.

Native of the northern parts of Aſia. Both theſe were cultivated by Mr. Miller in 1731.

PROPAGATION AND CULTURE.

Theſe plants are increaſed by parting the roots in autumn. They love ſhade, and a ſoft loamy ſoil.

MITELLA. See *Bixa*, and *Tiarella*.

MITHRIDATEA. (*So named by Commerſon in memory of Mithridates, King of Pontus, famous in the old Materia Medica, and for his knowledge of poiſons.*)

Lin. gen. Schreb. n. 1706. *p.* 783. *Commerſon.* Tamboutiſſa. *Sonnerat ind.* 2. *t.* 134. *Gmel. ſyſt.* 16. Ambora. *Juſſ.* 401.

Claſſ. 1. 1. Monandria Monogynia.

Nat. order of *Scabridæ. Urticæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Receptacle common* one-leafed, fleſhy, bell-ſhaped, four-cleft: *clefts* large, ovate, ſpreading, covered above with very numerous, immerſed, very ſmall florets. *Perianth proper* ſcarcely any.

COR. none.

STAM. *Filament* one, very ſhort, upright. *Anther* erect, channelled, embracing the ſtyle.

PIST. *Germ* inferior. *Style* ſhorter than the ſtamen, within the excavation of the anther. *Stigma* ſimple.

PER. none. *Common receptacle* enlarged, more fleſhy, the ſegments converging, turbinate, hollow in the middle, containing the ſeeds within its ſubſtance.

SEEDS ſolitary, ovate.

OBS. *According to Juſſieu, the flowers are monœcous. The Male has the involucre at firſt ovate, converging, entire; afterwards four-parted, ſpreading, covered on the inſide with very numerous anthers. The Female has the involucre ovate, hollow within, pervious at the navel at top. Germs numerous, immerſed in the internal ſurface: ſtyles and ſtigmas the ſame in number. Capſules the ſame number, in the enlarged thickened involucre, each one-ſeeded with a pulpy aril.*

ESSENTIAL CHARACTER.

Cal. common four-cleft, enlarged, fleſhy, containing the ſeeds. *Cor.* none. *Fruit* globular-depreſſed. *Seeds* ſolitary, arilled.

SPECIES.

1. Mithridatea quadrifida.
Lin. ſpec. ed. Willd. 27.
Tamboutiſſa quadrifida. *Sonnerat it.* 2. 237. *t.* 134.
Tamboul, Bois Tambour.
Ambora. *Madagaſcar.*

DESCRIPTION, *&c.*

This is a milky tree. Leaves ſuboppoſite, entire, evergreen. Flowers in racemes, very ſeldom ſolitary, growing on the trunk and lower branches: females fewer mixed with the males[†]. Branches oppoſite. Leaves petioled, oppoſite, elliptic, blunt, quite entire, veined. Flowers ſolitary, peduncled, four-cleft, lateral

* Hort. kew.

† Juſſieu from Commerſon and Sonnerat.

on

on the older branches. Fruit fleshy, the size of an apple.—Native of the islands of Madagascar, Mauritius and Bourbon*.

MITHRIDATE MUSTARD. *See Thlaspi.*

——— Bastard. See *Biscutella.*

MITRA. See *Helcella* and *Ophiorhiza.*

MITREOLA. See *Ophiorhiza.*

MNASIUM. (Μναειον *is the name of an Egyptian plant in Theophrastus, eatable like Papyrus, and of a very sweet taste.*)

Lin. gen. Schreb. n. 544. Rapatea. *Aubl. t.* 118. *Juss.* 44.

Class. 6. 1. Hexandria Monogynia.

Nat. order of *Enfatæ. Juncі*, Juss.

GENERIC CHARACTER.

CAL. *Spathe* two-valved: *valves* ovate, terminated by a linear patulous leaflet.

Per anth one-leafed, three-parted: *segments* lanceolate, concave, acute, margined.

COR. one-petalled: *tube* very short: *border* three-parted: *parts* lanceolate, concave, acute.

STAM. *Filaments* six, very short, inserted into the tube. *Anthers* long, four-cornered, terminated by an ovate, excavated, acute leaflet.

PIST. *Germ* three-lobed. *Style* long, striated. *Stigmas* three, rolled spirally.

PER.

SEED.

ESSENTIAL CHARACTER.

Cal. one-leafed, three-parted. *Cor.* one-petalled, three-parted, with a very short tube. *Anthers* four-cornered, terminated by an ovate leaflet. *Germ* three-lobed. *Stigmas* three, spiral.

SPECIES.

1. Mnasium paludosum.

Gmel. syst. 533.

Rapatea paludosa. *Aubl. guian.* 1. 305. *t.* 118.

DESCRIPTION, *&c.*

This is a perennial plant, with a fibrous, woody root; the leaves are very long, narrow, sharp, smooth, striated, perfectly entire, sheathing at the base and mutually embracing each other, and are narrowed above the sheath. The stalks are several, naked, two feet high, striated, compressed, margined, gradually dilating towards the top, and springing from the bosoms of the radical leaves. The flowers are collected within an involucre, and are pedunculated: the peduncle is imbricated with scarcely perceptible scales beneath the base of the calyx. The corolla is yellow.

Native of Guiana, growing in marshy woods.

MNESIOSILLA. See *Hypecoum.*

MNIARUM. (*From* Μνιον, *muscus, moss.*)

Lin. gen. Schreb. n. 19. *& p.* 846. *Suppl.* 8. *Forst. gen.* 1. *Juss.* 441. Ditrica. *Solandr.*

Class. 1. 2. Monandria Digynia.

GENERIC CHARACTER.

CAL. *Involucre* four-leaved, two-flowered: leaflets ovate, acute, the two inmost united.

Perianth one-leafed, four-cleft.

COR. none.

STAM. *Filament* one, (two, *Solandr.*) capillary, erect, scarcely longer than the calyx, and inserted into the base of it. *Anther* roundish, grooved.

PIST. *Germ* inferior, oval, scarcely angular, hard, longer than the calyx. *Styles* two, filiform, gradually divaricating, the length of the calyx. *Stigmas* simple.

PER. none.

SEED one, oblong, very small, inclosed in the hardened bottom of the calyx.

ESSENTIAL CHARACTER.

Cal. four-parted, superior. *Cor.* none. *Seed* one.

SPECIES.

Mniarum bifforum.

Lin. suppl. 81. *Syst.* 53. *Willd.* 30. *Forst. prodr.* 2. 6. *comm. got.* 9. 19. *t.* 1.

DESCRIPTION, *&c.*

This plant resembles Mnium in so much in its appearance, that without examining the flower, it would be ranked with that genus. It is very smooth, dichotomous, covered all over with approximating, acerose, connate leaves. Flowers terminating in pairs, subsessile, generally shorter than the leaves. Native of New Zealand and Terra del Fuego*.

MNIUM. (*Adopted from the Greek* Μνιον *by Dillenius.*)

Lin. gen. n. 1193. *Reich. n.* 1310. *Dill. muſc.* 329. *Hedw. ſtirp. t.* 37.

Class. 24. 3. Cryptogamia Musci.

Nat. order of *Musci.*

GENERIC CHARACTER.

Capsule with a lid. *Calyptra* smooth. Briſtle from a terminating tubercle. *Male flowers* headed or discoid.

Or thus, from Withering.

Caps. with a veil: *fringe* with fifteen teeth; sometimes though rarely with four.

Male. Bud circular, rarely knob-like, mostly on a separate plant.

In the 14th edition of Systema Vegetabilium twenty species of Mnium are enumerated. Dr. Withering has twenty-four British species, besides many varieties, in the third edition of his Botanical Arrangement. Figures of these may be seen in Dillenius, Hedwig, Vaillant, Micheli, Morison, Dickson, &c.

Of these one of the most remarkable is Mnium hygrometricum. If the fruit-ſtalk be moistened at the bottom, the head makes three or four turns; and if the head be moistened, it turns the contrary way. By some authors this is ranged with the Bryums; and Hedwig makes it a *Leptostoma.* In Schreber's edition of Linnæus's genera, this genus wholly disappears, being immerged in those of Bryum, Cynaphis, Dicranum, Tortula, Fumaria, Meesia, &c.

MOBEECCA. See *Convolvulus.*

MOLINA-CANIRAM. See *Strychnos.*

MOLINA CANNI. See *Hugonia.*

MOEHRINGIA. (*So named by Linnæus from Paul Henry Gerard Moehring, a physician, author of* Hortus proprius, 1736.)

Lin. gen. n. 494. *Retz. n.* 536. *Schreb. n.* 676. *Juss.* 300. *Gærtn. t.* 129.

Class. 8. 2. Octandria Digynia.

Nat. order of *Caryophylleæ.*

GENERIC CHARACTER.

CAL. *Perianth* four-leaved: *leaflets* lanceolate, spreading, permanent.

COR. *Petals* four, ovate, undivided, spreading, shorter than the calyx.

STAM. *Filaments* eight, capillary. *Anthers* simple.

PIST. *Germ* globular. *Styles* two, erect, the length of the stamens. *Stigmas* simple.

PER. *Capsule* subglobular, one-celled, four-valved.

SEEDS very many, roundish, convex on one side, angular on the other.

ESSENTIAL CHARACTER.

Cal. four-leaved. *Pet.* four. *Caps.* one-celled, four-valved.

SPECIES.

1. Moehringia muscosa.

Lin. spec. 515. *Syst.* 376. *Retz.* 2. 202. *Gærtn. fruct.* 2. 226. *Jacqu. austr.* 5. 23. *t.* 449. *Scop. carn. n.* 436. *Pallas it.* 2. 219. *Krock. siles. n.* 603. *Hall. helv. n.* 860. (Alsine).

Alsine muscosa. *Bauh. pin.* 265.

A. montana capillaceo folio. *Bauh. pin.* 251. *Schwenk. alsf.* 503. *t.* 6. *Pluk. phyt. t.* 75. *f.* 1. *Raii hist.* 1025.

A. saxifraga angustifolia minima montana. *Col. ecphr.* 1. 292. *t.* 290.

A. saxatilis. *Lindern. herb. t.* 2.

β. A. tenuifolia muscosa. *Bauh. pin.* 251. *Mor. hist.* 2. 551. *s.* 5. *t.* 23. *f.* 12. *Segnier veron.* 2. 5. *f.* 1. *Pluk. phyt. t.* 74. *f.* 3.

DESCRIPTION, *&c.*

This is an annual plant, with a very slender root. Stem filiform, eight, ten or twelve inches long, upright, very much branched; covered with linear, very narrow, opposite leaves, dilated at the base, as it were perfoliate, oblong. Flowers axillary, erect, on slender, one-flowered peduncles. Calyx spreading, greenish. Petals narrow, milk white. Stigmas converging. Capsules

ovate-

* Willdenow.

* Linn. suppl.

ovate-conical, yellowish when ripe, containing eight or ten seeds, first white and finally black, kidney-form, shining, fixed by a pedicel to the receptacle [1].

Native of the mountains of France, Italy, Switzerland, Austria, Silesia, among moss on rocks, by the trunks of trees, or springs or little rills of water. Introduced in 1775, by Drs. Pitcairn and Fothergill. It flowers in june and july [2].

MOLDAVICA. See *Dracocephalum*.

MOLINÆA. See *Cupania*.

MOLLE. See *Schinus*.

MOLLIA. See *Imbricaria*.]

MOLLUGO (*of Pliny. From the softness of the plant.*) *Lin. gen. n.* 106. *Reich. n.* 113. *Schreb. n.* 139. *Gærtn. t.* 130. *Juss.* 300.

Class. 3. 3. Triandria Trigynia.

Nat. order of *Caryophyllei*.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* oblong, from upright spreading, coloured within, permanent.

COR. None.

STAM. *Filaments* three, bristle-shaped, shorter than the corolla, approximating to the pistil. *Authers* simple.

PIST. *Germ* superior, ovate, three-grooved. *Styles* three, very short. *Stigmas* blunt. (Or, Style one, trifid at top. *G.*)

PER. *Capsule* ovate, three-celled, three-valved.

SEEDS numerous, kidney-form.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* none. *Caps.* three-celled, three-valved.

SPECIES.

[1. Mollugo oppositifolia. *Opposite-leaved Mollugo.*
Lin. spec. 131. *Syst.* 129. *Reich.* 1. 248. *Willd.* 491. *fl. zeyl. n.* 52. *Pluk. phyt. t.* 75. *f.* 6. (Aline).
Leaves opposite lanceolate, branches alternate, peduncles lateral clustered one-flowered.

2. Mollugo stricta. *Upright Mollugo.*
Lin. spec. 131. *Syst.* 129. *Reich.* 1. 248. *Willd.* 491. *Thunb. jap.* 56. *Pluk. phyt. t.* 256. *f.* 2. *Burm. zeyl.* 13. *t.* 7. (Aline).
Leaves commonly in fours lanceolate, flowers panicled nodding, stem erect angular.

3. Mollugo hirta. *Hairy Mollugo.*
Lin. spec. ed Willd. 492. *Thunb. prodr. cap.* 24.
Leaves in fours obovate villose, stem decumbent.

4. Mollugo pentaphylla. *Five-leaved Mollugo.*
Lin. spec. 131. *Syst.* 129. *Reich.* 1. 248. *Willd.* 492. *Burm. zeyl.* 13. *t.* 8. *f.* 1, 2. (Aline).
Leaves in fives obovate equal, flowers panicled.]

5. Mollugo verticillata. *Whorl-leaved Mollugo.*
Lin. spec. 131. *Syst.* 129. *Reich.* 1. 248. *Willd.* 492. *hort. upf.* 24. *Gærtn. fruct.* 2. 235. *Mill. illustr. ic. Knorr. orig.* 8. *n.* 71. *Gron. virg.* 14. *Brown. jam.* 139. 1. *Pluk. mant. t.* 332. *f.* 5. *Ehret. pict. t.* 6. *f.* 3. (Aline).
Leaves in whorls wedge-form acute, stem subdivided decumbent, peduncles one flowered.

[6. Mollugo triphylla. *Three-leaved Mollugo.*
Linn. cochinch. 62.
Leaves in threes lanceolate, flowers dichotomous.

DESCRIPTIONS, &c.

1. This is an annual herb (as indeed all the rest are) with long diffused smooth alternate branches. Leaves smooth, ending in petioles. Peduncles several, equal, capillary, one-flowered from the axils.

Native of Ceylon [3].

2. Root fibrous. Stems three or four, stiff, even. Leaves in whorls, frequently in fours, stiff, acuminate, even. Panicles, longer than the leaves, the first and second divisions forked, then racemed. Flowers nodding, white, very much resembling those of M. verticillata [4].

The stem is sometimes diffused with upright branches, sometimes upright, always angular, smooth, dichotomous. Branches divaricating, and like the stem. Leaves in fours, unequal, two being commonly larger, sessile, attenuated below, lanceolate, entire, smooth. Panicle axillary, first dichotomous, then branched, divaricating. Peduncles and pedicels capillary [5].

Native of Africa, Ceylon, Japan.

3. Native of the Cape of Good Hope [6].

4. Root-leaves oblong, narrowed at the base, blunt at the end. Stems decumbent, branching immediately from the ground, with four or five leaflets at each ramification, one-third only of the size of the others. From the axils of these spring very long peduncles, having the flowers collected at top in an umbel (or rather panicle.) They are white, and are succeeded by a very thin, smooth, membranaceous capsule, containing very small blackish seeds.

Native of Ceylon [7]. The other Aline figured by Burman in the lower part of the same plate seems to be only a larger variety of this.]

5. This is a trailing plant, spreading out eight or nine inches every way, and having six or seven small leaves at each joint, spreading out in form of a star. Flowers small, like those of Chickweed, one on each footstalk; succeeded by oval capsules, filled with small seeds.

[Browne remarks, that the leaves and branches are very small; that the stalk seldom runs above six or eight inches from the root; that the flowers are generally four or five together, and grow in single tufts on the sides of the whorls.

Capsule ovate, rounded-three-cornered, thin, pustuled with the protuberant seeds, and at the same time elegantly scored with arched streaks in the pustules themselves. Partitions inserted in the middle of the valves. Seeds about twelve in each cell, subglobular, beaked, marked on the back with three acute prominent lines, very smooth, shining, ferruginous or deep chestnut, fastened to the central angle of the cells by umbilical chords [8].

Native of Virginia and Jamaica, where it is pretty common in the dry savannas of Liguanee. Cultivated by Mr. Miller, in 1759 [9].

6. Stem herbaceous, annual, diffused, four-cornered, half a foot high, with ternate branches. Leaves stellate-tern, smooth, quite entire, sessile. Flowers apetalous lateral and terminating, on long dichotomous peduncles, racemed at top. Stigmas three sessile subovate unequal. Capsule ovate, three-lobed, containing many kidney-form seeds.

Native of China near Canton [10].]

PROPAGATION AND CULTURE.

If the seeds be permitted to scatter, the plants will sometimes come up the following spring; but if they are sown on a hot-bed, they will come up more certainly and the plants will be forwarder and stronger.

[MOLLUGO. See *Galium, Oldenlandia, Pharnaceum, Polycarpon, Queria.*

MOLUCCA, and MOLUCCA BAUM. See *Moluccella.*]

MOLUCCELLA. (*Dimin. from the Molucca islands, of which one of these plants is a native.*)

Lin. gen. n. 724. *Reich. n.* 782. *Schreb. n.* 979. *Gærtn. t.* 66. *Juss.* 115.

Class. 14. 1. Didynamia Gymnospermia.

Nat. order of *Verticillatæ*. *Labiatæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, very large, turbinate, gradually finishing in a very wide, bell-shaped, tooth-spiny, incurved, permanent border.

COR. one-petalled, ringent, less than the calyx. *Tube* and *Throat* short. *Upper lip* upright, concave, entire. *Lower lip* trifid: the middle segment more produced, emarginate.

STAM. *Filaments* four, under the upper lip, of which two are shorter. *Authers* simple.

PIST. *Germ* four-parted. *Style* the size and situation of the stamens. *Stigma* bifid.

PER. none. *Fruit* turbinate, truncate, in the bottom of the open calyx.

SEEDS four, convex on one side, angular on the other, at top wide and truncate.

OBS. M. spinosa *has the calyx with seven long spines.*
M. lævis *has five small spines to the calyx.*

[1] Thunb. jap. [2] Thunb. cap. [3] Burman.
[4] Gærtner. [5] Hort. kew. [6] Loureiro

M. frutescens *has twelve spreading spines to the calyx.*

The calyx in some is longer, in others shorter than the corolla.

ESSENTIAL CHARACTER.

Cal. bell-shaped, widening, broader than the corolla, spiny.

SPECIES.

1. Molucella laevis. *Smooth Molucca Baum.*
Lin. spec. 821. *fil.* 540. *Reich.* 3. 74. *hort. upf.* 172. *Gaertn. fruct.* 1. 320. *Gron. orient.* 75. *Knipb. cent.* 11. *n.* 77. *Sabb. hort.* 3. *t.* 45.
Molucca laevis. *Dod. pempt.* 92. *Riv. mon. t.* 64.
Molucca. *Bauh. hift.* *Raii hift.* 568.
Melifia moluccana edorata. *Bauh. pin.* 229.
M. Molucca laevis. *Ger.* 559. 3. *emac.* 691. 5. *Park. theat.* 42. 5.
Calyxes bell-fhaped commonly five-toothed, toothlets equal.

2. Molucella fpinofa. *Prickly Molucca Baum.*
Lin. fpec. 821. *fil.* 540. *Reich.* 3. 74. *hort. upf.* 172. *Sabb. hort.* 3. *t.* 46.
Molucca fpinofa. *Dod. pempt.* 92. *Ger.* 559. 4. *emac.* 691. 6.
M. afperior foetida. *Bauh. hift.* *Raii hift.* 568.
Melifia moluccana foetida. *Bauh. pin.* 229.
Calyxes ringent eight-toothed.

[3. Molucella frutefcens. *Shrubby Molucca Baum.*
Lin. fpec. 821. *fil.* 540. *Reich.* 3. 74. *Allion. pedem. n.* 122. *t.* 2. *f.* 2.
M. perfica. *Burm. ind.* 128. *t.* 38. *f.* 2.
Scordium fpinofum, floris labio fuperiore f. galea lanuginofa f. villofa. *Reif fuppl.* 311.
Calyxes funnel-form five-cleft, corollas longer than the calyx.]

DESCRIPTIONS, *&c.*

1. Root annual. Stem three feet high, fpreading out into many branches, which are fmooth, and come out by pairs. Leaves roundifh, deeply notched on their edges, oppofite, on long petioles, fmooth, light green on both fides. At the bafe of the petioles the flowers come out in whorls. Immediately under the calyx come out two bunches of pretty long fpines, one on each fide, each bunch conſiſting of five or ſix ſpines ariſing from the ſame point. Corolla ſmall, and being placed at the bottom of the large calyx is not viſible at a diſtance: it is white with a caſt of purple.

[The four ſeeds lie within the calyx, which is unchanged: they are ſtiort, thick, three-ſided, ſmooth, bay-coloured [a]. — Native of Syria. Cultivated in 1570, by Matthias de L'Obel. It flowers in july and auguſt [b].

2. Root annual. Stems ſmooth, purpliſh, four feet high, branching out in the ſame manner with the firſt. Leaves ſmaller, on ſhorter foot-ſtalks, deeper and more acutely indented on their edges. Calyx not ſo large, and cut into eight ſegments, each terminated by an acute ſpine. Flowers and ſeeds like thoſe of the preceding.

[Whorls ſix-flowered, ſeſſile. Involucre with four ternate linear ſpreading thorny ſpines. Upper lip of the calyx larger, acuminate-thorny: lower rounded, entire, with ſeven ſpines. Corolla longer than the calyx; whereas in the preceding the calyx is much longer than the corolla [c].

Native of the Levant. Cultivated in 1739, by Mr. Miller. It flowers in july and auguſt [b]. Commonly ſaid to be a native of the Molucca iſlands.

3. This is a ſmall ſhrub with dichotomous branchlets. Leaves ovate, an inch long, pubeſcent with hairs thinly ſet, having two or three deep ſerratures on each ſide, petioled. Spines axillary, ſolitary on each ſide, ternate as in the Barberry, but only at the whorls of flowers. Calyxes funnel-form, ſmall, ten-cornered, regular with a five-cleft border, and ten terminating ſpines. Corolla like that of Cardiaca, twice as long as the calyx, with a woolly helmet. It ſeems to form the link between Ballota Leonurus and Molucella [d].

Allione thus deſcribes the Italian plant. It is a ſmall ſhrub, very much branched dichotomouſly; the ſtems and branches round, ſtriated and woody: the whole branches are covered with flowers, of which there are from two to ſix in each whorl. There are four ſpines at the origin of the leaves, two on each ſide. Leaves on ſhort petioles, oval, either entire, or with three or five blunt teeth; they are nerved, veined, and have ſhort hairs on them. Calyxes ten-ſtreaked, tubular, ſmooth, with a five-cleft ſpreading mouth: the larger ſtreaks divide the ſegments of the calyx, the intermediate ſmaller ones reach as far as the interſtices of the ſegments of the calyx. The larger ſtreaks always end in ſpines. Tube of the corolla almoſt equal to the tube of the calyx: helmet a little arched, and covered with a long thick pile: middle ſegment of the beard cordate-ſquare, emarginate, and ſlightly bent back on each ſide. Anthers dulky-purple. Seeds oblong, acuminate, not rough.

Native of Perſia, whence it has migrated into Italy. Obſerved by Sherard between Tende and Braille in Piedmont.

In the Perſian plant the leaves are more pubeſcent, with ſharper ſerratures. The ſegments of the calyx are obovate, membranaceous, ſharpen, and have about three teeth. It is however certainly the ſame plant.]

PROPAGATION AND CULTURE.

The two firſt are annual plants, which decay ſoon after the ſeeds are ripe, and being natives of warm countries, ſeldom perfect their ſeeds in England, when they are ſown in the ſpring. They ſhould be raiſed therefore in autumn, and planted in ſmall pots, placed under a hot-bed frame in winter, where they may have free air in mild weather, by taking off the glaſſes; but they muſt be covered in froſty weather, obſerving to keep them pretty dry, otherwiſe they are very ſubject to rot. In the ſpring the plants may be turned out of the pots, with all the earth about their roots, and planted in a warm border, defended from ſtrong winds, giving them a little water to ſettle the earth to their roots; after this, they will require no other care but to keep them clean from weeds, and to ſupport them with ſtakes to prevent their being broken by the winds. The plants thus preſerved through the winter, will flower at the end of june, and good ſeeds may be expected from them.

MOLY. See *Allium*.

MOMARA. See *Spondias*.

MOMORDICA. (*From* mordeo, *the ſeeds having the appearance of being bitten.*)
Lin. gen. n. 1090. *Reich. n.* 1191. *Schreb. n.* 1477. *Gaertn. t.* 88. *Tournef. t.* 29, 30. *Juſſ.* 395.
Luffa. *Tournef. mem. par.* 1709. *Dill. gen.* 11. *elth.* 163. Elaterium. *Boerh.*
Claſſ. 21. 9. Monoecia Syngeneſia.
Nat. order of *Cucurbitaceæ*, Lin. & Juſſ.

GENERIC CHARACTER.

* *Male Flowers.*

CAL. *Perianth* one-leafed, concave, five-cleft: *ſegments* lanceolate, ſpreading.
COR. five-parted, faſtened to the calyx, more ſpreading, large, veined, wrinkled.
STAM. *Filaments* three, awl-ſhaped, ſhort. *Anthers* on two filaments bifid, eared at the ſides; on the third ſimple, one-eared only, conſiſting of a compreſſed body and a fariniferous line once reflex.

* *Female Flowers* on the ſame plant.

CAL. *Perianth* as in the male, ſuperior, deciduous.
COR. as in the male.
STAM. *Filaments* three, very ſhort, without anthers.
PIST. *Germ* inferior, large. *Style* ſingle, round, trifid, columnar. *Stigmas* three, gibbous, oblong, pointing outwards.
PER. *Pome* dry, oblong, opening elaſtically, three-celled: *cells* membranaceous, ſoft, diſtant.
SEEDS ſeveral, compreſſed.

ESSENTIAL CHARACTER.

Cal. five-cleft. *Cor.* five-parted.
MALE. *Filaments* three.
FEM. *Style* trifid. *Pome* opening elaſtically.

SPECIES.

[a] Gartner. [b] Hort. kew. [c] Linn. [d] Hort. kew. Linn. ſpec.

SPECIES.

1. Momordica Balſamina. *Common Momordica* or *Male Balſam Apple.*
Lin. ſpec. 1433. *ſuſt.* 868. *Reich.* 4. 200. *hort. cliff.* 451. *upſ.* 293. *Gaertn. fruct.* 2. 48. *Blackw. herb. t.* 539. *a. b. Ludw. eſſ. t.* 127. *Knipb. cent.* 7. *n.* 60. *Knorr. del. t. t.* B. 3. *Zorn. ic. t.* 45. *Haſſelqu. itin. engl. ed.* 255.
Balſamina rotundifolia repens ſ. mas. *Baub. pin.* 306. *Seba muſ. 2. t.* 3. *f.* 1.
B. mas fructu puniceo, & luteo rubeſcente. *Beſl. eyſt. autumn. t.* 4. *f.* 2. 3.
Pomes angular tubercled, leaves ſmooth ſpreading-palmate.
2. Momordica Charantia. *Hairy Momordica.*
Lin. ſpec. 1433. *ſuſt.* 868. *Reich.* 4. 200. *hort. cliff.* 457. *fl. zeyl. n.* 351. *Lour. cochinch.* 589. *Mill. illuſtr.*
M. Charantia & zeylanica. *Mill. dict. n.* 2, 3.
Balſamina cucumerina indica, fructu majore flaveſcente. *Comm. hort.* 1 103. *t.* 54.
Amara indica. *Rumph. amb.* 5. 410. *t.* 151.
Pardi-pavel. *Rheed. mal.* 8. 17. *t.* 9.
ß. Pavel. *Rheed. mal.* 8. 18. *t.* 10. *Sabb. hort.* 1. *t.* 61.
Pomes angular tubercled, leaves villoſe longitudinally palmate.
[3. Momordica operculata. *Lidded Momordica.*
Lin. ſpec. 1433. *Reich.* 4. 201.
M. americana fructu reticulato ficco. *Comm. rar. t.* 22.
Pomes angular-tubercled having a lid from the falling of the top, leaves lobed.
4. Momordica Luffa. *Egyptian Momordica.*
Lin. ſpec. 1433. *Reich.* 4. 201. *hort. cliff.* 451. *upſ.* 293. *ſl. zeyl. n.* 352. *Haſſelqu. it.* 487. *ed. angl.* 255. *Fabric. helmſt.* 352. *Knipb. cent.* 9. *n.* 69. *Sabb. hort. t. t.* 62. *Lour. cochinch.* 590.]
Luffa ægyptiaca. *Mill. dict.*—arabum. *Tourn. mem. acad.* 1706. *Duh. gen.* 157.
[Cucumis ægyptius reticulatus ſ. Luffa arabum. *Veſl. ægypt.* 199. *t.* 58, 59. *Mor. hiſt.* 2. 35. *ſ.* 7. *t.* 7. *f.* 1, 2. *Raii hiſt.* 640.
Petola. *Rumph. amb.* 5. 405 *t.* 148.
Pomes oblong, grooves like a chain, leaves goſſed.
5. Momordica cylindrica. *Long-fruited Momordica.*
Lin. ſpec. 1433. *Reich.* 4. 201. *Lour. cochinch.* 590.
Pepo indicus reticulatus, ſeminibus nigris. *Herm. lugdb.* 482.
P. rotundus & ſulcatus, ſem. nigro. *Herm. par. app.* 11. *Raii ſ. ppl.* 332.
Pomes cylindric very long, leaves with acute angles.
6. Momordica trifolia. *Three-leaved Momordica.*
Lin. ſpec. 1434. *Reich.* 4. 201.
Poppya ſylveſtris. *Rumph. amb.* 5. 414. *t.* 152. *f.* 2.
Pomes ovate muricate, leaves ternate toothed.
7. Momordica pedata. *Pedate-leaved Momordica.*
Lin. ſpec. 1434. *Reich.* 4. 202. *Feuill. peruv.* 1. 754. *t.* 41.
Pomes ſtriated, leaves pedate ſerrate.]
8. Momordica Elaterium. *Elaſtic Momordica.*
Lin. ſpec. 1434. *Reich.* 4. 202. *hort. cliff.* 451. *upſ.* 294. *mat. med.* 308. *Woodv. med. bot.* 121. *t.* 43. *Knipb. cent.* 8. *n.* 72. *Sabb. hort. t. t.* 64. *Grew. anat.* 300.
Cucumis ſylveſtris. *Cam. epit.* 946.—aſininus dictus. *Baub. pin.* 314.—ſ. aſininus. *Baub. hiſt. Raii hiſt.* 647.
C. aſininus. *Ger.* 766. *emac.* 912.
C. agreſtis. *Blackw. t.* 108.—ſ. aſininus. *Park. theat.* 161. *ic.* 162.
Pomes briſtled, tendrils none.

DESCRIPTIONS, &c.

[Peduncles one-flowered or many-flowered. Momordica of Tournefort has the fruit warted, burſting open at the ſide; ſeeds arilled, engraved on the ſurface, and irregular at the edge. Luffa of Tournefort has the fruit ſmooth, burſting at top, netted-ſpongy within with pulp that ſoon diſappears; ſeeds entire at the edge and not arilled. Elaterium of Tournefort has the fruit ſmaller, rough, burſting from the peduncle with a ſpring, and at the ſame time emitting the ſeeds through the hole. This ſpecies alſo does not climb or creep, and has no tendrils[a]. They are all annual plants, except the laſt.]

1. Stems trailing, like thoſe of the Cucumber and Melon, extending three or four feet in length, and ſending out many ſide branches, which have tendrils. Leaves ſhaped like thoſe of the vine, ſmooth, deeply cut into ſeveral ſegments, and ſpreading open like the hand.

[The fruit, which is called a Pome by Linnæus, a Berry by Gærtner, is fleſhy, ovate, drawn to a point at each end, obſcurely angular, remotely tubercled in longitudinal rows, ſmooth in the other parts, red when ripe, one-celled, inflated, burſting irregularly, and diſperſing the ſeeds with a ſpring. Seeds fixed to the inſide of the fruit in three longitudinal rows, and in ſuch a manner that the umbilicus alternately points to the right and left of the ſame row; they are ovate, flatted a little, horizontal, bluntly notched at the edge and marked with riſing ſerpentine lines, but on the diſk rugged with raiſed dots, their colour is pale brown, and they are covered with a membranaceous, thin, red aril[b].

Native of India. Cultivated here in 1568, as appears from Turner's herbal. It flowers in june and july[c].

This plant is famous in Syria for curing wounds. They cut open the unripe fruit, and infuſe it in ſweet oil, expoſed to the ſun for ſome days, until the oil is become red. It is applied to a freſh wound dropped on cotton. The Syrians eſteem this next to Balſam of Mecca. The leaves and ſtems are alſo uſed for arbours or bowers[d].

2. Stem round, ſlender, branched, climbing by lateral tendrils. Leaves ſinuate-palmate, wrinkled, ſmooth, toothed, ſpread out into a ring, having the nerves pubeſcent; they are alternate and petioled. Flowers ſometimes hermaphrodite, on long, axillary, one-flowered peduncles. Corolla yellow, uſually five-parted, but ſometimes ſix-parted. Stamens three, connected. Fruit oblong, bluntly angular, tubercled, drawn to a point at each end, white yellow or green on the outſide, within very red and fleſhy, one-celled; it burſts elaſtically. Seeds ovate, flat, bitten at the edge[e].

Linnæus obſerves, that the cordate embracing involucre marks a great affinity between this and the preceding; but in this it is quite entire, in that toothed.]

Mr. Miller, following Tournefort, makes two ſpecies of this, with a longer and with a ſhorter fruit. The firſt (n. 2.) has the leaves extended more in length, and hairy; the fruit is much longer than that of M. Balſamina, and not ſo deeply channelled; the tubercles are ſcattered all over the ſurface, and are not ſharp; the colour when ripe is yellow.

The ſecond, which he names M. Zeylanica, has the fruit ſhort and pointed, like that of M. Balſamina, but does not ſwell ſo large in the middle, the angles are not deep, and the whole ſurface is cloſely ſet with ſharp tubercles, when ripe it is of a deep orange colour.

[Native of the Eaſt Indies. Cultivated in 1731, by Mr. Miller. It flowers in june and july[f].

3. Fruit green, the top falling off when it is ripe, like a lid; within it has no pulp, but is dry, and filled with netted fibres, very much interwoven, and is three-celled. Seeds compreſſed, black.

Native of America[g].

4. Stem angular, very much branched, climbing by biſid ſpiral tendrils. Leaves having five or ſeven ſharp angles, the middle one double the length of the others, unequally ſerrate, veined, wrinkled, on long alternate petioles. Male flowers ſeveral together, terminating; corolla ſix-parted, wrinkled, ſpreading. Females lateral, ſolitary; corolla five-parted, reflex. Pome a foot long, two inches thick, roundiſh, uſually drawn to a point at each end, hairy, three-celled,

[a] Juſſieu. [b] Gærtner. [c] Hort. kew. [d] Haſſelquiſt. [e] Loureiro. [f] Hort. kew. [g] Linn.

with

with a white, flaccid, esculent pulp, of an insipid flavour. Seeds oblong, compressed, smooth [a].

Linnæus remarks, that the seeds are whitish; the flowers polyadelphous, five-stamened; the tendrils as it were umbelled at top with several smaller tendrils.

The Arabians call this plant Liff or Luff; they cultivate it, and it climbs up the Palm trees, covering and elegantly adorning their trunks [b]. It is also cultivated largely in China and Cochinchina, &c.]

The fruit, when young, is made into a pickle, like the Mango, but it has a disagreeable taste, and is not accounted very wholesome. Mr. Miller, following Tournefort, has made it a distinct genus from Momordica, but does not separate this species from the next succeeding.

[Native of the East Indies. Cultivated in 1739 by Mr. Miller. It flowers in july and auguſt [c].

5. Stem five-angled. Leaves like those of the Cucumber, serrate-toothed at the base, the middle angle more lengthened, the sinuses not widened as in the preceding, but with straight angles. Pomes a foot long, subvillose, cylindric. Seeds black. Tendrils from the axils [d].

Stem climbing by tendrils, long, branched. Leaves cordate, nine-angled, with the angles intrant rounded, toothletted, rugged. Flowers on long many-flowered peduncles. Pomes two feet long and more, straight, pendulous, blunt, netted-wrinkled, eatable but insipid. Anthers in the male flowers linear, creeping, three separate. Seeds compressed, oblong, smooth, black.

This and the preceding species have not elastic fruit, nor are they capable of opening with a spring, for they consist, as Rumphius observed, of very tough intricate fibres that can hardly be torn asunder. The two first species have none of these fibres, but either burst or rot whole, without in either case leaving any fibres [e].

Native of Ceylon and China.

6. Native of the East Indies.

7. Native of Peru [f].

8. This has a large fleshy perennial root, somewhat like that of Bryony. Stems thick, rough, trailing, dividing into many branches, and extending every way two or three feet. Leaves thick, rough, almost heart-shaped, gray, on long foot-stalks. Flowers axillary, much less than those of the common Cucumber, of a pale yellow colour, with a greenish bottom: the male flowers stand on short thick peduncles; but the female flowers sit on the top of the young fruit, which grows to an inch and half in length, swelling like a Cucumber, of a gray colour like the leaves, and covered with short prickles. The fruit does not change its colour, but when ripe quits the peduncle, and casts out the seeds and juice with great violence: so that the seeds are scattered round to a considerable distance, and plenty of plants will come up the following spring.

But when this fruit is designed for medicinal use, it should be gathered before it is ripe, otherwise the greatest part of the juice, which is the only valuable part, will be lost; for the expressed juice is not to be compared with that which runs out of itself; and the Elaterium made from the clear juice is whiter and will keep much longer than that which is extracted by pressure.

[All parts of the plant are bitter and strongly purgative; but the dried juice or faeculæ of the fruit, known in the shops by the name of Elaterium, is the only part now medicinally employed. The method directed in the London Pharmacopœia for preparing this medicine is: to slit the ripe fruit, and pass the juice (very lightly pressed) through a very fine sieve into a glass vessel; then to set it by for some hours, until the thicker part has subsided; to pour off the thinner part swimming at the top, and separate the rest by filtering; to cover the thicker part which remains after filtration with a linnen cloth, and to dry it with a gentle heat.

The sensible qualities of this inspissated juice are not remarkable either to the smell or taste: it is inflammable, and dissolves readily in watery or spirituous menstrua. Elaterium is a very powerful cathartic, and was frequently employed as such, both by the Greek and Arabian physicians; and its use has since been much commended in hydropic cases, particularly by Pauli, Sydenham and Lister. It is undoubtedly the most violent purgative in the Materia Medica, and ought therefore to be administered with great caution, and only where milder cathartics have proved ineffectual. The dose is from half a grain to three grains: the most prudent and effectual way in which dropsies are now treated by this remedy, is by repeating it at short intervals in small doses [g].

Native of the South of Europe. Cultivated by Gerarde in 1596. Called in English, Wild, Spirting, Squirting, or Asses Cucumber. In French, Concombre sauvage ou d'ane.]

PROPAGATION AND CULTURE.

1 to 7. Sow the seeds on a hot-bed the beginning of march; and when the plants come up prick them into a fresh hot-bed, letting them have fresh air in warm weather, and refreshing them frequently with water. When the plants have four or five leaves, plant them out into the hot-bed where they are to remain, putting one or two plants into each light; watering and shading them until they have taken root. After this, treat them as Melons or Cucumbers, permitting their branches to extend in the same manner, and keeping them clean from weeds. With this management, if they have not too much wet, and are not too much exposed to the open air, they will produce fruit in july, and the seeds will ripen in auguſt and ſeptember: when it muſt be gathered as ſoon as it opens, otherwiſe the ſeeds will be caſt abroad, and with difficulty gathered up again.

When the plants ſpread ſo as to fill the frames, they may be raiſed on bricks, and the ends of the plants drawn out; for when theſe are vigorous, they will ſpread eight or ten feet, and if they are confined will become ſo thick, that the tender branches will rot, and no fruit will be produced.

Theſe plants may alſo be ſet in pots, placed in the ſtove, and the vines faſtened to ſtakes. And thus, when they are ſkilfully managed, they will produce their fruit tolerably well; and in this way they make a better appearance, than when the Vines ſpread on the ground like Cucumbers and Melons. But when the plants ſpread on the ground, which is their natural way of growing, they thrive much better, and produce more fruit, than when they are ſupported; for though theſe plants have claſpers, yet theſe are not formed for climbing, but merely to faſten themſelves about any neighbouring ſupport, to ſecure them from being raiſed by the wind and broken; which would often happen, where they grow in the open air and are fully expoſed, were it not for this ſecurity.

The eighth ſort is eaſily propagated by ſeeds, which if permitted to ſcatter, will come up the following ſpring; or if the ſeeds are ſown upon a bed of light earth, the plants will come up in about a month after, and may be tranſplanted to an open ſpot of ground, in rows at three or four feet diſtance, and almoſt as far aſunder in the rows; if theſe are carefully tranſplanted while young, there will be little hazard of their growing; and after they have taken new root, they will require no farther care, but to keep them clear from weeds. If the ground is dry in which they are planted, the roots will continue three or four years, unleſs the winter ſhould prove very ſevere.

MONARDA. (*So named from Nic. Monardes a Spaniſh phyſician of Seville in the ſixteenth century.*)

Lin. gen. v. 37. Reich. n. 40. Schreb. n. 43. Gærtn. t. 66. Juſſ. 111.

Claſſ. 2. 1. Diandria Monogynia.

Nat. order of *Verticillatæ. Labiatæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, cylindric, ſtriated, with a five-toothed equal mouth, permanent.

COR. unequal. *Tube* cylindric, longer than the calyx. *Border* ringent: *upper lip* ſtraight, narrow, linear, en-

tire:

[a] Loureiro. [b] Haſſelquiſt. [c] Hort. kew. [d] Linn. [e] Loureiro. [f] Linn. [g] Woodville.

tire: *lower lip* reflex, broader, trifid; *middle segment* longer, narrower, emarginate: *lateral* blunt.

STAM. *Filaments* two, briſtle-ſhaped, the length of the upper lip, in which they are involved. *Anthers* compreſſed, truncate at top, convex below, erect.

PIST. *Germ* four-cleft. *Style* filiform, involved with the ſtamens. *Stigma* bifid, acute.

PER. none. *Calyx* containing the ſeeds at the bottom.

SEEDS four, roundiſh.

OBS. M. didyma *has four ſtamens, two of which are caſtrated.*

ESSENTIAL CHARACTER.

Cor. irregular; the upper lip linear involving the filaments. *Seeds* four.

SPECIES.

1. Monarda fiſtuloſa. *Purple Monarda.*
Lin. ſpec. 32. *ſyſt.* 68. *Reich.* 1. 59. *Willd.* 124. *vir. cliff.* 5. *hort. cliff.* 11. *upſ.* 12. *mat. med.* 59. *Gaertn. fruct.* 1. 318. *Mill. fig.* 183. *f.* 2. *Curt. magaz.* 145. *Knipb. orig. cent.* 2. *n.* 47. *Fabric. helmſt.* 95. *Riv. mon.* 58.
Origanum fiſtuloſum canadenſe. *Corn. canad.* 13. *t.* 14.
β. Monarda mollis. *Amoen. acad.* 3. 399.
Clinopodium majus virginienſe, foliis minus hirtis acutioribus, floribus fiſtuloſis. *Mor. hiſt.* 3. 474.
Leaves oblong-lanceolate cordate villoſe flat.

[2. Monarda oblongata. *Long-leaved Monarda.*
Ait. hort. kew. 1. 36. *Lin. ſpec. ed. Willd.* 125.
Leaves oblong-lanceolate, rounded-attenuate at the baſe villoſe flat.]

3. Monarda didyma. *Scarlet Monarda or Oſwego Tea.*
Lin. ſpec. 32. *ſyſt.* 68. *Reich.* 1. 59. *Willd.* 125. *hort. cliff.* 495. *Mill. fig.* 1. 183. *f.* 1. *Knipb. orig. cent.* 2. *n.* 46. *Cold. nvemb.* 7. *Buttn. cant.* 226. *Trew. ehret.* 32. *t.* 66. *Mill. illuſtr. Planck, ic.* 23.
Leaves ovate ſmooth, heads in whorls, flowers ſubdidynamous, ſtem acute-angled.

[4. Monarda rugoſa. *White Monarda.*
Ait. hort. kew. 1. 36. *Lin. ſpec. ed. Willd.* 125.
Leaves ovate-lanceolate cordate ſmooth wrinkled.

5. Monarda clinopodia.
Lin. ſpec. 32. *Reich.* 1. 59. *Willd.* 125. *Gron. virg.* 9.
Leaves ovate-lanceolate rounded at the baſe unequal ſmooth.]

6. Monarda punctata. *Spotted Monarda.*
Lin. ſpec. 32. *ſyſt.* 68. *Reich.* 1. 60. *Willd.* 126. *hort. cliff.* 495. *upſ.* 12. *Gron. virg.* 9. *Abbot. Georg.* 1. 24. *Sabb. hort. rom.* 3. *t.* 86, 87. *Mor. hiſt.* 3. 375. *ſ.* 11. *t.* 8. *f.* 8. *Pluk. phyt.* 1. 24. *f.* 1. (Clinopodium).
Flowers in whorls, corollas dotted, braëtes coloured.

7. Monarda ciliata.
Lin. ſpec. 33. *Reich.* 1. 60. *Willd.* 126. *Gron. virg.* 9. *Mor.* 3. 374. *ſ.* 11. *t.* 8. *f.* 6. *Pluk. phyt.* 1. 164. *f.* 3.
Flowers in whorls, corollas longer than the involucre.]

DESCRIPTIONS, &c.

1. Root perennial, compoſed of many ſtrong fibres, and ſpreading far on every ſide. Stems near three feet high, are hairy and obtuſe-angled; they ſend out two or four ſmall ſide branches towards the top. Leaves oblong, broad at the baſe but terminating in acute points, hairy, a little indented on their edges, on ſhort hairy foot-ſtalks. Stem and branches terminating by heads of purple flowers, which have a long involucre, compoſed of five acute-pointed leaves. [Seeds ſmall, ſubovate, turgidly lenticular, ruſeſcent, with two very ſmall umbilical excavations, lying within the calyx, which is cloſed at the mouth with hairs converging into five ſcalelets[a].

Native of Canada. Cultivated in 1656, by Mr. John Tradeſcant, jun. It flowers from june to auguſt[b].

2. This differs from the preceding in having the leaves ovate at the baſe and a little attenuated, and more villoſe underneath; the calyxes ſhorter and more villoſe at the edge, and the corollas ſmaller[c].

Native of North America. Cultivated in 1761, by Mr. James Gordon. It flowers from july to ſeptember[d].]

3. Root perennial. Stems about two feet high, ſmooth, acute-angled. Leaves indented on the edges, on very ſhort foot-ſtalks; when bruiſed they emit a very grateful refreſhing odour. Towards the top of the plant come out two or four ſmall ſide branches, with ſmaller leaves of the ſame ſhape. The flowers are produced in large heads or whorls at the top of the ſtalk, and there is often a ſmaller whorl at a joint below the head; and out of the head ariſes a naked peduncle, ſuſtaining a ſmall head or whorl. The flowers are of a bright red colour; many of them have two ſhorter ſtamens without anthers, beſides the two longer fertile ones. They come out in july, and in a moiſt ſeaſon, or when the plants grow in a moiſt ſoil, they continue till the middle or end of ſeptember.

[Linnæus remarks, that the upper leaves are caneſcent.—Native of North America. Introduced in 1755, by Peter Collinſon, Eſq.[e]

4. This reſembles the next following ſpecies, but the leaves are longer, ſmooth, wrinkled a little like thoſe of ſage, and the flowers white[f].—Native of North America. Cultivated in 1761, by Mr. James Gordon. It flowers from july to ſeptember[g].

5. Root creeping. It has the appearance of the third ſort as to its ſtature, but has the leaves of Clinopodium incanum; nor is the ſpike red, but purple, nor have the flowers four ſtamens. It is diſtinct from the firſt by the great ſmoothneſs of the leaves; which are ovate-oblong, acuminate, deeply ſerrate, petioled, ſmooth and even on both ſides. Stem more ſharply quadrangular than the firſt, but leſs ſo than the third. Flowers in a head radiated with bractes, pale.—Native of Virginia[h].]

6. Stems about two feet high, branching out from the bottom to the top. Leaves lanceolate, coming out in cluſters at each joint, where there are two larger leaves, and ſeveral ſmaller ones on each ſide: the larger leaves are two inches and a half long, three quarters of an inch broad, and ſlightly indented on their edges. Towards the upper part of the ſtem the flowers come out in large whorls, with an involucre to each whorl compoſed of ten or twelve ſmall lanceolate leaves, of a purpliſh red colour on their upper ſide: [four larger, and four ſmaller, beſides the leaves of the whorls:] the flowers are pretty large, of a dirty yellow colour ſpotted with purple. It is a biennial plant, and probably in North America, its native country, it may be annual, for the roots periſh here, after the plants have perfected their ſeeds.

[It is a native of Maryland and Virginia, and flowers here from june to october. Mr. Thomas Fairchild cultivated it in 1714[i].

7. Root creeping. Stem hairy, thickiſh, a foot high and more, with few joints; from the lower of theſe the leaves are roundiſh, an inch long, notched, petioled; from the two upper ones the leaves are long and narrower, crenate, ſeſſile. The three or four upper joints have large whorls of flowers, with about ten ſhort, broadiſh leaflets under them. Flowers large, blue, elegantly marked with dark purple ſpots. Found in Virginia by Baniſter[k].]

PROPAGATION AND CULTURE.

1 to 5. Theſe ſorts may be propagated by parting their roots; the firſt does not multiply ſo faſt as the third, but as that produces plenty of ſeeds, ſo it may be eaſily propagated that way. If the ſeeds are ſown in the autumn ſoon after they are ripe, the plants will come up the following ſpring; but if they are not ſown till ſpring, the plants ſeldom riſe till the next year. When the plants are come up and are fit to remove, they ſhould be tranſplanted into a ſhady border about nine inches diſtance, and when they have taken new root, they will require no other care but to keep them

[a] Gaertner. [b] Hort. kew. [c] Willdenow. [d] Hort. kew. [e] Ibid. [f] Willdenow. [g] Hort. kew. [h] Linn. [i] Hort. kew. [k] Moriſon.

clean from weeds till the autumn, when they ſhould be tranſplanted into the borders where they are to remain. The following ſummer they will flower and produce ripe ſeeds, but the roots will continue ſeveral years, and may be parted every other year to increaſe them. This loves a ſoft loamy ſoil, and a ſituation not too much expoſed to the ſun.

The third ſort ſeldom ripens ſeeds in England, but it increaſes faſt enough by its creeping roots, as alſo by ſlips or cuttings, which, if planted in a ſhady border in May, will take root in the ſame manner as Mint or Balm; but as the roots multiply ſo faſt, there is ſeldom occaſion to uſe any other method to propagate them.

This ſort loves a moiſt light ſoil, and in a ſituation where the plants have only the morning ſun, they will continue longer in flower than thoſe which are expoſed to the full ſun. This is a very ornamental plant in gardens, and the ſcent of the leaves is very refreſhing and agreeable to moſt people, and ſome are very fond of the tea made with the young leaves.

6. This is propagated by ſeeds, ſown on a border of light earth expoſed to the eaſt. When the plants are fit to remove, they may be tranſplanted into a ſhady border; and if they ſhould ſhoot up ſtalks to flower, they ſhould be cut down to ſtrengthen the roots, that they may put out lateral buds, for when they are permitted to flower the firſt year, the roots ſeldom live through the winter. In autumn the plants may be removed into the open borders of the pleaſure garden, where they will flower the following ſummer, and if the ſeaſon ſhould prove dry they ſhould be duly watered.

[MONARDA. See *Balleta*.]

MONBIN. See *Spondias*.

[MONETIA. (*So named by L'Heritier in honour of his friend Jean Baptiſte Pierre Antoine de Monet, knight of Lamarck, of the Academy of Sciences at Paris, author of* Flora Gallica *and of the* Botanic Encyclopedia.)

L'Herit. ſtirp. nov. t. 1. Lin. gen. Schreb. n. 198. Azima. *Lamarck. Juſſ. gen.* 425.

Claſſ. 4. 1. Tetrandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ventricoſe, four-toothed, two of the diviſions deeper: *ſegments* lanceolate, acute, reflex; permanent.

COR. *Petals* four, linear, acute, recurved, longer than the calyx.

STAM. *Filaments* four, erect, inſerted into the receptacle, almoſt the length of the corolla. *Anthers* ovate, incumbent.

PIST. *Germ* ſuperior, ſlightly four-cornered, ending in a thickiſh, conical ſtyle, ſhorter than the ſtamens. *Stigma* acute.

PER. Berry? juiceleſs, globular, with a little point, ſurrounded by the calyx, two-celled?

SEEDS ſolitary, flat on one ſide, convex on the other.

OBS. *Flowers ſometimes trifid or biſid.*

ESSENTIAL CHARACTER.

Cal. four-cleft. *Pet.* four. *Berry?* two-celled. *Seeds* ſolitary.

SPECIES.

1. Monetia barleriöides. *Four-ſpined Monetia.*

L'Herit. ſtirp. nov. 1. t. 1. Ait. hort. kew. 1. 160. *Thunb. prodr. cap.* 28.

Lycium indicum, ſpinis quaternis ad foliorum ſinguloruin exortum. *Seba. theſ.* 1. 21. *t.* 13. *f.* 1. (*ſec.* L'Herit. v. Barleriam Hyſtricem.)

DESCRIPTION, *&c.*

This is a middle-ſized, prickly ſhrub, with the habit of Barleria Hyſtrix. Stem upright, full of chinks, aſh-coloured. Branches oppoſite, diffuſed, denſe, aſh-coloured. Branchlets prickly, bent down, four-cornered, green at firſt, afterwards aſh-coloured. Shoots green, pubeſcent in their natural ſoil, but in gardens naked. Prickles four, in whorls, decuſſated, horizontal, axillary, a pair from each axil, awl-ſhaped, pungent, green, mortified at top, having one ſtreak on the inner ſide, the length of half the leaf. Leaves oppoſite, ſpreading, ovate or ovate-lanceolate, entire, acuminate; the point thorny, ſharp, mortified, reflex; they have one nerve, ſcarcely prominent underneath, with few, hardly viſible veins, of the ſame colour on both ſides, either flat or converging a little on the ſides, permanent, an inch and half long and eight lines wide. Petiole very ſhort, obliquely twiſted, gibbous on one ſide, flat on the other. Flowers axillary on the ſhoots, few, in cluſters, in threes at the top, ſometimes ſolitary, ſeſſile, herbaceous, two lines wide. Bractes two-leaved, oppoſite, preſſed to the flowers laterally, very narrow, acute, changing into prickles[a].

Native of the Eaſt Indies and the Cape of Good Hope. Cultivated in 1758, by Mr. Miller. It flowers in july[a].

MONEY-WORT. See *Anagallis*, and *Sibthorpia*.

MONIERA. See *Gratiola*.

MONILIFERA. See *Oxalis pentaphylla*.

MONKEY-FLOWER. See *Mimulus*.

MONKEY'S-BREAD. See *Adanſonia*.

MONK'S-HOOD. See *Aconitum*.

MONK'S-RHUBARB. See *Rumex*.

MONNIERIA. (*So named from Monſ. Monnier of Paris.*)

Lin. gen. n. 850. *Reich. n.* 918. *Schreb. n.* 1152. *Laeſt. it.* 179. *Aubl.* 293. *Juſſ.* 421.

Claſſ. 17. 1. Diadelphia Pentandria.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, permanent: upper ſegment linear, long, curved in, covering the corolla, the outer lanceolate and ſhorter by half, the reſt blunt, ſhort.

COR. tubular, ringent: *tube* cylindric, more contracted in the middle, curved: *border* two-lipped: *upper lip* undivided, blunt, ovate: *lower lip* four-cleft, ſtraight: *ſegments* oblong, blunt.

Nectary an ovate ſcalelet at the baſe of the germ below the lower baſe.

STAM. *Filaments* two, flat, membranaceous: *upper* concave, biſid at top: *lower* flat, triſid. *Anthers* on the upper filament two, connate, hirſute within, including the ſtigma: on the lower filament three, round, very minute.

PIST. *Germ* roundiſh, five-lobed, five-cornered. *Style* ſolitary, filiform. *Stigma* headed, oblong, flat within, orbicular, with a ſharp edge.

PER. *Capſules* five, ovate, compreſſed, two-valved along half the future.

SEEDS ſolitary, ovate, with the inner margin ſtraighter, blunter, incloſed in a two-valved, dry, deciduous *Aril*.

ESSENTIAL CHARACTER.

Cal. five-parted, with the upper ſegment long. *Cor.* ringent. *Stam.* two, the upper with two anthers, the lower with three. *Capſ.* five, one-ſeeded.

SPECIES.

1. Monnieria trifolia.

Lin. ſpec. 986. *Juſſ.* 636. *Reich.* 3. 376. *Laeſt. it.* 197. *Aubl. guian. t.* 293.

DESCRIPTION, *&c.*

This is an annual plant, with a dichotomous ſtem, ternate leaves, and white flowers in a biſid ſpike[a].

Native of America.

MONOPHYLLON. See *Convallaria*.

MONORCHIS. See *Ophrys*.

MONOSPERMALTHÆA. See *Wallheria*.

MONOTROPA. (*From μονος, alone, and τρεπω to turn.*)

Lin. gen. n. 536. *Reich. n.* 583. *Schreb. n.* 737. *Juſſ.* 430. Orobanchoides *Tournef. mem. acad.* 170. Hypopitys. *Dill. gen.* 7.

Claſſ. 10. 1. Decandria Monogynia.

GENERIC CHARACTER.

CAL. none, unleſs the five outer petals be taken for a coloured calyx.

COR. Petals ten, oblong, parallel-erect, ſerrate at the tips, deciduous, of which the alternate outer ones are gibbous at the baſe, inwardly concave melliferous.

STAM. *Filaments* ten, awl-ſhaped, erect, ſimple. *Anthers* ſimple.

PIST. *Germ* roundiſh, acuminate. *Style* cylindric, the length of the ſtamens. *Stigma* blunt-headed.

[a] L'Heritier. [a] Hort. kew. [a] Linn.

PER.

PER. *Capsule* ovate, five-cornered, blunt, five-valved.
SEEDS numerous, chaffy.

OBS. *Such is the terminating flower: but if there be any lateral flowers, they exclude a fifth part of the number, in all parts of the fructification.*

ESSENTIAL CHARACTER.

Cal. none. *Pet.* ten, the five outer hollowed-melliferous at the base. *Capf.* five-valved. *A fifth part excluded in some.*

SPECIES.

1. Monotropa Hypopithys. *Yellow Bird's-neſt.*
Lin. ſpec. 555. *fuſ.* 402. *Reich.* 2. 280. *fl. ſuec.* n. 351. *Hudſ. angl.* 175. *Wither. arr. ed.* 3. 398. *Lightf. ſcot.* 214. *Engl. bot.* 69. *Sibth. oxon. n.* 398. *Camel. fib.* 4. 177. *Willich obſ.* 70. *Pollich pal. n.* 393. *Knipb. cent.* 10. *n.* 63. *Fl. dan. t.* 232. *Allion. pedem. n.* 1022. *Villars dauph.* 3. 582. *Krock. ſileſ. n.* 622.
Hypopithis multiflora. *Scop. carn. n.* 178. *Hall. helv. n.* 1002. *Riv. tetr.*—lutea. *Dill. giſſ.* 99. *app* 134. *t.* 7. *Raii ſyn.* 317.
Orobanche quæ Hypopithys dici poteſt. *Bauh. pin.* 88. *prodr.* 31.
O. Hypopithys lutea. *Montz. pug.* 3. *f.* 5.
O. flore breviore duplici, verbaſculi odore. *Mor. hiſt.* 3. 504. *f.* 12. *t.* 16. *f.* 20.
O. verbaſculi odore. *Plot oxf.* 148. *t.* 9. *f.* 6. *Pluk. phyt. t.* 209. *f.* 5.
Lateral flowers eight-ſtamened, terminating flower ten-ſtamened.

2. Monotropa uniflora.
Lin. ſpec. 555. *fuſ.* 402. *Reich.* 2. 280. *Gron. virg.* 41.
Orobanche monanthos virginiana flore majore pentapetalo. *Mor.* 502. *ſ.* 5.
O. virginiana, flore pentapetalo cernuo. *Pluk. phyt. t.* 209. *f.* 2. *Cateſb. car. t.* 36.
Stem one-flowered, flower ten-ſtamened.

DESCRIPTIONS, &c.

1. Root compoſed of imbricate ſcales, and paraſitical, the radical fibres adhering to the roots of the trees under which it grows. Stem from five to ſeven inches high, upright, not branched, ſmooth and ſhining, round, having no leaves, but only ovate, blunt, alternate ſcales, yelloviſh white when young, but ruſty black in the maturity of the plant, terminated by a looſe ſpike of flowers that nods, but in the ſeeding ſtate becomes erect. Flowers pedunculed, each ſupported by its whitiſh ſcaleſet or bracte; they are eight lines in length, and four in diameter. Calyx or outer petals ſmooth, whitiſh and ſhining, very ſlightly ciliated at the edge. Corolla or inner petals of the ſame colour. Pollich reckoned about nine flowers in a raceme. Linnæus remarks, that the whole plant ſmells ſweet, and is of a pale yellow colour, which peculiarity is generally confined to paraſitical plants, and ſuch as grow in very ſhady ſituations. The ſmell is deſcribed as being like that of Primroſe or Beans in bloſſom*.

Willich obſerves that the number of parts varies too much in this plant, to admit of the rule which Linnæus lays down reſpecting it being general. In a ſpecimen which he had before him the terminating flower, beſides the four ſcales under it, had twelve petals, as many ſtamens, a ſtigma with five lines, and a five-celled fruit: but the lateral flowers had four, ſix, ſeven, eight, ten petals, ſix, eight, nine, ten, eleven, twelve ſtamens, four and five lines on the ſtigma, and the fruit four or five-celled.

This plant is nearly allied to Orobanche in its habit and appearance, but the ſtructure of the flowers is different†.

In Sweden it is given dry to ſheep that are affected with a cough*.

Native of many parts of Europe, as Sweden, Denmark, Germany, France, Italy, Britain, alſo in Canada; in woods, eſpecially fir woods, and where the ground is covered with rotten leaves, at the roots of fir, pine, beech, oak, &c. With us in Oxfordſhire, in Stokenchurch woods and between Nettlebed and Henley, Bedfordſhire, Buckinghamſhire, Berkſhire, frequent; Maidſtone in Kent; Tring in Hertfordſhire; in the beech woods of Suſſex; in Selborne-hanger, Hampſhire; Uley in Glocesterſhire; Enville, in Staffordſhire; Shottiſham and Stoke in Norfolk. In Scotland, but not common.

2. Stem ſingle, fleſhy, the ſize of a ſtraw, a long ſpan in height. Leaves broadiſh, pointed, ſattiſh. Flower one, terminating, an inch in diameter, compoſed of five petals, a quarter of an inch wide. Capſule turgid, oblong, ending in a point, the ſize of a hazel nut‡.

Native of North America: whence it was ſent by Banſter. Moriſon's figure is bad, and Catesby's good.

MONSONIA. (*So named in honour of Lady Ann Monſon.* See Thunberg's travels, vol. 2. 132. Engl. edit.)
Lin. gen. Reich. n. 977. *Schreb. n.* 1120. *Cavan. diſſ.* 3. 179. 4. 193. *Juſſ.* 269.
Claſſ. 16. 5. Monadelphia Dodecandria.
Nat. order of *Geuinales. Gerania*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* lanceolate, awned, equal, permanent.
COR. *Petals* five, obovate, præmorſe-toothed, longer than the calyx, inſerted into the baſe of the pitcher of ſtamens.
STAM. *Filaments* fifteen, united in five bodies, three in each, all connected at the baſe and forming a very ſhort pitcher. *Anthers* oblong.
PIST. *Germ* five-cornered, ſhort. *Style* awl-ſhaped. *Stigmas* five, oblong.
PER. *Capſule* five-cornered, five-celled: each cell fixed to a very long, twiſted, terminating tail.
SEEDS ſolitary.

OBS. *Allied to Geranium.*

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* five-petalled. *Stam.* fifteen, united into five filaments. *Style* five-cleft. *Capſ.* five-grained.

SPECIES.

1. Monſonia ſpecioſa. *Fine-leaved Monſonia.*
Lin. ſyſt. 697. *Reich.* 3. 584. *mant.* 105. *ſuppl.* 342. *Curt. magaz.* 73. *Ait. hort. kew.* 3. 100.
M. grandiflora. *Burm. prodr.* 23.
Geranium folio tenuiſſime diſſecto, flore ſingulari ampliſſimo. *Breyn. prodr.* 3. *app.* 31. *t.* 21. *f.* 2.
Leaves quinate, leaflets bipinnate.

2. Monſonia lobata. *Broad-leaved Monſonia.*
Lin. ſyſt. 697. *Montin in act. gothob.* 2. *p.* 1. *t.* 8. *Ait. hort. kew.* 3. 100. *Curt. magaz.* 385.
M. filia. *Lin. ſyſt.* 696. *ſuppl.* 341. *Cavan. diſſ.* 3. 180. *t.* 74. *f.* 2.
Leaves cordate lobed toothed.

3. Monſonia ovata. *Undulated Monſonia.*
Cavan. diſſ. 4. 193. *t.* 113. *f.* 1. *Ait. hort. kew.* 3. 100.
Leaves oblong, ſubcordate, crenate, waved.

DESCRIPTIONS, &c.

1. Leaves radical, petioled, ſeveral, bipinnate-quinate: leaflets linear, pinnate: pinnas ſublanceolate. Scapes two or three, one-flowered, a ſpan high, twice as long as the leaves, having in the middle a ſmall ſix-leaved involucre, with lanceolate leaflets. Flower handſome. In habit and fructification it bears great affinity to Geranium, but is diſtinguiſhed from it by its appearance like Anemone, and by the difference in the ſtamens and ſtyle‡.

2. According to the younger Linnæus, this is very like the preceding, differing in no reſpect from it in the ſcape, involucre, calyx, petals, ſtamens, piſtil, and even the very ſingular crown of the germ. But the leaves are ſimple, bluntly ſeven-lobed, crenate, blunt, ſubpubeſcent, (as indeed the whole herb is) entirely reſembling thoſe of Geranium vitifolium. The fruit has a beak to it, with a very long point, as in Geranium ciconium. Capſule retuſe and as it were crowned§.

Mr. Curtis adds, that it differs from ſpecioſa principally in its foliage, which is undivided; and that the flowers are ſmaller, more handſome in bud than when

* Lightf. Pollich. Krocker. † Villars. ‡ Linn. ſuec.

* Moriſon. † Linn. mant. ‡ Linn. ſuppl.

open, and more frequently produced, but requiring the influence of the ſun to make them expand fully.

Cavanilles ſeems to think it perfectly diſtinct from the preceding.

3. The ſtem of this ſpecies is herbaceous, columnar and filiform: the leaves oppoſite, about equal in length to the footſtalks, ovate, crenated, about half an inch long, with ſome hairs: the ſtipules are two on each ſide, ſubulate: flowers axillary, on very long footſtalks; about the middle of the length of the footſtalk are two ſtipules: the footſtalk of the flowers is upright: when bearing the fruit it is declinate-erect from the ſtipules, one-flowered. Calyx conſiſts of five ovate-oblong, ſharp, awned leaflets. Corolla of five petals with very narrow claws, gradually dilating towards the tip, and there crenate-premorſe, whitiſh-yellow, with three longitudinal ſtreaks. The crown or urceolus of ſtamens ſurrounding the germ is monophyllous, reddiſh, parted into five ſegments, each of which is terminated by three filaments: the anthers are ovate-oblong. The germ is pentagonal, top-ſhaped, villoſe: ſtyle ſimple; ſtigmas five. Fruit five capſules, monoſpermous, oblong, acute at their baſe, and terminated by a tortile awn of about an inch and half in length[1].

They are all natives of the Cape of Good Hope, and were introduced here in 1774, by Mr. Francis Maſſon. The two firſt are perennial, and flower in april and may. The third is biennial and flowers in auguſt[2].

PROPAGATION AND CULTURE.

1. This plant rarely or never ripening its ſeeds with us, may be increaſed by cuttings of the root planted in pots of good mould, and plunged in a tan-pit, watering them occaſionally: in due time buds appear on the tops of the cuttings left out of the ground. It may be treated as a hardy greenhouſe plant, and may be ſheltered even under a frame in winter[3].

The ſecond ſort may be raiſed in the ſame way, and the third from ſeeds.

MONTANA. See *Rhododendron.*

MONTIA. (*So named by Michels, in honour of Joſeph Monti, Doctor of Philoſophy, Profeſſor of Botany, and Preſect of the Medical Garden at Bologna. Author of* Agri Bononienſis ſtirpium Catalogi Prodromus 1719. qu.)

Lin. gen. n 101. *Reich. n.* 107. *Schreb. n.* 133. *Mich.* 13. *Juſſ.* 313. *Gærtn. t.* 129. Cameraria. *Dill. gen.* 6. Aliſinoides. *Vaill. bot. par.*

Claſſ. 3. 3. Triandria Trigynia.

Nat. order of *Portulacæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* two-leaved: *leaflets* ovate, concave, blunt, erect, permanent.

COR. one-petalled, five-parted, three of the ſegments alternate, ſmaller, ſtamniferous.

STAM. *Filaments* three, capillary, the length of the corolla, into which they are inſerted. *Anthers* ſmall.

PIST. *Germ* turbinate. *Styles* three, villoſe, ſpreading. *Stigmas* ſimple.

PER. *Capſule* turbinate, blunt, covered, one-celled, three-valved.

SEEDS three roundiſh.

OBS. *The calyx often varies with three leaflets, and then it often produces five ſtamens.*

ESSENTIAL CHARACTER.

Cal. two-leaved. *Cor.* one-petalled, irregular. *Capſ.* one-celled, two-valved.

SPECIES.

1. Montia fontana. *Water Chick-weed.*

Lin. ſpec. 129. *Juſſ.* 128. *Reich.* 1. 244. *Willd.* 487. *Fl. lapp. n.* 51. *Suec. n.* 115. *Gærtn. fruct.* 1. 220. *Cyrill. neap.* 31. *t.* 11. *f.* 1. *Hudſ. angl.* 60. *Wither. arr. ed.* 3. 175. *Curt. lond.* 3. 8. 188. *Relh. cant. n.* 109. *Hall. helv. n.* 301. *Fl. dan. t.* 131. *Pollich pal. n.* 134. *Gunn. norv. n.* 80. *Hoffm. germ.* 1. 50. 2. 158. *Allion. pedem. n.* 290. *Krock. ſilef. n.* 196. *Villers. dauph.* 3. 651.

M. aquatica minor. *Mich. gen.* 18. *t.* 13. *f.* 2.

Cameraria arvenſis minor. *Dill. giſſ.* 46.

Aliſmeformis paludoſa tricarpos. *Pluk. phyt. t.* 7. *f.* 5.

Aliſne paluſtris, portulacæ aquaticæ ſimilis. *Raii hiſt.* 1035. *ſyn.* 352. *Pet. brit. t.* 10. *f.* 12.

Portulaca arvenſis. *Bauh. pin.* 288.

β. Montia aquatica major. *Mich. gen.* 15. *t.* 13. *f.* 1.

Anagallis aquatica ſubrectior. *Bauh. hiſt.* 3. 186.

Aliſne paluſtris minor, folio oblongo. *Bauh. prodr.* 118.

Aliſnoides annua verna. *Vaill. par. t.* 3. *f.* 4.

DESCRIPTION, *&c.*

Root annual, fibrous. Stalks numerous, round, ſmooth, ſucculent, reddiſh, ſpreading on the ground, and ſometimes ſtriking root, two or three inches in length, branched and jointed. Leaves oppoſite, ſeſſile, oblong, ſomewhat pointed, narrowed near the baſe, rather fleſhy, ſmooth and of a pale green colour. Peduncles generally growing three together, each ſupporting one flower, proceeding from a little ſcale in the boſom of the leaves, as ſoon as the flowering is over hanging down, afterwards becoming upright and longer than the leaves. Corolla white. Filaments ſhorter than the corolla to which they are connected. Germ large at top, ſmall at bottom, and ſomewhat triangular. The permanent and encreaſing calyx, truncated at top inveſts the capſule[4], which is ſubglobular, and contains three ſeeds, which are turgidly lenticular or ſubglobular, beaked, rugged with very cloſe tubercles, black, fixed by a very ſhort umbilical chord to the bottom of the capſule[5].

The flowers uſually appear in a half-opened ſtate, whence one of the Engliſh names *Blinks*, but when the ſun ſhines on them they expand[6]. Stamens three or five. Capſules ſubtriquetrous, the valves burſting elaſtically[7].

Cyrillo has figured a raceme of this plant with four or five flowers, which is an unuſual luxuriance.

Allione remarks, that the larger variety grows in bogs, the ſmaller one where water has ſtood in winter; that at firſt ſight they appear to differ, the larger having fewer flowers and on longer peduncles from the axils; in the ſmaller the flowers are rather more abundant on the top of the plant, beſides the axillary ones, the leaves are alſo much ſmaller.

Native of many parts of Europe, flowering in may, and ripening its ſeed at the beginning of june. With us it is not uncommon, as on Blackheath, Hampſtead-heath, Hanging-wood Charlton, about Streatham and Sydenham, Harefield-common, wet heaths in Norfolk, Hill of Health and Gamlingay-heath, Cambridgeſhire, Badby in Northamptonſhire, Bridgeford in Nottinghamſhire, Hockley Pool Grate near Birmingham, Shotover-hill and South Leigh-heath in Oxfordſhire, Marazion-marſh in Cornwall.]

MONTIA. See *Helioscorpus.*

[MONTINIA. (*In memory of Laurence Montin, a very acute Swediſh botaniſt.*)

Lin. gen. Schreb. n. 1506. *ſuppl.* 65. *Thunb. nov. gen.* 27. *Gærtn. t.* 33. *Juſſ.* 318.

Claſſ. 22. 4. Dioecia Tetrandria.—Tetrandria Monogynia. *Smith.*

Nat. order of *Calycanthemæ. Onagræ,* Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* four-toothed, very ſhort, erect.

COR. *Petals* four, ovate, very blunt, ſpreading, inſerted into the calyx.

STAM. *Filaments* four.

* *Female.*

CAL. ſuperior—as in the male.

COR. as in the male.

STAM. *Filaments* four, within the teeth of the calyx, very ſhort. *Anthers* none.

PIST. *Germ* inferior, concave-plane, ſmooth. *Style* cylindric, thick, bifid, ſhorter than the corolla. *Stigmas* kidney-form.

PER. *Capſule* ovate-oblong, two-celled, gaping longitudinally. *Partition* thick, two-lobed.

[1] Cavanilles. [2] Hort. kew. [3] Curtis. [4] Curtis [5] Gærtner. [6] Curtis. [7] Krocker.

Seeds very many, imbricate, ovate, compressed, winged at the edge.

Obs. *Male flowers sometimes three-cleft, five-stamened.*

ESSENTIAL CHARACTER.

Cal. four-toothed, superior. *Pet.* four.

Fem. *Filaments* barren. *Style* bifid. *Caps.* oblong, two-celled.

SPECIES.

1. Montinia acris. *Glaucous Montinia.*
Lin. fil. 883. *Suppl.* 427. *Thunb. prodr. cap.* 28.
M. caryophyllacea. *Thunb. in act. lund. p.* 1. 108. *Act. hort. kew.* 3. 395. *Smith spicil.* 14. *t.* 15. *Burm. afr. t.* 90. *f.* 1, 2. *Plak. mant. t.* 333. *f.* 3. & *phyt. t.* 174. *f.* 7.
M. fruticosa. *Gærtn. fruct.* 1. 170.

DESCRIPTION, &c.

Root woody. Stem shrubby, angular, branched, smooth, a foot high. Branches alternate, little divided, glaucous, scarred with the residue of the petioles. Leaves alternate, oblong-oval, blunt, nerved, veined, quite entire, smooth, thickish, erect. Petioles very short, subdecurrent, falling off above the base. Flowers terminating, solitary, sometimes but seldom five-cleft, white. Fruit with an acrid flavour[1]. It is an inferior capsule, crowned with the four very spreading toothlets of the calyx, two-valved: partition very thin, contrary to the valves, arising from the receptacle. Seeds in each cell six or eight, rather large, leafy-compressed, concave, slightly emarginate at the navel, with a broad entire membrane about the edge, bay-coloured[1].

Native of the Cape of Good Hope, on sandy hills; found by Sparrman, Thunberg, &c. Introduced here by Masson in 1774.

Moon-Seed. See *Menispermum.*

——— Trefoil. See *Medicago.*

——— Wort. See *Ofmunda.*

MORÆA. (*So named by Mr. Miller in honour of Robert More, Esq. of Shrewsbury.*)
Lin. gen. n. 60. *Reich. n.* 66. *Schreb. n.* 80. *Gærtn. t.* 13. *Juss.* 58.
Class. 3. 1. Triandria Monogynia.
Nat. order of *Ensatæ. Irides*, Juss.

GENERIC CHARACTER.

Cal. *Spathes* two-valved.
Cor. six-petalled: three inner parts spreading; the rest as in Iris.
Stam. *Filaments* three, short. *Anthers* oblong.
Pist. *Germ* inferior. *Style* simple. *Stigmas* three, bifid.
Per. *Capsule* three-cornered, three-grooved, three-celled.
Seeds very many, round.

ESSENTIAL CHARACTER.

Cor. six-petalled, the three inner parts spreading, narrower. *Stigma* trifid.

SPECIES.

* *Scape axillary.*

[1. Moræa melaleuca. *Dark-flowered Moræa.*
Thunb. diss. n. 1. *t.* 1. *f.* 3. *prodr.* 10. *Lin. spec. Willd.* 240.
M. lugens. *Lin. fil.* 93. *Suppl.* 99. *Ait. hort. kew.* 1. 75.
Scape axillary, leaves subfalcate, flower subsolitary.
2. Moræa spiralis. *Spiral-flowered Moræa.*
Lin. fil. 93. *Willd.* 240. *Suppl.* 99. *Thunb. diss. n.* 2. *prodr.* 10.
Scape compressed jointed, leaves erect, flowers alternate mostly directed one way.
3. Moræa pusilla. *Dwarf Moræa.*
Thunb. diss. n. 4. *prodr.* 11. *Lin. spec. Willd.* 241.
Scape axillary, leaves distich, flower subsolitary.
4. Moræa magellanica. *Magellanic Moræa.*
Lin. spec. Willd. 241.
Ixia? pumila. *Forst. in comm. goett.* 9. *p.* 20. *t.* 2.
Galaxia obscura. *Cavan. diss.* 6. 341. *t.* 189. *f.* 4.
Tapeinia. *Juss. gen.* 59.
T. magellanica. *Gmel. syst.* 108.
Stem axillary leafy, leaves distich sickle-shaped, flower terminating solitary.

[5. Moræa gladiata. *Sword-leaved Moræa.*
Thunb. diss. n. 8. *prodr.* 11. *Lin. fil.* 93. *Willd.* 241.
Ixia gladiata. *Lin. suppl.* 93.
Scape and leaves compressed, spike lateral solitary, involucre only half the length of it.
6. Moræa aphylla. *Leafless Moræa.*
Lin. fil. 93. *Willd.* 242. *Suppl.* 99. *Thunb. diss. n.* 9. *t.* 2. *f.* 1. *prodr.* 11.
Scape and leaves compressed, spike lateral solitary, involucre many times shorter.
7. Moræa filiformis. *Filiform Moræa.*
Lin. fil. 93. *Willd.* 242. *Suppl.* 100. *Thunb. diss. n.* 10. *t.* 1. *f.* 2. *prodr.* 11.
Scape and leaves compressed subfiliform, flower solitary terminating.

** *Scape round.*

8. Moræa spathacea. *Sheathy Moræa.*
Lin. fil. 92. *Willd.* 242. *Suppl.* 99. *Thunb. diss. n.* 11. *t.* 1. *f.* 1. *prodr.* 11.
Bobartia italica. *Lin. spec.* 78. *fl. zeyl. n.* 41. *amoen.* 1. 388. *Schum. in act. hafn.* 3. 8. *t.* 1.
Scape and leaves round hanging down, spikes lateral aggregate.
9. Moræa flexuosa.
Lin. fil. 93. *Willd.* 243. *Suppl.* 100. *Thunb. diss. n.* 12. *prodr.* 11.
Ixia longifolia. *Jacq. hort.* 3. 47. *t.* 90.
Scape round jointed, leaf reflex somewhat waved nerved.
10. Moræa polyanthos.
Lin. fil. 92. *Willd.* 243. *Suppl.* 99. *Thunb. diss. n.* 14. *prodr.* 11.
Scape round, leaves flexuose-erect, alternate segments of the corolla smaller.
11. Moræa cærulea.
Lin. spec. Willd. 243. *Thunb. diss. n.* 15. *t.* 2. *f.* 2. *prodr.* 11.
Gladiolus capitatus. *Lin. spec.* 53. *Diss. n.* 18.
Scape round, leaves distich, heads of flowers alternate, spathes membraneous entire.
12. Moræa plicata.
Lin. spec. Willd. 243. *Swartz descr.* 82.
M. palmifolia. *Jacq. ic.* 2. *t.* 227. *collect.* 3. 192.
Sisyrinchium latifolium. *Swartz prodr.* 17. *H. R. monsp.* 185.
S. palmifolium. *Cavan. diss.* 6. 348. *t.* 191. *f.* 1.
Ferraria parviflora. *Salisb. hort.* 43.
Ixia fol. ensiformibus plicatis glabris, caule ramoso. *Plum. amer.* 35. *t.* 46. *f.* 2.
Bermudiana palmæ folio, radice bulbosa. *Tournef. inst.* 388.
Scape round, leaves petioled oblong nerved plaited, racemes bifid.
13. Moræa umbellata.
Lin. spec. Willd. 244. *Thunb. diss. n.* 16. *prodr.* 11.
Scape round striated, spikes of flowers umbel-panicled, involucres two-leaved very long.
14. Moræa crispa.
Lin. spec. Willd. 244. *Thunb. diss. n.* 17. *prodr.* 11.
Scape round jointed, leaf convoluted curled reflex.]
15. Moræa iriopetala.
Lin. suppl. 100. *spec. Willd.* 244.
Iris plumaria. *Lin. fil.* 89. *Thunb. diss. n.* 16. *prodr.* 11.
I. lugubris. *Salisb. hort.* 42.
a. With the scales of the bulb distinct at the base.
M. juncea. *Lin. spec.* 59. *Mill. dict. n.* 2. *Gærtn. fruct.* 1. 39.
β. With the scales of the bulb connected at the base.
M. vegeta. *Lin. spec.* 59. *Mill. dict. n.* 1. *fig.* 159. *t.* 238. *f.* 1, 2.
Scape round, leaves linear, stigma multifid.
[16. Moræa iridioides.
Lin. fil. 93. *Willd.* 244. *mant.* 28. *Thunb. diss. n.* 18. *Gisseck. ic. fasc.* 1. *t.* 3. *Gærtn. fruct.* 1. 40. *Mill. fig.* 159. *t.* 239. *f.* 1. *Till. pis.* 89. *t.* 33. (Iris).
Scape round, leaves distich linear, flower subsolitary terminating.
17. Moræa chinensis.
Lin. fil. 93. *Willd.* 245. *Thunb. diss. n.* 19. *fl. jap.* 34.]

[1] Linn. Suppl. [2] Gærtner.

ixia chinenſis. *Lin. ſpec.* 52. *hort. upſ.* 16. *Trew. Ehret.* 23. *t.* 52. *Mill. dict.* 1. *Curt. magaz.* 171. *Dill. weſtr. n.* 38.

DESCRIPTION, *&c.*

[Linnæus remarks that the flower of Moræa differs from that of Iris, in having all the ſix petals equally ſpreading. This being the chief difference, Gærtner is of opinion that Moræa is too artificial a genus, and might more properly be mixed partly with Iris and partly with Ixia. Moræa, according to Willdenow differs from Siſyrinchium as Ixia does from Galaxia, in having the ſtamens not monadelphous. For this reaſon he refers Moræa ixioides and collina of Thunberg, and ferrariola of Jacquin to the genus Siſyrinchium. But ſeveral of theſe genera border ſo cloſe upon each other, that it is ſometimes not eaſy to determine which of them ſome ſpecies belong to. The Siſyrinchia certainly have the ſame habit and flowers with the Moræas.

1. Petals alternate, the three outer white, the three inner ſmaller and black. Stigma many-parted.—Native of the Cape of Good Hope [a]. Introduced here in 1786, by Mr. Francis Maſſon [b].

2. Corolla equal, greeniſh white on the outſide, white within, rolled ſpirally during the night. Stigma ſimple, villoſe.—Native of the Cape [c].

3. Scape ſimple erect one-flowered or two-flowered. Leaves linear-lanceolate ſubfalcated ſtriated ſmooth, ſhorter than the ſcape. Corolla blue, becoming ſpiral when it is paſt; the alternate ſegments narrower.—Native of the Cape [d].

4. This plant is only an inch or an inch and half high, covered with ſtriated ſheathing leaves. Pedunclé very ſhort one-flowered. Spathe two-valved membranaceous. Corolla white. Stigma trifid. This has been placed in the genus Ixia by Forſter, Galaxia by Cavanilles, and Tapeinia by Juſſieu; but Willdenow has made it a Moræa on account of the corolla being ſix-petalled. Ixia has a tube to the corolla, and Galaxia has cohering filaments.—Native of the Straits of Magellan [e]. See Galaxia.

5. Culms naked long ſmooth and even. Leaves narrow-enſiform very long ſmooth and even, very finely ſtriated. Spikes terminating, uſually three, imbricate, with embracing blunteſh awnleſs glumes. Bractæ enſiform behind the ſpikes, and not longer than them. Corolla yellow, with the outer petals red on the outſide. Styles three.—Native of the Cape [f].

6. Corolla yellow. Stigmas three. This ſpecies is ſingular in being entirely leafleſs, and having the flowers lateral as in Juncus.—Native of the Cape [g].

7. The flowers with their ſpathes reſemble thoſe of Dianthus. Corolla yellow. Stigmas three.—Native of the Cape [h].

8. Leaves and ſtems filiform, the toughеſt and ſmoothеſt of all the ſpecies. Scape terminating in a two-leaved ſpathe, with a head of flowers fenced by ſmaller awl-ſhaped ſpathes. Corolla yellow. Stigmas three [i].

Linnæus formed the character of Bobartia from an imperfect ſpecimen of this plant, as Schumacher has clearly ſhown [k].

It grows very abundantly on the hills near the Cape of Good Hope.

9. Scape ſtriated, upright, ſmooth, a foot high and more. Leaf one (ſeldom two) at the root, linear, ſtriated, ſhorter than the ſcape; branch-leaves ſimilar. Flowers alternate on the flexuoſe rachis of the ſcape. Spathes oblong, acute, jagged. Segments of the corolla ſcarcely connate at the baſe, nearly equal, ovate, blunt with a point, concave, with a raiſed longitudinal line, ſpreading, yellow above, three alternate ones greeniſh underneath. Stigmas ſix or thereabouts, two always approximating, a little longer than the filaments.—Native of the Cape [l].

10. Scape jointed, panicled, upright, a foot high. Branches and branchlets filiform, upright, jointed. Leaf next the root linear, ſtriated, upright, curved, longer than the ſcape: branch-leaves ſimilar. Flowers one, two, or three. Corolla blue, almoſt regular: ſegments ovate, blunt, ſpreading; three alternate a little ſhorter and narrower, with a yellow line below, green on the outſide. Stigmas three, ſcarcely two-lipped, but bifid.—Native of the Cape [m].

11. Scape ſimple, ſtriated, ſmooth, upright, two feet high. Root-leaves very many, diſtich, linear, ſtriated, ſmooth, upright, ſhorter than the ſcape. Flowers lateral, alternate, ſpike-headed, very many. Heads on round pedunclés. General ſpathes boat-ſhaped, acuminate, the length of the head: partial ſpathes ovate, entire, membranaceous at the edge. Corolla blue: ſegments ovate, blunt, concave, veined, from upright ſpreading, ſmooth, alternately ſomewhat narrower. Filaments very ſhort, blue. Anthers oblong, blunt, bifid at the baſe, grooved on the outſide, even within, inſerted laterally, yellow, almoſt the length of the corolla. Germ ſmooth. Style the length of the ſtamens, ſhorter than the corolla, blue. Stigma ſimple, blunt, three-cornered. Capſule oblong, gradually attenuated below, ſmooth.

Native of the Cape [n]. This has been already mentioned, but not deſcribed under Gladiolus.

12. Bulb ovate, covered with red membranaceous coats, yellow in the middle. Leaves radical, from two to three feet long, enſiform, broad, narrower and as it were petioled at the baſe, towards the root membranaceous and ſomewhat ſheathing, purple, longitudinally ſix-nerved, folding over each other, very ſmooth. Scapes rather longer than the leaves, roundiſh or compreſſed a little, ſomewhat ſtriated, ſmooth, nodding a little at top, terminated by a ſpathe-ſhaped lanceolate upright nerved leaflet, from the ſheathing baſe of which iſſues a pedunclé, two inches long, and bifid; each pedicel has a ſmall leaflet under it. Flowers white, ſpathaceous, in a ſort of head, riſing gradually on very ſhort pedicels. Spathe two-leaved, anciptal: leaflets ovate, acute, ſlightly ſtriated, keeled, one of them bifid, ſmooth, including from ſix to ten flowers ſeparated by ovate acute membranaceous pale ſcales. Corolla ſix-petalled. Petals oblong, equal, from upright ſpreading, veined, white, flat with the baſe contiguous to the apex of the germ. Filaments ſhorter than the petals, about the apex of the germ, ſhortly connate. Anthers linear, bifid at bottom. Germ obovate, ſubtrigonal. Style awl-ſhaped, the length of the ſtamens. Stigma three-parted; the parts lanceolate, upright.

Native of the Weſt Indies, as in the mountainous paſtures of Jamaica on the weſt ſide; flowering the whole year, opening at four o'clock in the afternoon, one flower only coming out at a time [o].

13. Scape ſmooth, upright, ſimple, a foot high. Flowers terminating, one, two or three, pedunclé, blue. Involucres two under the umbel, linear, ſtriated, one ſhorter, acuminate, a little longer than the umbel: the other linear, reflex, the length of the ſcape.—Native of the Cape of Good Hope [p].

14. Scape ſimple, a ſpan high. One leaf next the root linear, the length of the ſcape. Flowers terminating, pedunclé, few, blue.—Native of the Cape [q].

15. a. Bulb with the ſcales connected at the ſides, but diſtinct at the baſe: with ten compreſſed teeth, and as many alternately ſhorter. Culm branched; branches three or four. Glumes two-valved, two-flowered. Flowers white [r]. Capſule inferior, ovate, half an inch long, rounded three-cornered, three-grooved, with knobs where the ſeeds are, papery, white, three-celled, three-valved. Seeds fixed to the central margin of the partitions, in a double row, from eight to twelve in each cell, ſubglobular, acuminate towards the umbilicus, ſmooth, of a reddiſh roſt colour [s].

Bulb ſmall, a little compreſſed on the ſides, with a ſmooth dark-coloured ſkin. Leaves three or four, awl-ſhaped, pale green, from five to ſeven or eight inches in length, and about half an inch broad, terminating with three angles. Scapes about ſix inches

[a] Linn. ſuppl. [b] Herb. Linn. [c] Linn. ſuppl. [d] Thunberg. [e] Willdenow. [f] Linn. ſuppl. [g] Ibid. [h] Ibid. [i] Ibid. [k] Willdenow. [l] Thunberg. [m] Thunberg. [n] Ibid. [o] Swartz [p] Thunberg. [q] Ibid. [r] Willdenow. [s] Gærtner.

high,

high, generally bending at the lower joint; with a small leaf at each joint, the base of which almoſt ſurrounds the ſcape. Flowers two terminating, encompaſſed by a withered ſpathe. Corolla orange; the parts pretty broad at top, connected at the baſe.

β. Bulb with ſcales connected at the baſe, biſid, depreſſed, but not compreſſed. Glume two-valved, two-flowered. Flowers two, ſeldom more than two on a ſcape.]

Roots fibrous, like thoſe of the flag-leaved Iris, whence ariſe many ſmall ſword-ſhaped leaves, five or ſix inches long, and half an inch broad in the middle, diminiſhing towards both ends, of a deep green colour, lying over each other at the baſe. Scape about eight inches high, having one ſmall leaf at each joint, and terminated by one flower, covered with a two-valved ſpathe. Corolla dirty white, each part having a bluſh of purple towards the upper part, and a pretty broad ſpot of yellow towards the claw. Stigma trifid.

Natives of the Cape of Good Hope. They flower in June, and the ſeeds ripen at the end of July. It was to theſe that Mr. Miller gave the name of Moræa from Robert More, Eſq. who, as he ſays, was well ſkilled in botany and other parts of natural hiſtory. [He cultivated them in 1758[1].

16. Root fibrous. Scape a ſpan or foot high, roundiſh or ſcarcely compreſſed, jointed, ſmooth, ſimple or little branched, upright, the length of the leaves. Leaves enſiform, narrowed at the inner baſe, nerved, ſmooth, acuminate, upright. Flowers from the uppermoſt axils of the leaves, ſometimes three, but often only one. Spathe two-valved. Germ pedicelled, ſubtrigonal, ſtriated. Corolla ſix-petalled; the three outer petals obovate, oblong, bearded, ſpreading, with a yellow ſpot in the middle: the three inner white without ſpots, ſpreading like the outer ones. Style ſhort, thick. Stigmas petaloid, ſpreading, blue, biſid, as in Iris[2]. Capſule oblong, obſoletely three-cornered, coriaceous, black-brown, very finely ſtriated. Seeds numerous, variouſly angular, depreſſed, with two flat ſides, the others curved with the ſides of the cells; they are thick, black-brown with confluent ſpots[3].

Native of the Cape of Good Hope, according to Miller and the Kew catalogue; but of the Levant, according to Thunberg. Cultivated by Mr. Miller in 1758[4].

17. The ſtyle is inclined. The corolla being ſix-petalled, it is a ſpecies of Moræa; the Ixias having a tube[5]. This has already been ſufficiently deſcribed under Ixia chinenſis. Mr. Curtis thinks that it has ſcarcely any affinity with Moræa.

The corolla in this genus is ſaid to be ſix-petalled in the generic deſcription given above; it is however rather one-petalled and ſix-parted, as in Iris, at leaſt in moſt of the ſpecies; but the connection at the baſe is ſo ſlight, that it is difficult to determine in ſome caſes whether we ſhould conſider the corolla as one-petalled or ſix-petalled. It is the latter in ſpecies 4, 12, 16, 17; in the reſt it is ſubmonopetalous, or ſubhexapetalous.

In the generic character it is ſaid that there are three ſtigmas, or that the ſtigma is trifid. The number three is certainly predominant; but the ſtigma is ſimple in 2 and 11; many-parted in 1 and 15; fexid in 9; in the reſt biſid. Species 5 has three ſtyles.

The corolla is black and white in 1: white in 2, 4, 12, 15, 16; blue in 3, 10, 11, 13, 14: and yellow in 5, 6, 7, 8, 9.]

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds, offſets, or parting the roots; all which operations are beſt performed in autumn. Sow the ſeeds in ſmall pots, plunged into a bed of old tanner's bark, under a common frame. The plants alſo require this ſort of ſhelter in winter, being apt to draw up weak when placed in the dry ſtove. If they can enjoy the free air, even in winter, when the weather is not cold, and are ſecured from froſt and hard rain, they flower and ripen their ſeeds better than with more tender management. In ſummer they ſhould be fully expoſed to the open air till October, when they ſhould be removed into ſhelter.

[Moræa. See *Ariſtea*.

Morogana. See *Zygophyllum*.]

MORINA. (*So named by Tournefort, who diſcovered this plant in his travels in the Levant, in honour of Louis Morin, M. D. member of the academy of ſciences at Paris, who firſt raiſed it from ſeed in his garden at the Abbey of St. Victor.*)

Lin. gen. n. 41. *Reich. n.* 44. *Schreb. n.* 52. *Tournef. t.* 430. *Juſſ.* 194. Diototheca. *Vaill. mem. acad. par.* 1722.

Claſſ. 2. 1. Diandria Monogynia.

Nat. order of *Aggregatæ*. *Diſſaceæ*, Juſſ.

GENERIC CHARACTER.

Cal. double. *Perianth of the fruit* inferior, one-leafed, cylindric, tubular, permanent; *mouth* toothed: *teeth* two oppoſite, longer; all ſubulate, acute.

Perianth of the flower ſuperior, one-leafed, tubular, biſid; *ſegments* emarginate, blunt, permanent, upright, the ſize of the outer.

Cor. one-petalled, two-lipped. *Tube* very long, widening above, a little curved in, filiform at bottom. *Border* flat, blunt: *upper lip* ſemibiſid, ſmaller; *lower* trifid: *ſegments* all blunt, uniform, the middle one more lengthened.

Stam. *Filaments* two, briſtle-ſhaped, approximating to the ſtyle, parallel, ſhorter than the border. *Anthers* erect, cordate, diſtant.

Pist. *Germ* globular, under the receptacle of the flower. *Style* longer than the ſtamens, filiform. *Stigma* headed-peltate, bent in.

Per. none.

Seed ſingle, roundiſh, crowned with the calyx of the flower.

ESSENTIAL CHARACTER.

Cal. of the fruit one-leafed, toothed—of the flower biſid. *Cor.* irregular. *Seed* one, under the calyx of the flower.

SPECIES.

1. Morina perſica.

Lin. ſpec. 29. *ſyſt.* 72. *Reich.* 1. 73. *Willd.* 152. *hort. cliff.* 14.

M. orientalis. *Neill. diſſ.*—carlinæ folio. *Tourn. cor.* 48. *it.* 3. 132. *ic.*

DESCRIPTION, *&c.*

Root taper and thick, running deep into the ground, ſending out ſeveral thick ſtrong fibres as large as a finger. Stem near three feet high, ſmooth, purpliſh towards the bottom, but hairy and green at the top. At each joint three or four prickly leaves, like thoſe of Carline Thiſtle, four or five inches long, an inch and half broad, of a livid green on the upper ſide, but of a pale green and a little hairy underneath, armed on theſe edges with ſpines. Flowers axillary on each ſide, ſome white and others purpliſh red on the ſame plant. They appear in July, but do not produce ſeed in England. [Tournefort remarks, that they have the odour of the Honeyſuckle.—Native of Perſia near Iſpahan.]

It was in the Engliſh gardens before the ſevere winter of 1740, which killed all the plants here, and in the Paris garden, ſo that the only plant remaining was in Monſ. Duhamel's garden.

PROPAGATION AND CULTURE.

This plant is propagated by ſeed, which ſhould be ſown ſoon after it is ripe in the autumn, otherwiſe the plants will not come up the following ſummer; for I have ſeveral times obſerved, where the ſeeds have been ſown in the ſpring, they have remained in the ground fourteen or fifteen months before the plants have appeared. Theſe ſeeds ſhould be ſown in the places where the plants are to remain, becauſe they ſend forth tap-roots, which run very deep into the ground; and when theſe are broken or injured in tranſplanting, the plants ſeldom thrive after. They may be ſown in open beds or borders of freſh light earth, being careful to mark the places, that the ground may not

[1] Willdenow. [2] Hort. kew. [3] Linn. mant. & Thunb. diſſ. [4] Gærtner. [5] Hort. kew. [6] Willdenow.

be disturbed; for it frequently happens, that the seeds do not come up the first year, when they are sown in autumn; but when they are sown in the spring, they never come up the same year. The ground where the seeds are sown must be kept clear from weeds, which is all that is necessary to be done, until the plants come up; where they are too close together, they should be thinned while young, so as to leave them near eighteen inches apart; after which time they will require no other culture but to keep them constantly clear from weeds; and in the spring, just before the plants put out new leaves, to dig the ground gently between them, and lay a little fresh earth over the surface of the bed to encourage them.

In autumn these plants decay to the ground, and send forth new leaves the following spring, but it will be three years from the time of the plants first coming up to their flowering, though after that time they will flower every season; and the roots will continue many years, provided they are not disturbed, or killed by very severe frost.

MORINDA. (Morus indica. *Indian Mulberry. So named by Vaillant, from the shape of its fruit, and its country.*)

Lin. gen. n. 235. *Reich. n.* 252. *Schreb. n.* 317. *Vaill. mem. acad. par.* 1722. *Juss.* 209. *Gærtn. t.* 29. Rojoc. *Plum.* 26. Phillyreastrum. *Vaill. mem.* 1722.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Aggregatæ. Rubiaceæ*, Juss.

GENERIC CHARACTER.

CAL. *Receptacle common* roundish, collecting sessile flowers into a globe.

Perianth five-toothed, scarcely observable, superior.

COR. one-petalled, funnel-form: *tube* cylindric: *border* five-cleft, acute, spreading very much: *segments* lanceolate, flat.

STAM. *Filaments* five, very short, inserted into the tube at top. *Anthers* linear, erect, almost the length of the tube.

PIST. *Germ* inferior. *Style* simple. *Stigma* bifid, thickish.

PER. *Berry* subovate, angular, compressed on all sides by the next, truncate, one-celled.

SEEDS two, convex on one side, flat on the other.

ESSENTIAL CHARACTER.

Flowers aggregate, one-petalled. *Stigma* bifid. *Drupes* aggregate.

SPECIES.

1. Morinda umbellata. *Narrow-leaved Morinda.*
   Lin. spec. 250. *Reich.* 1. 485. *fl. zeyl. n.* 81. *Gærtn. fruct.* 1. 145. *Laur. cochinch.* 140.
   Bancudus angustifolia. *Rumph. amb.* 3. 157. *t.* 98. *Burm. ind.* 52.
   Erect, leaves lanceolate-ovate, peduncles clustered.
2. Morinda citrifolia. *Broad-leaved Morinda.*
   Lin. spec. 250. *Reich.* 1. 485. *fl. zeyl. n.* 82. *Gærtn. fruct.* 1. 144. *Laur. cochinch.* 140.
   Bancudus latifolia. *Rumph. amb.* 2. 158. *t.* 99.
   Coda-pilava. *Rheed. mal.* 1. 97. *t.* 52. *Raii hist.* 1442.
   Morinda malabarica, amplissimo citri folio. *Vaill. act. par.* 1722.
   Arbor cornifera, Macandou javanensium. *Bont. jav.* 97. *Burm. ind.* 52.
   Arborescent, with solitary peduncles.
3. Morinda Royoc. *Procumbent Morinda.*
   Lin. spec. 250. *fil.* 217. *Reich.* 1. 486. *hort. cliff.* 73. *Jacqu. hort.* 1. *t.* 16. *Swartz obs.* 78. *Brown jam.* 159. 1. *Laur. cochinch.* 140. *Aubl. guian.* 200.
   M. americana humifusa laurifolia. *Vaill. act. par.* 1722. *p.* 275.
   Royoc humifusum, fructu cupressino. *Plum. spec.* 11. *t.* 26.
   Periclymenum americanum e cujus radice fit atramentum. *Pluk. phyt.* 1. 212. *f.* 4.
   Procumbent.

DESCRIPTIONS, *&c.*

1. This is a tree, with the leaves of Cephalanthus, opposite, petioled, quite entire. Umbel sessile, or several equal peduncles terminating blunt branches, on each of which sit aggregate heads [a]. Fruit subglobular, on a long peduncle, composed of berries, which are inversely pyramidal, four-cornered, fleshy, one-celled, having no partitions, or such very thin ones that they are obliterated when the fruit is ripe. Seeds four, bony, one-celled, arched on the back, flat on the sides, and towards the axis compressed into a wedge-form edge [b].

Native of the East Indies, Cochinchina, and the Society isles. The root is used for dyeing yellow.

2. Shoots on the upper part quadrangular, grooved and knobbed. Leaves in pairs from the knots, on thick round petioles, large, rounded-oblong, more contracted towards the base, and ending in a point, of a soft thick texture, flat, dark green above, paler underneath: the midrib thick and whitish: the upper leaves gradually smaller, and on shorter petioles. Corolla four or five-cleft, the parts narrow-oblong, pointed, spreading, thick, white within, herbaceous on the outside. Stamens four, five or six, corresponding with the number of divisions in the corolla, short, yellowish [c]. Berry to each flower, conglobated into an ovate-conoid fruit, terminated with slightly depressed mamillæ, and fleshy, marked above with a round eye, somewhat convex, rhomb-wedge-form below, firmly united, four-celled. Seed in each cell one, obovate-oblong, slightly convex on one side, concave on the other, with a subglobular void protuberance on one side below the vertex of the seed. The seeds are fixed, without any receptacle to the base of the cells [d].

Native of the East Indies, and the Society and Friendly islands: where the yellow dye for their cloths is from the bark of the root.

3. Stem shrubby, a foot high, procumbent at bottom, branched. Branches simple. Leaves petioled, lanceolate, entire, smooth; branchlets from the axils of the leaves opposite. Flowers terminating, aggregate in a globular receptacle, white. Calyx tubular, thick, undivided. Tube of the corolla villose within, with a nectariferous base. Style bifid. Stigmas reflex. Berries aggregate, with two seeds to each [e].

The roots dye linen of a dark hue, and would probably be useful to the dyers [f].

Native of South America, and the islands in the West Indies; and also of Cochinchina, according to Loureiro.

MORINGA, MORINGHA, MORUNGU. See *Guilandina.*

MORIO. See *Orchis.*

MORISONA. See *Capparis* and *Morisonia.*

MORISONIA. (*So named by Plumier in honour of Robert Morison, M. D. born at Aberdeen in Scotland in 1620, Professor of Botany to King Charles II. and in the University of Oxford, and first Profess of the Botanic Garden there. Author of* Plantarum Historia Universalis Oxoniensis, fol. 1672, 1680 *and* 1699, *and other works.* See Pulteney, 1. 298.)

Lin. gen. n. 642. *Reich. n.* 916. *Schreb. n.* 1148. *Plum.* 23. *Juss.* 244. *Jacqu. amer.* 156. *Gærtn. t.* 78. *Ceron. diff.* 308.

Class. 16. 6. Monadelphia Polyandria.

Nat. order of, *Putaminæ. Capparides*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ventricose, bursting, bifid, spreading at the mouth, blunt, shrivelling.

COR. *Petals* four, blunt, somewhat oblong.

STAM. *Filaments* numerous, awl-shaped, shorter than the corolla, connate into a funnel at the base. *Anthers* oblong, erect.

PIST. *Germ* pedicelled, ovate. *Style* none. *Stigma* headed, plano-convex, umbilicate with a dot.

PER. *Berry* globular, with a hard smooth rind, one-celled, pedicelled.

SEEDS several, kidney-form, nestling.

OBS. *Allied to* Capparis, *from which it differs only in its two-leaved calyx, and filaments united to the middle. Swartz unites them.*

ESSENTIAL CHARACTER.

Cal. single, bifid. *Pet.* four. *Pist.* one. *Berry* with a hard rind, one-celled, many-seeded, pedicelled.

[a] Linn. zeyl. [b] Gærtner. [c] Gærtner. [d] Swartz. [e] Houtt. malab. [f] Browne.

SPECIES.

1. Morisonia americana.
Lin. spec. 719. *Jacq. amer.* 156. *t.* 97. *fig.* 96. *t.* 144. *Plum. gen.* 36. *ic.* 203. *Gærtn. fruct.* 1. 378.
Capparis Morisonia. *Swartz obs.* 272.

DESCRIPTION, *&c.*

This is an inelegant upright tree, seldom above fifteen feet in height. Leaves oblong, blunt or acuminate, quite entire, shining, coriaceous, alternate, few, at most a foot long, on a round petiole, thickened at the base and tip, an inch and half long. Short thick peduncles come out scatteringly both on the old and young branches, having commonly four or five flowers on each. These are of a dirty white, have some little smell, and are scarcely an inch in diameter. The segments of the calyx are seldom equal. The stamens are about twenty in number. Fruit brown, with russet-coloured dots: flesh or pulp whitish, not eatable [a]. Gærtner describes it as a superior, spherical, one-celled berry, on a very long pedicel: rind coriaceous, hard, thick, shagreened with dots: flesh fungous, white. Peduncle twice as long as the berry, having callous dots scattered over it, and a swelling, striated joint at the base crowned with a row of very minute tubercles. Seeds numerous, largish, somewhat kidney-form, smooth, whitish or rufescent, immersed in all directions in the pulp.

Native of South America, and the islands of the West Indies; flowering there in july, and bearing fruit in November. In Martinico they call it *Bois Mahouta*, or *Devil's-wood* [b].

Linnæus first placed this tree in the class Polyandria, but afterwards removed it into the class Monadelphia. Swartz is inclined to restore it to its former situation, and even to sink it in the genus Capparis.

MOROCARPUS. See *Bituma.*
MOROCCO, RED. See *Adonis.*
MOROMORA. See *Symphonia.*
MORSUS DIABOLI. See *Scabiosa.*
——— GALLINÆ. See *Alsine* and *Lamium.*
——— RANÆ. See *Hydrocharis.*
MORSUS-GUI. See *Guilandina.*)
MORUS. (*Derivation uncertain. According to some, from* μωρος, *stultus, per antiphrasin; the Mulberry being reputed the wisest of trees, in not budding till cold weather is fully past; or from* mora, *from its slowness in coming out; or* Μωρα, *from* μωρος, *from* μωρα *&* γη, *an account of the colour of the juice, flowing from the fruit like blood, or from* μωρος, *black. But the tree is called* συκαμινος, *and the fruit* μωρα *in Greek, whence evidently the Latin* Morum. *In both languages, the fruit of the bramble, being of the same structure, had the same name.*)
Lin. gen. n. 1055. *Reich.* n. 1150. *Schreb.* n. 1424. *Tournef. t.* 362. *Juss.* 402. *Gærtn. t.* 126.
Class. 21. 4. Monoecia Tetrandria.
Nat. order of *Scabridæ. Urticæ*, Juss.

GENERIC CHARACTER.

* *Male Flowers* in an Ament.
CAL. *Perianth* four-parted: *leaflets* ovate, concave.
COR. none.
STAM. *Filaments* four, awl-shaped, erect, longer than the calyx, one within each calycine leaf. *Anthers* simple.

* *Female Flowers* heaped either on the same, or a different individual from the males.
CAL. *Perianth* four-leaved: *leaflets* roundish, blunt, permanent, the two opposite outer ones incumbent.
COR. none.
PIST. *Germ* cordate. *Styles* two, awl-shaped, long, reflex, rugged. *Stigmas* simple.
PER. none. *Calyx* very large, fleshy, become succulent, like a berry.
SEED single, ovate, acute.

ESSENTIAL CHARACTER.

MALE. *Cal.* four-parted. *Cor.* none.
FEM. *Cal.* four-leaved. *Cor.* none. *Styles* two. *Cal.* becoming a berry. *Seed* one.

[a] Jacquin. [b] Idem.

SPECIES.

1. Morus alba. *White Mulberry Tree.*
Lin. spec. 1398. *Reich.* 4. 134. *hort. cliff.* 441. *upf.* 283. *Gærtn. fruct.* 2. 199. *Hall. helv.* n. 1611. *Scop. carn.* n. 1176. *Villars dauph.* 3. 787. *Gmel. it.* 3. 374. *Du Roi harbk.* 1. 473. *Duham. arb.* 3. *Trunb. jap.* 71. *Lour. cochinch.* 555. *Burm. ind.* 198.
M. fructu albo. *Bauh. pin.* 459.
M. alba. *Ger.* 1325. 2. *emac.* 1507. 2. *Park. parad.* 596. 2. *Bauh. hist. Rais hist.* 1429.
M. candida. *Ded. pempt.* 810.
Leaves obliquely cordate ovate.
2. Morus nigra. *Common Mulberry Tree.*
Lin. spec. 1398. *Reich.* 4. 134. *hort. cliff.* 441. *upf.* 283. *mat. med.* 201. *Du Roi harbk.* 1. 425. *Ludw. eff.* 1. 114. *Kniph. cent.* 3. n. 64. *Duham. arb.* 1. 388. *fig. Hunt. Evel. silva.* 2. 39. *Trunb. jap.* 71. *Villars dauph.* 3. 788.
Morus. *Ded. pempt.* 810. *Ger.* 1325. 1. *emac.* 1507. 1.
M. fructu nigro. *Bauh. pin.* 459. *Blackw. t.* 126.
M. nigra. *Bauh. hist. Rais hist.* 1429. — vulgaris. *Park. parad.* 596. 1. *t.* 597. *f.* 3.
β. M. laciniata. *Mill. dict. n.* 2.
Leaves cordate rugged.
3. Morus papyrifera. *Paper Mulberry Tree.*
Lin. spec. 1399. *Reich.* 4. 134. *Du Roi harbk* 1. 433. *Trunb. jap.* 72. *Kæmpf. amoen.* 2. 471. *f.* 472. & 5. 865. *hist.* 1. 40. *f.* 1.
Leaves palmate, fruit hispid.
4. Morus rubra. *Red Mulberry Tree.*
Lin. spec. 1399. *Reich.* 4. 135. *Lour. cochinch.* 555. *Du Roi harbk.* 1. 430. *Gron. virg.* 146. *Pluk. phyt. t.* 246. *f.* 4. *Duham. arb.* 7.
M. virginiana. *Park. parad.* 596. n. 3. *t.* 597. *f.* 4. *Rais hist.* 1430.
Corylus maxima folio latissimo virginiana. *Rais hist.* 1799.
Leaves cordate villose underneath, ament cylindric.
5. Morus indica. *Indian Mulberry.*
Lin. spec. 1399. *Reich.* 4. 135. *fl. zeyl.* n. 337. *Trunb. jap.* 76. *Lour. cochinch.* 555. *Burm. ind.* 198. *Rumph. amb.* 7. 8. *t.* 5. *Rheed. mal.* 1. 87. *t.* 49.
M. tatarica. *Mill. dict. n.* 7.
Leaves ovate-oblong, equal on both sides, unequally serrate.
6. Morus tatarica. *Tartarian Mulberry Tree.*
Lin. spec. 1399. *pall.* 851. *Reich.* 4 135. *Lepech. it.* 2. 269. *Pallas reise* 1. 2. *t.* 52.
Leaves ovate-oblong, equal on both sides, equally serrate.
7. Morus tinctoria. *Dyer's Mulberry* or *Fustick-wood.*
Lin. spec. 1399. *pall.* 851. *Reich.* 4. 136. *Jacq. amer.* 247. *t.* 180. *pict.* 121. *t.* 263. *Brown. jam.* 339. *Sloan. jam.* 2. 3. *t.* 158. *f.* 1. *Raii dendr.* 14. & 666. *Plum. ic.* 199. *t.* 204. *Marcgr. bras.* 119.
β. M. Xanthoxylum. *Mill. dict.* n. 8. *Pluk. phyt. t.* 239. *f.* 3.
Leaves oblong more produced on one side, spines axillary.

DESCRIPTIONS, *&c.*

1. [This is a middle-sized tree, with a whitish bark, of which a coarse sort of paper may be made, and spreading branches. Leaves broad-lanceolate, obliquely cordate, subserrate, undivided, or three-lobed, some cut, smooth, petioled, scattered. Berries lateral, juicy, insipid, pale, oblong [a].

Gærtner describes the fruit as a Capsule covered with the leaflets of the calyx conterminated into a white turbinate berry, ovate-acuminate, membranaceous, full of soft pulp, one-celled, finally drying up into a thin pellicle drawn over the seed. Seed single, (one of the two being constantly abortive,) ovate, drawn to a point upwards, subcuticular, rufescent, fixed to the apex of the capsule by a filiform chord [b].

Native of China, Cochinchina and Japan, and according to Gmelin of Persia. Cultivated by Gerarde, in 1596. It flowers in june [c].]

[a] Loureiro. [b] Gærtner. [c] Hort. kew.

There are two or three varieties of this tree, which differ in the ſhape of their leaves, and in the ſize and colour of the fruit; but as it is of no other uſe but for the leaves, the ſtrongeſt ſhooting and the largeſt leaved ſhould be preferred. [Thunberg ſays it varies with entire leaves, with leaves ſimply lobed, and with the lobes cut or gaſhed.]

The white Mulberry is commonly cultivated for its leaves to feed ſilk-worms in France, Italy, &c. [In Spain, as Mr. Townſend informs us[5], they preſer the White Mulberry in Valencia, and the Black in Granada.] The Perſians generally make uſe of the latter, and Mr. Miller was aſſured by a gentleman who had made trial of both ſorts of leaves, that the worms fed with the Black Mulberry produced much the beſt ſilk; but that the leaves of the black ſhould never be given to the worms after they have eaten for ſome time of the white, leſt they ſhould burſt.

[Sir George Staunton ſays that the trees he obſerved in China did not appear to differ from the common Mulberry-trees of Europe; that ſome of them were ſaid to bear white, and ſome red or black fruit, but that often they bore none; and that the tender leaves growing on young ſhoots of the black Mulberry are ſuppoſed to be the moſt ſucculent[6].

Mr. Evelyn remarks, that the leaves of the White Mulberry are far more tender than thoſe of the Black, and ſooner produced by at leaſt a fortnight. Nor is this tree leſs beautiful to the eye than the faireſt Elm, very proper for walks and avenues. The timber will laſt in water as well as the moſt ſolid Oak, and the bark makes good and tough baſt-ropes[7].

The White Mulberry, and the Silkworm were unknown to Theophraſtus and Pliny. About the year of Chriſt 551 two Perſian monks, employed as miſſionaries in ſome of the Chriſtian churches eſtabliſhed in India, penetrated into the country of the Seres, or China. There they obſerved the labours of the Silkworm, and became acquainted with the art of working up its productions into a variety of elegant fabrics. They explained to the Greek Emperor at Conſtantinople theſe myſteries, hitherto unknown, or very imperfectly underſtood in Europe; and undertook to bring to the capital a ſufficient number of theſe wonderful inſects. This they accompliſhed by conveying the eggs of the ſilkworm in a hollow cane. They were hatched by the heat of a dunghill; they were fed by the leaves of a wild Mulberry-tree, and they multiplied and worked in the ſame manner as in thoſe climates where they firſt became objects of human attention and care. Vaſt numbers of theſe inſects were ſoon reared in different parts of Greece, particularly in the Peloponneſus. Sicily afterwards undertook to breed ſilkworms with equal ſucceſs, and was imitated, from time to time, in ſeveral towns of Italy. In all theſe places extenſive manufactures were eſtabliſhed, with ſilk of domeſtic production.

From the reign of Juſtinian, it was moſtly in Greece, and ſome of the adjecent iſlands, that ſilkworms, which he firſt introduced into Europe, were reared.

Soon after the conqueſt of Conſtantinople by the Venetians in 1204, they attempted the eſtabliſhment of the ſilk manufacture in their dominions; and in a ſhort time the ſilk fabrics of Venice vied with thoſe of Greece and Sicily.

About the beginning of the fourteenth century the Florentine manufactures of ſilk appear to have been very conſiderable[8].

It came much later into France; the manufacture of ſilk, though much encouraged by Henry IV. not having been fully eſtabliſhed there, till under Louis XIV. by Colbert[9]. In England, it is well known, that all the endeavours of James I. to raiſe Mulberry trees, and make ſilk utterly failed, and have never ſince been revived to any extent.

2. The difference which Linnæus ſets down between the Black Mulberry and the White is, that in the former the leaves are ſubquinquelobate, bluniſh, and rugged, in the latter undivided and ſhining; the fructification of the former dioecous, of the latter monoecous. Theſe diſtinctions however are not exact. The Black Mulberry is a larger ſtronger tree; and the fruit is dark blackiſh red and more acid.]

Mr. Miller's account is, that the Black Mulberry has generally male flowers or catkins on the ſame tree with the fruit, but it often happens that ſome of the trees which are raiſed from ſeeds have moſtly male flowers and produce no fruit; and that he has obſerved ſome trees which produced only catkins for many years after they were planted, and afterwards have become fruitful. [This latter obſervation agrees with a general remark that I have made on monoecous trees, that whilſt they are young they bear male flowers chiefly and very little fruit.] Mulberry trees of a certain age are not only more fruitful than young ones, but their fruit is much larger and better flavoured.

This tree grows naturally in Perſia, whence it was firſt brought to the ſouthern parts of Europe. It is now become common in every part of our continent, where the winters are not very ſevere. In the northern parts of Sweden it will not live in the open air; and in ſeveral parts of Germany it is planted againſt walls and treated in the ſame way as Peaches and other tender fruits are here.

It was cultivated here in 1596, by Gerarde.] In ſome of the old kitchen gardens near London there are trees of a very great age, which are very healthy and fruitful, and their fruit is larger and better flavoured than thoſe of younger trees. [Bradley ſays, that moſt of theſe were planted in the time of King James I., when there was a project of ſetting up a ſilk manufacture in England.]

β. Mr. Miller ſets down a variety of the Black Mulberry, with palmate or elegantly cut leaves and a ſmaller fruit, as a diſtinct ſpecies. He ſays, that it grows naturally in Sicily, whence he received a parcel of the ſeeds, and raiſed a good number of plants; that all theſe were totally different in their leaves from the common Mulberry, that the tree is of humbler growth, and the fruit ſmall without any flavour.

γ. This tree makes very ſtrong vigorous ſhoots, but ſeems not to be of tall growth, for it ſends out many lateral branches from the root upwards. The leaves are large, ſome of them entire, others deeply cut into three or five lobes, eſpecially whilſt the trees are young; they are dark green and rough to the touch on the upper ſurface, but pale green and ſomewhat hairy on the under ſide, falling off on the firſt approach of froſt in autumn. The fruit is little larger than peas, ſurrounded with long purple hairs, when ripe changing to a black-purple colour, and full of ſweet juice.

It is a native of Japan and the South Sea iſlands, according to Mr. Miller of China alſo and South Carolina, whence he received the ſeeds. The inhabitants of Japan make paper of the bark. They cultivate the trees for this purpoſe on the mountains much after the ſame manner as Oſiers are cultivated with us, cutting down the young ſhoots in December, after the leaves are fallen.

[Theſe being divided into rods of three feet in length, or ſhorter, are gathered into bundles to be boiled. If the ſhoots are dry, they muſt be ſoftened in water twenty-four hours. The bundles are boiled very cloſe together, and placed erect in a large copper properly cloſed: the boiling is continued till the ſeparation of the bark diſplays the naked wood. Then the ſtalks are looſed out of the bundles, and allowed to cool; after which, by a longitudinal inciſion, the bark is ſtripped off, and dried, the wood being rejected. When this bark is to be purified, it is put three or four hours in water, when being ſufficiently ſoftened, the cuticle, which is of a dark colour, together with the greeniſh ſurface of the inner bark, is pared off. At the ſame time the ſtronger bark is ſeparated from the more tender: the former making the whiteſt and beſt paper; the latter a dark weak and inferior kind. If any bark appears that is old, it is ſet aſide for a thicker paper, of worſe quality. Into this laſt claſs they

[5] Travels, 3. 284. [6] Embaſſy, 2. 430. [7] Syſtem, b. 2. ch. 1.
[8] Robertſon's India, p. 85. from Procopius—alſo p. 110. See Gibbon's hiſtory, IV. 51. under Juſtinian.
[9] Evelyn, b. 2. c. 1.

they throw the knotty parts of the bark, and thoſe which have any fault or blemiſh.

The bark is now boiled in a lye that is clear and ſtrained; care being taken to ſtir the ſubſtance as ſoon as it begins to boil, with a ſtrong reed, and to pour in of the lie gradually as much as is neceſſary for ſtopping the evaporation, and reſtoring the liquor that is loſt.

The boiling is to ceaſe when the materials can be ſplit, by a ſlight touch of the finger, into fibres and down.

Next it is to be waſhed, which is a thing of ſome moment; for if waſhed too ſhort a time, the paper will be ſtrong indeed, but too rough, and of an inferior quality: if too long, it will be whiter, but of a fat conſiſtence, lax, and leſs fit for writing. Being ſufficiently waſhed, the materials are put upon a thick, ſmooth, wooden table, and ſtoutly beat, by two or three men, with battons of hard wood, into a pulp; which being put in water, ſeparates like grains of meal. Thus prepared, it is put into a narrow vat; an infuſion of Rice, and a mucous water of the infuſion of the root of Manihot being added to it. Theſe three are to be ſtirred with a clean ſlender reed, till reduced into a homogenous liquor, of a due conſiſtence. The prepared liquor is now put into a larger vat; from whence the ſheets are poured out one by one, and placed in heaps upon a table covered with a double mat; a ſmall thread of reed being placed between the ſheets at the edge, and projecting a little, ſo that they may be taken up ſingly when wanted; the heaps are covered with a plank of wood the ſize of the paper, upon which ſtones are put, at firſt of a light weight, but afterwards heavier, that all the wet may be preſſed out by degrees. The following day, the weights being removed, each ſheet is taken up by itſelf, and the operation is finiſhed[1].

The fineſt and whiteſt cloth, worn by the principal people at Otaheite and in the Sandwich iſlands is made of the bark of this tree: and this, when dyed red, takes a better colour. The Bread Fruit Tree makes a cloth inferior in whiteneſs and ſoftneſs, worn chiefly by the inferior people. Cloth is alſo made of a tree reſembling the wild Fig Tree of the Weſt Indies. It is coarſe and harſh, the colour of the darkeſt brown paper: but it is the moſt valuable becauſe it reſiſts water. This is perfumed and worn by the chiefs as a morning dreſs in Otaheite[2].

The juice of the Paper Mulberry is uſed in China as a glue in gilding either paper or leather, but not wood.

It was cultivated before 1759, by Hugh Duke of Northumberland[3], in whoſe gardens ſeveral of theſe trees were raiſed from ſeeds a few years paſt, and one of them was given to Mr. Miller.

4. The Virginian red or large-leaved Mulberry Tree with black ſhoots, [will grow to the height of thirty or forty feet, ſending forth many large branches. The leaves are not only larger but rougher than thoſe of the common Mulberry, though in other reſpects they ſomewhat reſemble them. It produces plenty of catkins, in ſhape like thoſe of the Birch, and it has a dark reddiſh fruit[4].] Mr. Miller remarks, that a large tree of this ſpecies which had been many years in the Biſhop of London's garden at Fulham, never produced any fruit, but had ſome years a great number of catkins, much like thoſe of the Hazel-nut, which occaſioned Mr. Ray to give it the name of Corylus: but it might be one of the male trees, which do not produce fruit, as ſometimes happens in the common ſort.

[According to Kalm, this tree is polygamous. The aments or catkins are the length of thoſe of the common or white Birch. The young leaves are very tomentoſe underneath; they are alſo frequently palmate, but generally three-lobed and ſubvilloſe[5].

Loureiro deſcribes it as a middle-ſized tree, with a ſmooth aſh-coloured bark, and long weak ſpreading branches. Leaves cordate, acute, ſerrate, large, pale, villoſe underneath, ſoft, petioled, alternate. Berry cylindric, an inch long, axillary, one or two together, pedunculed, red, eatable.

Parkinſon, ſo long ago as 1629, ſays that it grows quickly with us to a great tree, and that the fruit is longer and redder than the common ſort, and of a very pleaſant taſte. Though it bears the ſeverity of our climate very well, yet it is ſtill a ſcarce tree among us.

Native of Virginia and Carolina. According to Loureiro, it is alſo found wild to the weſt of Cochinchina, and is cultivated by the Cochinchineſe for feeding ſilkworms, but not ſo generally as the White Mulberry.]

5. This is a large tree, with a ſoft, thick, yelloviſh bark, and a milky juice like the Fig, which is aſtringent. The branches come out on every ſide. The leaves are on ſhort foot-ſtalks, rough, dark green above, pale underneath, alternate. Flowers in round heads, at the foot ſtalks of the leaves, on each ſide the branches, of an herbaceous white colour. Fruit roundiſh, firſt green, then white, and finally dark red. [It ſeems by Miller's deſcription to be a monoecous tree. Linnæus ſuſpects it to be dioecous. Loureiro deſcribes it as a ſhrub, ſix feet high, ſuberect and ſlender: the bark duſky and hempen; the branches few, long and weak. Leaves acute, commonly undivided, but ſome lobed, ſmooth, petioled, alternate. Berries roundiſh, duſky red, inſipid, ſmall, ſweet, axillary, ſolitary.

Native of the Eaſt Indies, Japan, and Cochinchina, where it is cultivated on a very extenſive ſcale, eſpecially on the banks of rivers, to feed ſilkworms.]

Mr. Miller received the ſeeds from Bombay, which ſucceeded in the Chelſea garden before the year 1759.

[6. This is a ſhrub irregularly branched, with a trunk ſeldom ſo big as the human arm: bark whitiſh gray: wood very hard, yellow, ſomewhat veined: branches ſlender, wand-like, round, ſmooth: branchlets leafy, bearing fruit at the baſe. Leaves of middling width, on very long petioles, commonly oval, rounded at the tip, very ſeldom acute, generally unequal at the baſe, entire and ſubcordate, very ſmooth, equally and ſtiffly ſerrate, moſtly entire; but ſometimes deeply five-lobed, ſinuate or three-lobed, or with only one ſinus, but diſtinguiſhable from the common Mulberry by the ſmoothneſs of the leaves. Berries ſmall, on long pedunculs, red or pale when ripe, inſipid; they are eaten freſh, in a conſerve or dried; a wine and a ſpirit are made from them in Siberia and Ruſſia, and the leaves are uſed for feeding ſilkworms[6].

Linnæus remarks, that it is very nearly allied to the preceding, but with longer pedunculs and petioles, the ſerratures of the leaves more diſtinct, and the fruit of Morus nigra.

7. This is a tall branching tree with a fine head, the whole abounding in a ſlightly glutinous milk of a ſulphureous colour. The timber is yellow and is uſed in dyeing. Spines awl-ſhaped, ſolitary, few; entire branches are frequently without any. Leaves acuminate, ſerrate, ſmooth on both ſides, veined, diſtich, on ſhort petioles, of various ſizes. Aments ſolitary, pendulous, axillary between the petiole and the ſpine, two or three inches in length, cylindric and very cloſe. Female flowers on a different tree, collected into a globe: their receptacles axillary, glaucous-green, ſolitary, with ſhort petioles. Among the female flowers are ſome chaffy bodies, which perhaps were flowers ſuffocated by their neighbours and dried up. Fruit yellowith green, ſweet, and eaten chiefly by birds[4].

Linnæus remarks, after Jacquin and Loefling, that this ſpecies is always dioecous; the leaves ſmooth, the ſtyle ſingle, and the calyx not berried.

Browne ſays it is a fine timber wood, and a principal ingredient in moſt of our yellow dies, for which it is chiefly imported into Europe, where it is well known under the name of Fuſtick-wood. The berries are ſweet and wholeſome, but not much eaten except by birds, who are the chief planters of it.

[1] Kæmpfer. [2] Cook's Voyage, 2. 210. [3] Hort. kew. [4] Hunter's Evelyn. [5] Linn. [6] Pallas.

Native of Brazil, New Spain about Carthagena, Jamaica and other iſlands in the Weſt Indies. Cultivated in 1739, by Mr. Miller [a].]

Mr. Miller makes two ſpecies of this—Morus tinctoria (n. 5.) the true Fuſtick-wood, which grows naturally in moſt of the iſlands in the Weſt Indies, but in much greater plenty at Campeachy. It is one of the commodities exported from Jamaica, where it grows in greater plenty than in any other of the Britiſh iſlands.—Morus Xanthoxylum (n. 8.), inferior in ſize, the branches more ſlender, the leaves narrower, rounded at the baſe, ſerrate, and ending in acute points. At the foot-ſtalk of each leaf come out two ſharp thorns, which in the older branches grow to the length of two inches. The fruit is ſmaller.

This alſo is a native of Jamaica, and of the Bahama iſlands. The wood of it is cut, and ſold for the ſame uſe with the other, from which it has not been well diſtinguiſhed by botaniſts, [who ſtill regard them as the ſame, or at leaſt not as ſpecifically different.]

PROPAGATION AND CULTURE.

1. The White Mulberry may be propagated either from ſeeds or layers, as will be directed preſently for the Black Mulberry, and is equally hardy: but the moſt expeditious method of raiſing this tree in quantity is from the ſeeds, which may be procured in plenty from the South of France or Italy. The beſt way to ſow them in England is [to prepare a fine warm border of rich mellow earth, or if that is not eaſily to be had] to make a moderate hot-bed, arch it over with hoops, and cover it with mats. Sow the ſeeds towards the end of march in drills, covering them with light earth a quarter of an inch deep: in very dry weather water the bed gently and frequently, in the heat of the day ſhade it with mats, and cover it when the nights are cold. In five or ſix weeks the plants will come up, and being tender when they firſt appear, muſt be guarded againſt froſty mornings, which often happen in may. During ſummer keep them clean from weeds, [cover them from the extreme heat of the ſun, and continue to water them in dry weather.] In autumn cover them again, when the firſt froſts come, and continue to protect them through the firſt winter. The following march tranſplant them into the nurſery, there to remain two or three years, and then to be removed where they are to continue. [Or if not very ſtrong, they had better remain in the ſeed-bed two years before they are planted out in the nurſery, in rows at two feet and a half diſtance, and one foot and a half aſunder in the rows, there to continue till they are ſufficiently ſtrong to be planted out finally [b].]

The trees which are deſigned to feed ſilk-worms, ſhould never be ſuffered to grow tall, but rather kept in a ſort of hedge: and inſtead of pulling off the leaves ſingly, they ſhould be ſheared off together with their young branches, which is much ſooner done, and is not ſo injurious to the tree.

[It is ſurpriſing that this precept of Mr. Miller's has not been attended to, not only in England, but in many of the ſouthern parts of Europe, where making ſilk is of ſome conſequence, ſince the practice is followed in the Eaſt, and is in itſelf perfectly rational. Father Loureiro informs us, that in Cochinchina they root up the plants every third year, and make freſh plantations of the cuttings, becauſe the young ſhoots afford a more delicate food for the worms, and produce a finer ſilk. Sir George Staunton relates that in a part of China through which the Embaſſy paſſed, Mulberries were cultivated and reared with the greateſt care; and planted in rows, ten or twelve feet aſunder, in beds of a moiſt, but not inundated loamy earth, thrown about a foot high above the ſurface. The trees are frequently pruned or dwarfed, in order to make them produce a conſtant ſucceſſion of young ſhoots, and tender leaves [c]. Our planters recommend a dry ſoil for the Mulberry; but it appears from the authors juſt quoted that in China and Cochinchina, it is cultivated in a very moiſt one, by the ſides of of rivers, or where rice is grown in trenches between the rows of trees.

If the Paper Mulberry ſhould be found too tender for our climate, might not this or our Common Mulberry, cultivated in this way, throw out ſhoots tender enough to be converted into Paper, by the proceſs uſed in Japan for that purpoſe?

2. The Common or Black Mulberry has generally male flowers or catkins on the ſame tree with the fruit; but it often happens, that ſome of the trees which are raiſed from ſeeds, have generally male flowers, and produce no fruit; ſo that thoſe who plant theſe trees for their fruit, ſhould never make choice of ſuch as have been propagated by ſeeds, unleſs they have ſeen them produce fruit in the nurſery. It is alſo the ſureſt way to mark ſuch trees as are fruitful in the nurſery, at the time when the fruit is upon them, becauſe thoſe trees which are propagated by layers, are ſometimes of the male ſort; for I have ſeveral times obſerved, that ſome of the large branches of theſe trees have produced only catkins, when the other parts of the trees have been very fruitful; ſo that unleſs care is taken in the choice of the branches for making the layers, there is the ſame hazard as in ſeedling trees: nor ſhould the ſhoots which come out near the roots of old trees be ever laid down, for theſe rarely produce fruit until they have been planted many years, although the trees from which theſe were produced might be very fruitful. I have obſerved ſome trees which produced only catkins for many years after they were planted, and afterwards have become fruitful; the ſame I have obſerved in Walnut-trees, and my honoured friend the Chevalier Rathgeb, has informed me, that he has obſerved the ſame in the Lentiſk and Turpentine-trees.

The old Mulberry-trees are not only more fruitful than the young, but their fruit are much larger and better flavoured; ſo that where there are any of theſe old trees, it is the beſt way to propagate from them, and to make choice of thoſe branches which are moſt fruitful. The uſual method of propagating theſe trees, is by laying down their branches, which will take root in one year, and are then ſeparated from the old trees; but as the moſt fruitful branches are often ſo far from the ground as not to be layed, unleſs by raiſing boxes or baſkets of earth upon ſupports for this purpoſe, the better way is to propagate them by cuttings, which, if rightly choſen and ſkilfully managed, will take root very well; and in this method there will be no difficulty in having them from trees at a diſtance, and from the moſt fruitful branches. Theſe cuttings ſhould be the ſhoots of the former year, with one joint of the two years wood to their bottom: the cuttings ſhould not be ſhortened, but planted their full length, leaving two or three buds above ground. The beſt ſeaſon for planting them is in march, after the danger of hard froſt is over; they ſhould be planted in light rich earth, preſſing the ground pretty cloſe about them; and if they are covered with glaſſes, it will forward their putting out roots: but where there is not ſuch conveniency, the ground about them ſhould be covered with moſs, to prevent its drying; and where this is carefully done, the cuttings will require but little water, and will ſucceed much better than with having much wet. If the cuttings ſucceed well and make good ſhoots, they may be tranſplanted the following ſpring into a nurſery, where they ſhould be regularly trained to ſtems, by tying down ſtakes by each, to which the principal ſhoots ſhould be faſtened; and moſt of the lateral branches ſhould be cloſely pruned off, leaving only two or three of the weakeſt to detain the ſap, for the augmentation of the ſtem; for when they are quite diveſted of their ſide ſhoots, the ſap is mounted to the top, ſo that the heads of the trees grow too faſt for the ſtems, and become too weighty for their ſupport. In about four years growth in the nurſery, they will be fit to tranſplant where they are to remain; for theſe trees are tranſplanted with greater ſafety while young, than when they are of a larger ſize.

[a] Hort. kew.

[b] Theſe additions are from Dr. Hunter's notes on Evelyn's Sylva.

[c] Vol. 1. p. 422.

If the cuttings are planted in a bed fully expoſed to the ſun, it will be proper to arch the bed over with hoops, that they may be ſhaded with mats in the heat of the day during the ſpring, till they have put out roots; after which, the more they are expoſed to the ſun, the better they will ſucceed, provided the ground is covered with moſs or mulch to prevent its drying, for the ſun will harden the ſhoots, and thereby they will be in leſs danger of ſuffering by the early froſts in autumn; for when theſe are in a ſhady ſituation, they are apt to grow vigorouſly in ſummer, ſo will be replete with moiſture, and the early froſts in October frequently kill their tops; and if the following winter proves ſevere, they are often killed to their roots, and ſometimes are entirely deſtroyed. I have two or three times made trial of planting the cuttings of Mulberries on a hot-bed, and have found them ſucceed extremely well. This I was led to by obſerving ſome ſticks of Mulberry-trees which were cut for forks, and thruſt into the hot-bed, to faſten down the vines of Cucumbers, which, although they had been cut from the tree a conſiderable time, yet many of them put out roots, and ſhot out branches; cuttings therefore planted on a moderate hot-bed will take root much ſooner than in the common ground.

This tree delights in rich light earth, and where there is a depth of ſoil, as in moſt of the old kitchen gardens about London; in ſome of which are trees of a very great age, which are healthy and fruitful, and their fruit is larger and better flavoured than thoſe of younger trees. In a very ſtiff ſoil, or on ſhallow ground whether of clay, chalk or gravel, the trunk and branches are commonly covered with moſs, and the little fruit produced is ſmall, ill-taſted, and ripens late.

If this tree be planted in a ſituation where it is defended from the ſtrong ſouth and north-weſt winds, it will preſerve the fruit from being blown off; but this ſhelter, whether it be trees or buildings, ſhould be at ſuch a diſtance as not to keep off the ſun; for where the fruit has not the benefit of his rays to diſſipate the morning dews early, it will turn mouldy and rot upon the trees. There is never any occaſion for pruning theſe trees, more than to cut off any of the branches which may go acroſs others, ſo as to rub and wound their bark, by their motion occaſioned by the wind; for their ſhoots ſhould never be ſhortened, becauſe the fruit is produced on the young wood.

[For propagating the Mulberry by layers, a number of trees muſt be planted for ſtools two yards aſunder. A few ſtools will ſoon produce many layers, for they throw out plenty of young branches, when the head is taken off. When the ſtools have ſhot forth young wood fit for laying, in the beginning of winter let the earth be excavated round each ſtool, and let the preceding ſummer ſhoots be ſlit at a joint and laid therein, fixing them down with a peg, filling the interſtices with fine mould, levelling the ground, and cutting the young twigs to one eye above the ſurface. In the autumn following the layers will all probably have taken good root, and have made a conſiderable ſhoot in the ſtem, ſo that they will be ready for the nurſery ground, in which they are to be managed in the ſame way as the ſeedlings. The ſecond year after, the ſtools will have a freſh crop of young wood for laying.

Cuttings may be planted not only in march, but alſo in October. Theſe ſhould be ſtrong ſhoots of the laſt year's wood, and if a tree does not make ſuch ſhoots, it muſt be headed the year before for this purpoſe. The ſhoots ſhould be a foot and half long, and muſt be planted a foot deep, in a ſhady well-ſheltered place, and in a moiſt ſoil, well worked and fine.

Theſe trees may likewiſe be increaſed by cuttings planted at the end of june, or the beginning of july, in pots plunged up to their rims in the ſtove, where if water and ſhade be conſtantly afforded them, they will ſtrike roots and become good plants*.

* Marſhall on Planting, vol. 2. edit. 2.

If an old Mulberry-tree becomes a bad bearer, or caſts the fruit before it is ripe; cut a trench, two feet deep, round the tree, and about four feet from the trunk; fill it with freſh mould, enriched with cow-dung; and as the large roots may be raiſed without inconvenience, let the compoſt be put under them, ſo as to make the bed, over which the tree ſtands, as rich as poſſible. At the ſame time, let the old wood be cut from the head of the tree, that the young wood may have ſpace to grow in. Theſe operations being judiciouſly conducted, you will, in a few years, have an old tree converted into a young one. Obſerve alſo, that if you expect plenty of fruit, the ground muſt not be cropped near the tree, for the feeding fibres of the roots will be cut off by the ſpade, when the fruit requires the greateſt nouriſhment*.

The Mulberry is remarkable for putting out its leaves late; ſo that when they appear, the gardener may take it for granted that all danger from froſt is over. This is a remark of Pliny's. *Cum germinare videris Morum, injuriam poſtea frigoris timere nolito.*

On the 22d of may, 1798, when I am writing this article, the ſeaſon being early and uncommonly genial, the Hawthorn having bloſſomed on the firſt of the month, the leaves of the common Mulberry are now expanding with great caution, a few only at the extremities of the branches being almoſt as big as a ſhilling. Some of the Aſh-trees are nearly in the ſame ſtate; which I mention becauſe it is ſaid that Aſh leaves are uſed in China as a ſuccedaneum for thoſe of the Mulberry in feeding ſilkworms.]

3. Paper Mulberry may be propagated by ſeeds, or by laying down the branches, or by cuttings, in the manner directed for the common ſort. In Japan it is cultivated for making paper of the bark much after the ſame manner as Oſiers are cultivated here, cutting down the young ſhoots at the end of the year, when the leaves are off.

4. This tree has not been propagated yet in this country, for though it has been budded and grafted upon the White and Black Mulberry, it has not ſucceeded. Being tall, it cannot well be laid down, which is the moſt likely method to propagate it. This is very hardy, and will endure the cold of our climate in the open air very well.

5. This is too tender to live out of the Bark-ſtove, where it muſt be treated as other tender plants, giving it but little water in winter. With this management it will retain its leaves all the year.

6. Culture and management the ſame as the firſt and ſecond ſorts.

7. This muſt be preſerved in the Bark-ſtove. The ſeeds come up freely in a hot bed: when the plants are fit to remove, plant each in a ſeparate ſmall pot filled with freſh light earth, and plunged into a hot-bed of tanner's-bark, ſhading them from the ſun till they have taken new root; and then treating them as other plants from hot countries. They retain their leaves great part of the year in the ſtove.

[MORUS NORVEGICA. See *Rubus Chamæmorus.*

MOSCHARIA. See *Teucrium ſva.*

MOSCHATEL, MOSCHATELLA,] MOSCHATELLINA. See *Adoxa.*

[MOSCHEUTOS. See *Hibiſcus.*]

MOSS. See *Muſcus.*

MOTHERWORT. See *Leonurus.*

MOTH MULLEIN. See *Verbaſcum.*

[MOTTA-PULLU. See *Scirpus.*]

MOULD, or vegetable earth, the goodneſs of which may be known by the ſight, ſmell, and touch.

Firſt, by the ſight: thoſe Moulds that are of a bright cheſtnut, or hazelly colour, are counted the beſt; of this colour are the beſt loams, and alſo the beſt natural earth, and this will be better yet, if it cuts like butter, and does not ſtick obſtinately, but is ſhort, tolerably light, breaking into ſmall clods, is ſweet, will be tempered without cruſting or chapping, in dry weather, or turning to mortar in wet.

The next to that, the dark gray and ruſſet Moulds

* Hunter on Evelyn.

are accounted the beſt, the light and dark Aſh-colour are reckoned the worſt, ſuch as are uſually found on common, or heathy ground; the clear tawny is by no means to be approved, but that of a yellowiſh red colour is accounted the worſt of all: this is commonly found in wild and waſte parts of the country, and for the moſt part produces nothing but Furz and Fern, according as their bottoms are more or leſs of a light and ſandy, or of a ſpewy gravel, or clayey nature.

Secondly, by the ſmell: all lands that are good and wholeſome, will, after rain, or breaking up by the ſpade, emit a good ſmell.

Thirdly, by the touch: by this means we may diſcover whether it conſiſts of ſubſtances entirely arenaceous, or clammy; or, as it is expreſſed by Mr. Evelyn, whether it be tender, fatty, deterſive, or ſlippery, or more harſh, gritty, porous, or friable.

That being always the beſt that is between the two extremes, and does not contain the two different qualities of ſoft and hard mixed, of moiſt and dry, of churliſh and mild, that is neither too unctuous or too lean, but ſuch as will diſſolve, of a juſt conſiſtence, between ſand and clay, and ſuch as will not ſtick to the ſpade or fingers upon every flaſh of rain.

A loam, or brick Mould, is not to be diſapproved, as requiring little help or improvement but the ſpade, and is eſteemed both by the gardener and floriſt.

[MOUL-ELAVOU. See *Bombax*.
MOUNTAIN ASH. See *Sorbus*.
——— EBONY. See *Baubinia*.
MOURERA. See *Lacis*.
MOURICOU. See *Erythrina*.
MOURIRI. See *Petaloma*.
MOUSE-EAR. See *Hieracium* and *Myoſotis*.
——— Chickweed. See *Ceraſtium*.
MOUSE-TAIL. See *Myoſurus*.
MOUTABEA. See *Cryptoſtomum*.
MOXA. See *Artemiſia*.
MUCEDO and MUCILAGO. See *Mucor*.
MUCOR. *Lin. gen. Schreb. n.* 1685. *Michell*, 95. Mucilago. *Mich.* 96. Lycocala. *Mich.* 95.
Claſſ. 24. 6. Cryptogamia Fungi.

GENERIC CHARACTER.

Seeds naked, or in tranſparent capſules or veſicles at the end of the ſtem.

Theſe plants form the laſt genus of the loweſt order of Vegetation. They chiefly appear in form of mouldineſs on putrid or putrefying ſubſtances, as rotten wood, fruits, dung, corrupted food, old cheeſe, decayed leaves, and other funguſes, in caverns and arched cellars. Seventeen Britiſh ſpecies are enumerated in the third edition of Withering's Arrangement.

MUDWORT. See *Limoſella*.
MUEL SHAVI. See *Cacalia*.
MUGWORT. See *Artemiſia*.
MUHLENBERGIA.
Lin. gen. Schreb. n. 103.
Claſſ. 3. 2. Triandria Digynia.
Nat. order of *Gramina*, *Graminæ* or *Graſſes*.

GENERIC CHARACTER.

CAL. *Glume* one-valved, very ſmall, emarginate, lateral.
COR. Two-valved: *valves* equal: *outer* lanceolate, long, acute, awned, embracing the inner one, hairy at the baſe: *inner* a little ſhorter, narrower, linear, mucronate.
Nectary two-leaved: *leaflets* ovate, obliquely truncate, gibbous, ſmall.
STAM. *Filaments* three, capillary, ſhorter than the corolla. *Anthers* linear.
PIST. *Germ* ovate. *Styles* two, capillary. *Stigmas* feathered.
PER. none. Corolla incloſes the ſeed.
SEED one, oblong, acuminate.

ESSENTIAL CHARACTER.

Cal. one-valved, minute, lateral. *Cor.* two-valved.

SPECIES.

1. Muhlenbergia diffuſa.
Lin. ſpec. ed. Willd. 320.

DESCRIPTION, *&c.*

Culm branched diffuſed procumbent. Leaves linear-lanceolate ſomewhat rugged nerved, three of the nerves thicker on the back of the leaf ſo that it ſeems to be three-nerved. Ligule ſhort. Panicle ſlender at the ends of the branches, which are alternate and preſſed cloſe. It is a perennial Graſs; native of North America[a].

MUIVA. See *Melaſtoma*.
MU-KELENOU. See *Dioſcorea*.]
MULBERRY TREE. See *Morus*.
——— BLITE. See *Blitum*.
MULE'S TONGUE. See *Aſplenium*.
MULLEIN. See *Verbaſcum*.
[MULLERA. (*So named by the younger Linnæus, in memory of Otho Frederick Muller, author of* Flora Fridrichſdalina, *continuator of* Flora Danica, *which was begun by Oeder, and author of many papers in the Daniſh Acts, &c.*)
Lin. ſuppl. 53. *Gen. Schreb. n.* 1192. *Juſſ.* 352.
Claſſ. 17. 4. Diadelphia Decandria.
Nat. order of *Papilionaceæ*. *Leguminoſæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, compreſſed, truncated and flattiſh at the baſe, four-toothed: the upper tooth obliterated, very ſeldom cloven: the lateral ones more remote, acute, the loweſt more produced, and more awl-ſhaped.
COR. papilionaceous. *Banner* reflex, cordate, ovate, quite entire, obtuſe, flat; claw flattiſh, ſcarcely longer than the calyx, remote from the wings and keel. *Wings* oblong, converging, gibbous at the baſe, clawed. *Keel* ſhorter than the wings, compoſed of two diſtinct, converging, clawed petals, forming an oblong, compreſſed, ſtraight ſheath.
STAM. *Filaments* ten, united into a compreſſed ſheath, broader at the baſe. *Anthers* ovate.
PIST. *Germ* linear, compreſſed. *Style* ſhort. *Stigma* acute.
PER. *Fruit* necklace-form, compoſed of three, four or five concatenated, ſolid, one-celled, one-valved, one-ſeeded globules, the loweſt of which are larger.
SEEDS ſolitary, compreſſed, kidney-form, ſmooth.

ESSENTIAL CHARACTER.

Pericarp elongated, fleſhy, necklace-form, with one-ſeeded globules.

SPECIES.

1. Mullera moniliformis.
Lin. ſyſt. 667. *ſuppl.* 329. *Mer. ſurin. t.* 35.

DESCRIPTION, *&c.*

This is a tree with ferruginous, ſomewhat warted branches. Leaves alternate, pinnate, having two pairs of leaflets with an odd one at the end. Leaflets equal, oppoſite, petioled, ovate-oblong, like thoſe of Privet, quite entire, acute, ſmooth above, ſilky underneath, flat, veined: petioles elongated, round, with a thickened joint at the baſe where they are inſerted. Stipules none. Racemes axillary and terminating, ſimple, the length of the petioles. Bractes none. Flowers ſcattered, nodding, the ſize of Laburnum flowers. The petals fall off, whilſt the calyx remains, and the germ ſwells: this however does not become a fruit, but it is lengthened out, and from it, as from a receptacle, come out ſeveral globules, flatted a little and in a chain, no veſtige of which is in the flower. At firſt they are the ſize of a Lentil ſeed, and when perfect they are as big as a large Plum: they are exactly ſpherical, very ſmooth, and ſeparated from the receptacle by a petiole: from the top of each globule iſſues a ſhort petiole uniting it to the next, and ſo on: no future is apparent in the globules, nor are they cloven as in the proper legume; but they are compoſed of a thick hard ſubſtance, in the middle of which is a cavity, as in oblong Plums, filled with one kidney-form ſeed, the ſize of a large Kidney Bean, with the hilum or umbilical ſcar at the angle, as in leguines.

This plant has a near affinity to Sophora, but it differs from it in having the ſtamens properly diadelphous, and the fruit not leguminous, or opening longitudinally by two valves.

Native of Surinam[b].

[a] Willdenow. [b] Linn. ſuppl.

MUNCHHAUSIA. (*So named from Baron Gerlach Adolphus de Munchhausen.*)

Lin. gen. Reich. n. 976. *Schreb. n.* 1220. *Juss.* 331. Class. 18. 4. Polyadelphia Polyandria.

Nat. order of *Calycanthemæ. Salicariæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, half-six-cleft, turbinate, toruloſe, permanent; with blunt ſegments.

COR. *Petals* ſix, obovate, ſpreading, clawed, inſerted into the calyx.

STAM. *Filaments* twenty-four or thirty, capillary, ſhorter than the petals, collected into ſix bodies. *Anthers* kidney-form.

PIST. *Germ* ſuperior, ovate. *Style* filiform, declining, of a middling length. *Stigma* blunt.

PER. *Capſule* ovate, acuminate, ſix-celled.

SEEDS very many.

OBS. *It is allied to* Lagerſtroemia,

ESSENTIAL CHARACTER.

Cal. ſix-cleft, toruloſe. *Pet.* clawed. *Stam.* in ſix bodies, four or five in each. *Piſt.* ſuperior, with a filiform curved ſtyle.

SPECIES.

1. Munchhauſia ſpecioſa.

Lin. ſyſt. 697. *Reich.* 3. 586. *mant.* 243. *Murr. prodr. præf. cum ic. Munch. hauſo.* 5. 357. *t.* 356.

DESCRIPTION, *&c.*

This is a ſmall tree, with alternate, patulous, round, ſmooth branches. Leaves alternate, ovate or ovate-oblong, acuminate, quite entire, ſmooth, paler underneath; on very ſhort petioles. Stipules none. Racemes terminating, ſomewhat branched, erect, a foot long, ſtrict, round, ſmooth. Flowers alternate, on very ſhort peduncles, extremely handſome. Calyxes ſubtomentoſe, with ſix channelled ſwellings. Petals four times as large as the calyx. Stamens half the length of the petals. Style at firſt equal to the ſtamens, but afterwards longer[1].

Native of Java and China. Cultivated in the Upſal garden in 1748, and flowered there the year following[2].—See *Lagerſtroemia.*

MUNDA-VALLI. See *Ipomœa.*

MUNDUBI. See *Arachis.*

MUNDURIQUACU. See *Jatropha.*

MUNGOS. See *Ophiorrhiza.*]

MUNTINGIA. (*So named by Plumier, from Abraham Munting, Profeſſor of Botany at Groeningen.*)

Lin. gen. n. 651. *Reich. n.* 707. *Schreb. n.* 884. *Plum.* 6. *Jacqu. amer.* 166. *Gærtn. t.* 59. *Juss.* 291.

Class. 13. 1. Polyandria Monogynia.

Nat. order of *Columniferæ. Tiliaceæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted, concave at the baſe: *ſegments* lanceolate, acuminate, large: deciduous.

COR. *Petals* five, roundiſh, ſpreading, inſerted into the calyx.

STAM. *Filaments* very many, capillary, very ſhort. *Anthers* roundiſh.

PIST. *Germ* globular, clothed with villoſe hairs. *Style* none. *Stigma* headed, pentagonal, rayed, permanent:—pyramidal, five-grooved, ſeſſile. *G.*

PER. *Berry* globular, umbilicate with the ſtigma, five-celled.

SEEDS numerous, roundiſh, very ſmall, neſtling.

OBS. *The number of cells in the berry is frequently more than five.* G.

ESSENTIAL CHARACTER.

Cal. five-parted. *Cor.* five-petalled. *Berry* five-celled (many-celled. *G.*) *Seeds* many, neſtling.

SPECIES.

1. Muntingia Calabura. *Villoſe Muntingia.*

Lin. ſpec. 728. *ſyſt.* 490. *Reich.* 2. 576. *hort. cliff.* 203. *Swartz obſ.* 211. *Gærtn. fruct.* 1. 285. *Jacqu. amer.* 166. *t.* 107. *pict.* 81. *t.* 158. *Brown. jam.* 245. *Plum. gen.* 41. *ic.* 205. *Sloan. jam.* 2. 80. *t.* 194. *f.* 1. *Rai dendr.* 32. (Loti arboris folio, &c.)

Calabura alba. *Pluk. mant. t.* 152. *f.* 4.

[1] Murr. prodr. præf. a Linn. [2] Murr. prodr. præf.

DESCRIPTION, *&c.*

[This ſhrub or ſmall tree riſes from a fathom to ten or twelve feet, or according to Sloane thirty feet in height, ſending out many irregular, ſpreading, long, round, hairy branches, covered with a ſmooth dark purple bark, with diſtich ſlender branchlets or twigs ſet alternately. Leaves alternate, flat, ſpreading horizontally, oblique, ovate lanceolate, acuminate, unequally ſerrate, nerved, green and hirſute above, hoary-tomentoſe and viſcid underneath, three, four or five inches long and three quarters of an inch broad at the baſe; the upper ones more oblique, or ſtretching much farther back on one ſide of the petiole than they do on the other. Petioles ſhort, round, hirſute. Stipules ſolitary, the length of the petioles, filiform, hirſute in front at the baſe of the leaves. The hairs of the leaves are glandular. Peduncles two to four, between the petioles, and not axillary, cluſtered, longer than the petiole, ſhorter than the leaf, one-flowered, round, villoſe-viſcid. Jacquin remarks, that they ſucceſſively turn the flower when it is about to expand to the face of the leaf, which before was reflexed to the back of it. Flowers without ſcent but handſome, an inch in diameter, reſembling thoſe of the Bramble, according to Sloane. The calyx is aſh-coloured, and the petals are white. The former is five or ſix-parted; the parts the ſame length with the petals, hirſute, and viſcid: the latter five or ſix in number with a very ſhort claw, and plaited. Filaments twenty-five to thirty, ſhorter than the germ. Anthers twin. Germ ſmooth. Stigma five or ſix-cornered, five or ſix-rayed[1]. Berry ſpherical, crowned with the ſeſſile ſtigma, which has from four to ſix grooves, ſucculent, many-celled: partitions membranaceous, very thin, ſubdivided towards the periphery, when the cells are unequal and irregular. Seeds very ſmooth and ſhining, whitiſh or pale ſtraw-colour, neſtling in the pulp without any receptacle[m]. According to Jacquin, the berry is roſe-coloured with a tinge of yellow, and when cut tranſverſely ſeems to be one-celled, but if the pulp and ſeeds be gently preſſed out in water, it appears very clearly to be five-celled. Sloane ſays, the fruit is as big as a Cherry, and Miller] that it is as large as that of the Cockſpur Hawthorn; of a dark purple colour, when ripe.

Native of Jamaica, on the calcareous ſubalpine hills, flowering in the ſpring[n]: and of St. Domingo, in the wet parts of woods, flowering in auguſt and ſeptember[o].

This is not the Mullam Toddali of Rheede, hort. malab. as Linneus thought it was, for that is of a different genus, and has nothing in common with Muntingia Calabura, but a ſlight agreement in the leaves[p].]

The ſeeds of this plant were ſent by Mr. Robert Millar from Jamaica, which ſucceeded in ſome of the Engliſh gardens.

PROPAGATION AND CULTURE.

This plant is propagated by ſeeds, which ſhould be ſown in pots filled with light rich earth, and plunged into a moderate hot-bed of tanner's bark, and in warm weather the glaſſes ſhould be raiſed to admit freſh air. Theſe ſeeds will often remain in the ground a whole year before the plants will appear; in which caſe the pots muſt be kept conſtantly clear from weeds, and ſhould remain in the hot-bed till after michaelmas, when they may be removed into the ſtove, and plunged into the bark-bed, between other pots of tall plants, where they may remain during the winter ſeaſon. Theſe pots ſhould be now and then watered, when the earth appears dry, and in the beginning of march the pots ſhould be removed out of the ſtove, and placed in a freſh bark-bed under frames, which will bring up the plants ſoon after.

When the plants are come up about two inches high, they ſhould be carefully taken out of the pots, and each planted into a ſeparate ſmall pot filled with light rich earth, and then plunged into the hot-bed again, obſerving to ſhade them from the ſun until they have taken new root, after which time they ſhould

[1] Swartz, Jacquin. [m] Gærtner. [n] Swartz. [o] Jacquin. [p] Gærtner.

be duly watered, and in warm weather they muſt have a large ſhare of freſh air. In this hot-bed the plants may remain until autumn, when the nights begin to be cold; at which time they ſhould be removed into the ſtove, and plunged into the bark-bed. During the winter ſeaſon theſe plants muſt be kept warm, eſpecially while they are young, and frequently refreſhed with water; but it muſt not be given to them in large quantities leſt it rot the tender fibres of their roots. It will be proper to continue theſe plants in the ſtove all the year, but in warm weather they ſhould have a large ſhare of freſh air; but as the plants grow in ſtrength, they will be more hardy, and may be expoſed in ſummer for two or three months, and in winter will live in a dry ſtove, if kept in a moderate degree of heat.

[MURCIA. See *Myrtus*.

MUREX. See *Pedalium*.

MURIGUTI. See *Hedyotis*.

MURRAYA. (*So named by Koenig, in honour of Jo. Andr. Murray, knight of the order of Waſa, profeſſor of Medicine and Botany at Gottingen, &c. editor of Linnæus's Syſtema Vegetabilium, &c.*)

Lin. gen. Reich. n. 570. *Schreb. n.* 717. *Murr. comm. 9.* 186. *t.* 1. *Gærtn. t.* 93. *Juſſ.* 261. Marſana. *Sonnerat ind.* 2. *t.* 139.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Aurantiæ*. Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five parted, very ſmall; *ſegments* linear, erect, roundiſh, remote, permanent.

COR. five-petalled, bell-ſhaped: *petals* lanceolate, ſpreading at the top.

Nectary bell-ſhaped, ſhort, encircling the germ.

STAM. *Filaments* ten, awl-ſhaped, the length of the flower. *Anthers* ſomewhat oblong.

PIST. *Germ* roundiſh, ſuperior. *Style* filiform, ſubangular, longer than the ſtamens. *Stigma* flattiſh, warted, angular.

PER. *Berry* ſomewhat pulpy, one-celled.

SEED one, large, obovate, acute, grooved on one ſide.

ESSENTIAL CHARACTER.

Cal. five parted. *Cor.* bell-ſhaped, with a nectary encircling the germ. *Berry* one-ſeeded.

SPECIES.

1. Murraya exotica. *Aſh-leaved Murraya.*

Lin. ſyſt. 398. *mant.* 563. *Reich.* 2. 268. *Gærtn. fruct.* 2. 76.

Camunium japonicum. *Rumph. amb.* 5. 29. *t.* 18. *f.* 2.

Marſana buxifolia. *Sonner. ind.* 2. 245. *t.* 139.

Chalcas japonenſis. *Leur. cochinch.* 271.

DESCRIPTION, *&c.*

This is a tree of the ſmalleſt ſize, with a whitiſh bark, and the appearance of Schinus. Leaves alternate, petioled, ſomewhat rigid, unequally pinnate. Leaflets ſeven, petioled, alternate, obovate, ſmooth, bluntiſh. It was thought to be a very different plant from Chalcas paniculata[a], but it proves to be the ſame ſpecies. Loureiro however has two. Berry juiceleſs, ſuperior, globular, terminated by a ſhort point, obſcurely ſhagreened by raiſed dots or miliary tubercles, leathery, thin, one-celled. Seed almoſt the ſize of the berry, ſubglobular, covered all over with very ſhort ſoft fibres, preſſed cloſe to it, whitiſh or pale ſtraw-colour, fixed to the bottom of the berry, and cohering to it all round by its cuticle[b].

Native of the Eaſt Indies. Introduced in 1771, by Benjamin Torin, Eſq. It flowers in auguſt and ſeptember[c].]

MURUCUIA. See *Paſſiflora*.

MUSA. (*So named by Plumier, in memory of Antonius Muſa, the freedman of Auguſtus.*)

Lin. gen. n. 1141. *Reich. n.* 1248. *Schreb. n.* 1563. *Muſ. cliff.* 2. *Plum.* 34. *Gare. phil. tranſ.* 1730. *n.* 415. *t.* 2. *Trew commerc.* 1741. *t.* 5. *Ehret. t.* 18—23. *Breyn. act. nat. cur.* 8. *app.* 180. *Gærtn. t.* 11. *Juſſ.* 61.

Claſſ. 23. 1. Polygamia Monoecia.

Nat. order of *Scitaminæ*. *Muſæ*, Juſſ.

[a] Linn. mant. [b] Gærtner. [c] Hort. kew.

GENERIC CHARACTER.

* *Hermaphrodite* flowers more, towards the baſe of the ſimple Spadix, ſeparate in alternate ſpathes.

CAL. *Spathe* partial ovate-oblong, plano-concave, large, many-flowered.

COR. unequal, ringent: the petal conſtituting the upper lip, but the nectary the under lip. *Petal* erect, ligulate, truncate, five-toothed, converging in front at the baſe.

Nectary one-leafed, cordate, boat-ſhaped, compreſſed, acuminate, ſpreading outwards, ſhorter than the petal, inſerted within the ſinus of the petal.

STAM. *Filaments* ſix, awl-ſhaped, five of which within the petal are erect, the ſixth within the nectary is reclining. *Anthers* linear, from the middle to the top faſtened to the filament; but moſt frequently there is only one anther on the ſixth filament, and very ſmall ones or none on the reſt.

PIST. *Germ* very large, obtuſely three-ſided, very long, inferior. *Style* cylindric, erect, the length of the petal. *Stigma* headed, roundiſh, obſcurely ſix-cleft.

PER. *Berry* fleſhy, covered with an huſk, obſcurely three-ſided or ſix-ſided, gibbous on one ſide, one-celled, hollow in the middle.

SEEDS very many, neſtling, ſubglobular, wrinkled-tubercled, excavated at the baſe. *G.* or only rudiments.

* *Males* on the ſame Spadix, above the Hermaphrodite flowers, ſeparated by Spathes.

CAL. COR. and NECT. as in the Hermaphrodites.

STAM. *Filaments* as in the Hermaphrodites, equal, erect. *Anthers* as in the Hermaphrodites, on the filament placed within the nectary, moſt frequently very ſmall or none.

PIST. *Germ* as in the Hermaphrodites, but leſs. *Style* and *Stigma* as in them, but leſs and more obſcure.

PER. is abortive.

SEEDS

OBS. *The flowers, often monſtrous, vary much in the number of parts of the corolla, ſtamens and anthers both perfect and imperfect; they do not always therefore agree exactly with Linnæus's deſcription. Scopoli obſerved five ſtamens only. Berry of* M. Troglodytarum *three-celled.*

ESSENTIAL CHARACTER.

Cal. Spathe partial many-flowered. *Cor.* two-petalled; one petal erect five-toothed, the other nectariferous concave ſhorter. *Stam.* ſix. *Style* one. All the flowers *hermaphrodites*.

Male Herm. above; five filaments perfect. *Germ* inferior, abortive.

Fem. Herm. one filament only perfect. *Berry* oblong, three-ſided, inferior, many-ſeeded.

SPECIES.

1. Muſa paradiſiaca. *Plantain Tree.*

Lin. ſpec. 1477. *ſyſt.* 902. *Reich.* 4. 295. *hort. cliff.* 467. *upſ.* 301. *fl. zeyl. n.* 368. *Burm. ind.* 217. *Thunb. jap.* 130. *Forſk. prodr. n.* 382, *eſcul.* 28. *Brown. jam.* 363. 1. *Hoffelgu. it.* 491. 259. *Gron. orient.* 324. *Gærtn. fruct.* 1. 29. 7.

M. cliffortiana. *Lin. muſ.* 1. *t.* 1. *Trew Ehret. t.* 18, 19. 20.

Muſa. *Cluſ. exot.* 229. *Sterb. citr. t.* 4. *Rumph. amb.* 5. 125. *t.* 60. *Garcin philoſ. tranſ.* 1730. *n.* 415. *t.* 2.

M. arbor. *Baub. hiſt. Park. theat.* 1495. *f.* 1496. *Raii hiſt.* 1374.

M. Serapionis. *Ger.* 1332. *emac.* 1515.

Ficus indica fructu racemoſo folio oblongo. *Bauh. pin.* 508.

Palma humilis longis latiſque foliis. *Baub. pin.* 107.

Bata. *Rheed. mal.* 1. 17. *t.* 12, 13, 14.

Spadix nodding, male flowers permanent.

2. Muſa ſapientum. *Banana Tree.*

Lin. ſpec. 1477. *ſyſt.* 902. *Reich.* 4. 295. *Gærtn. fruct.* 1. 29. β. *Swartz obſ.* 382. *Brown. jam.* 363. 2. *Sloan. jam.* 2. 147. *Trew Ehret.* 4. *t.* 21, 22, 23.

Muſæ affinis altera. *Bauh. pin.* 508.

Arbor foliis ampliſſimis fructu cucumeris forma. *Bauh. pin.* 508.

Banana. *Maregr. Raii hift.* 1375.
Spadix nodding, male flowers deciduous.

[3. Musa Troglodytarum.
Lin. fpec. 1478. *Juff.* 902. *Reich.* 4. 296. *Gærtn. fruct.* 1. 29.

M. Uranifcopia. *Rumph. amb.* 5. 137. *t.* 61. *Lour. cochinch.* 645.
Spadix erect, fpathes deciduous.

DESCRIPTIONS, *&c.*

Root a perennial roundifh folid watery bulb, dufky on the outfide, white within; with a few thick fibres. Stem biennial, fometimes longer lived, from five to twenty feet in height, upright, very ftraight, quite fimple, thick, round, fmooth, fungous, watery, lamellated: the lamellæ convoluted, each ending in long channelled embracing petioles, imbricate at the bafe. Leaves oblong, blunt, quite entire, from three to ten feet in length, and lefs than two feet in width, having many tranfverfe ftreaks or grooves, fmooth, bright green, readily divifible at the grooves. Flowers terminating, whitifh, in one very large raceme or bunch, moft commonly reflex, thick, round, compound: racemelets alternate, feffile, with the flowers extended in breadth in a double row. General calyx none: partial of each racemelet a fpathe, which is fubacute, concave, grooved, purplifh, opening fucceffively, deciduous. Proper perianth none. Petals two: outer erect, blunt, five-toothed and reflex at the end; inner boat-fhaped, quite entire, fhorter, reflex at the bafe. In the fertile flower five filaments, which are awl-fhaped, fhorter than the erect petal, fitting on the receptacle: of thefe one or two, fometimes all, are antheriferous: anthers linear, lateral. Germ oblong, inferior, bluntly three-cornered. Style linear, thick, longer than the ftamens. Stigma headed, grooved at the top. Berry oblong, fomewhat angular, fleffhy, fweet, eatable, three-celled; containing many roundifh black neftling feeds. The barren flower has alfo five filaments, of which frequently all, often fome only, fometimes none are antheriferous; the corolla is like that of the fertile flower: ftyle, ftigma, and germ fmall and abortive. The fertile flowers always occupy the lower, and the barren ones the upper part of the raceme: both are always deciduous, as are alfo the fpathes, except the uppermoft and outmoft, which rot within the fpathes [a].

They are natives of hot climates only, and are generally cultivated within the tropics. They do not however feem to have been indigenous of America.]

1. This plant rifes with a foft herbaceous ftalk fifteen or twenty feet high, and upward; the lower part of the ftalk is often as large as a man's thigh, diminifhing gradually to the top, where the leaves come out on every fide, which are often more than fix feet long, and near two feet broad, with a ftrong fleffhy midrib, and a great number of tranfverfe veins running from the midrib to the borders. The leaves are thin and tender, fo that where they are expofed to the open air, they are generally torn by the wind; for as they are large, the wind has great power over them: thefe leaves come out from the fide of the principal ftalk, inclofing it with their bafe; they are rolled up at their firft appearance, but when they are advanced above the ftalk they expand quite flat, and turn backward; as thefe leaves come up rolled in the manner before mentioned, their advance upward is fo quick, that their growth may be almoft difcerned by the naked eye; and if a line is drawn acrofs, level with the top of the leaf, in an hour's time the leaf will be near an inch above it. When the plant is grown to its full height, the fpike of flowers will appear from the centre of the leaves, which is often near four feet in length, and nods on one fide. The flowers come out in bunches, thofe on the lower part of the fpike being the largeft; the others diminifh in their fize upward; each of thefe bunches is covered with a fpatha or fheath, of a fine purple colour within, which drops off when the flowers open. The upper part of the fpike is made up of male or barren flowers, which are not fucceeded by fruit. The fruit is eight or nine inches long, and above an inch diameter, a little incurved, and has three angles; it is at firft green, but, when ripe, of a pale yellow colour. The fkin is tough, and within is a foft pulp of a lufcious fweet flavour. The fpikes of fruit are often fo large as to weigh upwards of forty pounds.

[Native of the Eaft Indies, and other parts of the Afiatic continent, probably alfo of Africa. Cultivated generally between the tropics.] Said to be tranfported to the Weft Indies from the Canary iflands, to which it is believed that it was carried originally from Guinea. [It feems to have migrated with mankind from Afia into the numerous iflands of the fouthern Pacific Ocean, where it is univerfal in all the iflands that are inhabited, and has degenerated into numerous varieties. It was not known in America before the arrival of the Spaniards [b].

It was cultivated here in 1690, in the royal garden at Hampton-court, and commonly flowers with us from october to december [c]. Johnfon the editor of Gerarde's herball, fays that april 10, 1633, his much honoured friend Dr. Argent, then prefident of the College of Phyficians in London, gave him a plant of the Mufa, which he received from the Bermudas. The fruit on it was unripe, but he hung up the ftalk with the fruit thereon in his fhop, where it became ripe about the beginning of may, and lafted until june; the pulp was very foft and tender, and it did eat fomewhat like a Mufk Melon. Gerarde and other old authors name it *Adam's Apple-tree*, from a notion that it was the forbidden fruit of Eden; whilft others fuppofed this fruit to have been the Grapes brought out of the promifed land to Mofes.

Dampier thus fpeaks of it.—The Plantain is the king of all fruit, not excepting the Coco itfelf. The tree is three feet, or three feet and a half round, and ten or twelve high. It is not raifed from feed, but from the roots of other old trees. If thefe young fuckers are taken out of the ground, and planted in another place, it will be fifteen months before they bear, but if let ftand in their own native foil they will bear in twelve months. As foon as the fruit is ripe the tree decays, and many young ones grow up to fupply its place. The fruit of it is fo excellent, that the Spaniards give it the preference to all others, as moft conducing to life. It grows in a cod fix or feven inches long, and as big as a man's arm; the rind is foft, and yellow when ripe. It refembles in fhape a hog's pudding. The inclofed fruit is no harder than butter is in winter, and much of the colour. It is of a delicate tafte, and melts in one's mouth like marmalet. It is all pure pulp, without any feed, kernel or ftone. The fruit is fo much efteemed by all Europeans that fettle in America, that when they make a new plantation, they commonly begin with a good Plantain-walk; enlarging it as their family increafes. Some or other of the trees are bearing moft part of the year; and this is many times the whole food on which a family fubfifts. They thrive only in rich flat ground; poor fandy foil will not bear them. When this fruit is ufed only for bread, it is roafted or boiled when it is juft full grown, but not yet ripe, or turned yellow. The Indians and Negroes eat them in a variety of ways, both raw and dreffed, freth and preferved: they alfo make a fermented liquor with them, which they drink always new. The ordinary people of Mindanao wear no other cloth, but what is made from the fibres of the trunk.

There is another fort in Mindanao, fhorter and leff than the other. Thefe are full of black feeds mixt quite through the fruit. They are binding, and much eaten by thofe that have fluxes.

In the Weft Indies the fruit is generally ufed when full grown, but before it ripens: it is commonly peeled and roafted, and is thus diftributed among the negroes, by whom it is mottly ufed; though many of the whites prefer it to any of the bread kind, efpecially whilft young and tender. The negroes generally boil it with other meffes, as falt-fifh, beef, pork, pickle or crabs, and find it a hearty wholefome food. As the fruit

[a] Loureiro.

[b] Forfter elcul.

[c] Hort. kew.

ripens, it becomes ſoft and ſweetiſh, and is then generally made into tarts, or ſliced and fried with butter. The juice of the tree is a very rough aſtringent. The leaves are generally uſed to dreſs bliſters; and when dried are made into mats, or employed to ſtuff matraſſes [a].

The Spaniards dry and preſerve the fruit as a ſweetmeat. The ripe fruit and maize together are the beſt food for hogs put up to fat, and give them a moſt exquiſite flavour and firmneſs. On thruſting a knife into the body of the plant, the aſtringent limpid water that iſſues out is given with great ſucceſs to perſons ſubject to a ſpitting of blood, and in fluxes [b].

The fruit of ſome out of the many varieties is eaten in the iſlands of the South Seas raw, of others roaſted or baked, according to their different qualities. The trees which bear the former are the chief ornaments of the gardens in Otaheite; the latter are in the mountainous tracts of the iſlands, that are covered with woods. This fruit is eaſy of digeſtion, very wholeſome and agreeable to ſeamen after a long voyage: to many however its clammy ſweetneſs is unpleaſant; and it is reputed to diſagree with weak ſtomachs, to bring on a conſtipation and flatulency in the bowels. Rumphius is of opinion, that whether crude or mature, this fruit, running readily into putreſcence, increaſes the malignity of the humours in the epidemic dyſentery [c].

2. The Banana or Bonana tree, as it is ſometimes written, differs from the preceding in having its ſtalks marked with dark purple ſtripes and ſpots. The fruit is ſhorter and rounder, with a ſofter pulp of a more luſcious taſte. [Dampier ſays the Banana is leſs luſcious than the Plantain, yet of a more delicate taſte. According to Long, it has a ſofter, mellower taſte, and is more proper for fritters than the Plantain. A very excellent drink is made from the juice of the ripe fruit fermented, moſt reſembling the beſt Southam cyder. A marmalade is likewiſe made of it, eſteemed an excellent pectoral, cooling and refreſhing.

The Banana fruit ripe, has been noted for its efficacy in correcting thoſe ſharp humours, which generate, or accompany the fluxes, to which Europeans are often ſubject on their firſt coming into the Weſt Indies. The roaſted fruit would be an uſeful ſea ſtore, would keep a long time, packed in dry leaves, and ſtowed in tight caſks; and would require only a freſh roaſting or heating, when wanted for uſe.—It was cultivated in 1731, by Mr. Miller.

Theſe two fruits are among the greateſt bleſſings beſtowed by Providence upon the inhabitants of hot climates. Three dozen Plantains are ſufficient to ſerve one man for a week inſtead of bread, and will ſupport him much better [d].

Though the Plantain and Banana are generally conſidered as different, yet Loureiro, Forſter and Gærtner cannot find any certain ſpecific diſtinction, and agree that Linnæus's is inſufficient. Gærtner unites them under the character of a one-celled berried fruit, which ſeparates them from Muſa Troglodytarum, that having a three-celled berried fruit.

There are many varieties of Plantain and Banana, as might be expected in plants ſo extenſively cultivated. Rumphius has ſet down ſixteen, which he obſerved in the Molucca iſlands. Forſter has enumerated theſe: and Loureiro has four ſpecies with ſeveral varieties, beſides Muſa Troglodytarum.

3. Stem four feet high, an inch in thickneſs. Leaves linear, three feet long, and five inches wide. Spathes linear, alternate, ſcarlet, many. Berry ſcarlet, ovate, compreſſed, two inches long, not eatable [e]. Gærtner deſcribes it as columnar, drawn to a point at both ends, curved, hexangular, leathery-fleſhy, very ſmooth, yellowiſh-green, three-celled: partitions membranaceous, thickiſh, meeting and connected near the axis. Seeds numerous, in a double row in each cell, fixed to the axis of the fruit, variouſly angular, jointed into one another as it were like the ſtones of a pavement, without any pulp between them, acuminate towards the umbilicus, very ſmooth, ferruginous or blackiſh.

Thunberg ſays that they are almoſt as large as Linſeed or the ſeed of Flax. Gærtner aſſerts, that this is a genuine ſpecies of Heliconia.

Native of the Molucca iſlands.]

PROPAGATION AND CULTURE.

In Europe there are ſome of theſe plants preſerved in the gardens of curious perſons, who have hot-houſes capacious enough for their reception, in many of which they have ripened their fruit very well; but as they grow very tall and their leaves are large, they require more room in the ſtove than moſt people care to allow them: they are propagated by ſuckers, which come from the roots of thoſe plants which have ſhifted; and many times the younger plants, when they are ſtinted in growth, will put out ſuckers; theſe ſhould be carefully taken off, preſerving ſome fibres to their roots, and planted in pots filled with light rich earth, and plunged into the tan-bed in the ſtove: theſe may be taken off any time in ſummer, and it is beſt to take them off when young, becauſe if their roots are grown large, they do not put out new fibres ſo ſoon, and when the thick part of the root is cut in taking off, the plants often rot.

During the ſummer ſeaſon theſe plants muſt be plentifully watered, for the ſurface of their leaves being large, there is a great conſumption of moiſture, by perſpiration in hot weather, but in the winter they muſt be watered more ſparingly, though at that ſeaſon they muſt be often refreſhed, but it muſt not be given them in ſuch quantities.

The pots in which theſe plants are placed, ſhould be large in proportion to the ſize of the plant, for their roots generally extend pretty far, and the earth ſhould be rich and light. The degree of heat with which theſe plants thrive beſt, is much the ſame with the Anana, or Pine Apple, in which I have had many of theſe plants produce their fruit in perfection, and they were near twenty feet high.

The moſt ſure method to have theſe plants fruit in England is, after they have grown for ſome time in pots, ſo as to have made good roots, to ſhake them out of the pots with the ball of earth to their roots, and plant them into the tan-bed in the ſtove, obſerving to lay a little old tan near their roots for their fibres to ſtrike into, and in a few months the roots of theſe plants will extend themſelves many feet each way in the bark; and theſe plants will thrive a great deal faſter than thoſe which are confined in pots or tubs. When the bark-bed wants to be renewed with freſh tan, there ſhould be great care taken of the roots of theſe plants, not to cut or break them, as alſo to leave a large quantity of the old tan about them, becauſe if the new tan is laid too near them, it will ſcorch their roots, and injure them: theſe plants muſt be plentifully ſupplied with water, otherwiſe they will not thrive; in winter they ſhould be watered twice a week, giving at leaſt two quarts to each plant, but in ſummer they muſt be watered every other day, and double the quantity given to them each time. If the plants puſh out their flower-ſtems in the ſpring, there will be hopes of their perfecting their fruit; but when they come out late in the year, the plants will ſometimes decay before the fruit is ripe. The ſtoves in which theſe plants are placed ſhould be at leaſt twenty feet in height, otherwiſe there will not be room for their leaves to expand; for when the plants are in vigour, the leaves are often eight feet in length, and two feet broad: ſo that if the ſtems grow to be fourteen feet to the diviſion of the leaves, and the houſe is not twenty feet high, the leaves will be cramped, which will retard the growth of the plants; beſides, when the leaves are bent againſt the glaſs, there will be danger of their breaking them, when they are growing vigorouſly; for I have had in one night the ſtems of ſuch bent leaves force through the glaſs, and by the next morning advanced two or three inches above the glaſs.

I have ſeen ſome bunches of fruit of the firſt ſort, which were upwards of forty pounds weight, and perfectly ripe in England; but this is not ſo good a fruit, as to tempt any perſon to be at the expence of raiſing them in England. The ſecond ſort is preferred to the firſt,

[a] Browne. [b] Long, jam. 782. [c] Forſter. [d] Long, jam. 783. [e] Loureiro.

first, for the flavour of its fruit, in all thoſe hot countries where theſe plants abound: the bunches of theſe are not near ſo large as thoſe of the firſt ſort, nor are the ſingle fruit near ſo long; theſe change to a deeper yellow colour as they ripen, but their taſte is ſomewhat like that of meally figs. Some perſons who have reſided in the Weſt-Indies, having eaten ſome of theſe fruit which were produced in England, thought them little inferior to thoſe which grew in America; and I imagine, that the inhabitants of thoſe countries would not eſteem theſe fruits ſo much, had they variety of other ſorts; but, for want of better, they eat many kinds of fruit, which would not be valued in Europe, could they be obtained in perfection.

[The Plantain Tree is cultivated with great care in all our ſugar-colonies. It thrives beſt in a cool, rich, moiſt ſoil, and is commonly planted in regular walks or fields: it is propagated by the ſhoots, and planted at convenient diſtances; but as the root throws up a number of young ſhoots every year, the ſpaces between the firſt plants are left pretty conſiderable. When the fruit is ripe, the ſtem decays gradually, and the root begins to throw up young ſhoots. The ſtem is then uſually cut down near the root, to give a ſtronger and quicker growth to the new plants[1].

In the South Sea iſlands, they put ſome wood aſhes and burnt plants with a little ſhell lime into the hole, when they plant the Muſa, by which they ſo accelerate the growth, as to have fruit in ſix and even four months; whereas in the common courſe it is eighteen months before fruit is expected[2].

MUSA BIBAI. See *Iriticoma*.

MUSCARI. See *Hyacinthus*.

MUSCIPULA. See *Dionæa* and *Silene*.

MUSCO-FUNGUS. See *Tschou* and *Tremella*.

MUSCORNIS. See *Muium* and *Jungermannia*.]

MUSCUS, Moſs. *Muſci*, Moſſes.

Formerly ſuppoſed to be only exreſcencies produced from the earth, trees, &c. but now known to be plants no leſs perfect than thoſe of greater magnitude. [They are ranged by Linneus in the ſecond Order of his twenty fourth Claſs, entitled *Cryptogamia Muſci*: but ſo much having been done to his hands on the ſubject of this Order by Dillenius, he did little more than arrange the ſpecies, and give them ſpecific characters.

Linneus has three diviſions of the Moſſes.—1. Without any Calyptre or Veil: containing the following genera—*Lycopodium*, *Porella*, *Sphagnum*. 2. Calyptred, diclinous, or having the males and females ſeparate—*Splachnum*, *Polytrichum*, *Mnium*. 3. Calyptred, monoclinous, or having the males and females on the ſame plant—*Phaſcum*, *Bryum*, *Hypnum*, *Fontinalis*, *Buxbaumia*.

Since the time of Dillenius and Linneus, great light has been thrown upon this obſcure order by Jacquin, Hoffman, Wiegel, Batſch, Pollich, Weis, Ehrhart, Schmidel, Schreber, Dickſon, Withering, Stackhouſe, &c. but eſpecially by Hedwig, who firſt communicated the reſult of his obſervations to the Academy of Sciences at Peterſburgh in the year 1783.

According to this laſt author, Moſſes are vegetables, in which the female parts of fructification are furniſhed with a veil-like petal, bearing a ſtyle. He divides them into two Orders:

1. *Capſule* entire, lidded, and opening tranſverſely: *Frondoſi*.

2. *Capſule* with four valves, opening lengthways: *Herbatici*.

The latter are not ranged with the *Muſci*, but with the *Algæ* by Linneus.

Theſe definitions of Hedwig exclude the *Lycopodium* from the Moſſes.

General Character of Muscı or Mosses.

* *Male* Flowers.

CAL. common, of many leaves: *leaflets* in ſtructure reſembling thoſe of the plant, but generally broader, ſometimes coloured, open and expanding like the rays of a ſtar, or the petals of a full-blown roſe, or elſe cloſing and approaching like a bud.—A few have no appearance of a calyx.

COR. none.

STAM. numerous, within the common calyx, moſtly ſeparated by ſucculent threads or chaff-like ſubſtances: ſometimes uniting ſo as to form a little knob, or placed in the axils of the upper branches. *Filament* ſhort, filiform. *Anthers* ſometimes cordate or ovate, but moſtly cylindrical, one-celled, opening at the top and diſcharging granulated pollen.

* *Female* Flowers, on the ſame or a different plant, ſometimes intermixed with the males.

CAL. *Perichætium* many leaved; *leaflets* various, generally incloſing ſeveral piſtils intermixed with ſucculent threads.

COR. *Veil* cylindrical or conical, inveſting the germ and fixed to its top, united at the baſe to the ſheath of the peduncle, but not elſewhere attached.

PIST. *Germ* cylindrical or conical. *Style* ſlender, ſtanding on the veil. *Stigma* truncate.

PER. *Capſule* on a peduncle ſheathed at the baſe, when unripe crowned by the veil which ſeparates at its baſe, adhering to the point of the capſule; but falling off when that becomes ripe. The capſule then opens horizontally, the lid ſeparating.

Lid with or without a ring, ſingle? or double; *outer* cartilaginous, ſometimes ſwollen, or elſe contracted at the baſe, forming a kind of excreſcence called *Apophyſis*.

Mouth of the capſule either naked, or cloſed with an outer fringe.

Outer fringe with from four to thirty-two teeth, which are upright or reflected, ſtraight or twiſted, triangular, ſpear-ſhaped or briſtle-ſhaped, ſharp or blunt.

Inner fringe finer, either cloſely adhering to the outer, or joined to it by threads from its inner ſide, or looſe and unconnected, or fixed to the pedicle on its little bulb. *Mouth* naked, or covered with a membrane or network of the inner fringe, or variouſly jagged, or cloſed by diſtinct and regular teeth. *Column* extending from the baſe to the point of the capſule, filiform, ſtraight, paſſing through the lid into the ſtyle, and often giving the lid a pointed appearance.

SEEDS numerous, minute, ſpherical, ſmooth or rough.

HABIT. *Stems* leafy. *Leaves* membranaceous, reticulated, after being dried reviving when ſoaked in water.

Obſervations.

If *Bryum pomiforme*, *ſubulatum* of Haller, *trichodes*, and a few others be excepted, Moſſes bear the ſtamens and piſtils in ſeparate flowers, either on the ſame, or on diſtinct plants.

The time of flowering generally coincides with that of the fruit attaining maturity, as happens in other evergreen perennials. Thus in *Polytrichum urnigerum*; *Mnium fontanum*, *bornum*, *punctatum*, *undulatum*; *Bryum trichodes*, *cæſpitilium*, &c. the veils fall off early in the ſpring, and the ſeed is ſcattered abroad; whilſt at the ſame time the leſs obvious unimpregnated germs, and the male or ſtameniferous flowers are performing their reſpective functions. This circumſtance cauſed theſe ripe capſules to be miſtaken for anthers, and the ſeeds for pollen.

Both male and female flowers are furniſhed with an involucre, which gives the outward figure to the flower, and is called the *Perichætium*. It varies more, and is more to be attended to in the male than in the female flowers. The radiated diſks of the Polytrichums and Mniums are very remarkable, and the ſcales compoſing them differ in many reſpects from the other leaves. The heads which put forth at the extremities of the Bryums have been hitherto unnoticed, though they contain the parts of fructification, and are compoſed of leaflets or ſcales different both in ſhape and ſize from the ſtem-leaves. Thus in *Bryum rurale* they are not terminated by hairs, and are ſhorter than the ſtem-leaves. In *Bryum pellucens*, *ſcoparium*, *heteromallum*, *aſiculare*, &c. they are broader than the other leaves, and more hollow at the baſe. Where the diſk-like ſubſtances form a kind of bud, as in almoſt all the *Hypnums*, *Bryum extinctorium*, *ſubulatum*, *pulvinatum*, *hypnoideum*, &c. they are much ſmaller than the leaves; they are alſo concave, ovate or ſpoon-ſhaped,

[1] Browne. [2] Forſter.

ſhaped, and deſtitute of the hairs which are on the real leaves[1]. Theſe therefore are truly the calyx, and as they include the florets with ſtamens only, they may be called the Perichætiums of the male florets.

On thoſe Moſſes which bear female flowers or capſules, the leaves adjoining to the peduncle are much more beautiful than thoſe on the ſtems: but ſometimes the inner leaves become gradually ſmaller, and thoſe neareſt to the flowers ſo very minute, that without a microſcope it is not poſſible to diſſect them away ſo as to expoſe the flower. Theſe therefore are to be conſidered as the involucres of the female flowers, ſurrounding and embracing the germ.

Male or ſtameniferous flowers.

The *Anthers* are almoſt univerſally cylindrical, either ſtraight or crooked; but in *Sphagnum paluſtre* and *Mnium androgynum*, they are ovate and more or leſs tapering to a point. Their colour is a very dilute green, almoſt white. When viewed under the higheſt magnifiers, and ſtrongly illuminated by reflected light, they are found to contain a granulated ſubſtance; but their tops are very pellucid, and this pellucid part expands into a riſing veſicle at the time the pollen is about to be diſcharged. The top then opens and the pollen is ejected, the ſpace from which it iſſues becoming more tranſparent. This pollen, when evacuated, ſeems to explode in the drop of water, in which theſe obſervations are to be made.

Beſides the anthers, included within the ſame involucre are ſome very delicate ſucculent bodies, of various ſhapes.

In *Polytrichum* and *Mnium* ſome of the barren florets are like diſks, others like roſes; and ſome like ſtars, when in a fully expanded ſtate. In the ſtellated Polytrichums the ſcales are placed in concentric circles. In *Mnium hornum, paluſtre, fontanum*, &c. they are more like a roſe or a diſk. After the pollen is diſperſed, theſe roſes or ſtars become more expanded; but previous thereto they are generally ſo open as to admit a view of the parts they contain. In ſome Moſſes the flowers terminate the branches, as in *Mnium pyriforme* and *purpureum*; *Bryum pellucidum, aciculare, ſcoparium, heteromallum, viridulum, ſimplex*, &c. in ſuch, though a little open, they are not enough ſo to allow a ſight of the anthers, until the flowering be paſt. Some florets are like buds, and ſit in the boſom of the leaves; others in the imbricated thickened termination of the branches, as in *Sphagnum*.

Female flowers.

Theſe are furniſhed with a germ, ſtyle and ſtigma; but being accompanied by other ſubſtances much reſembling them, they are difficult to be diſtinguiſhed until the germ begins to ſwell, in conſequence of its impregnation.

The piſtils, after impregnation, daily growing larger, and riſing upwards, ſhow the calyptra or veil, which may be conſidered as a kind of petal, and is perforated at the top by the ſtyle. This ſtyle is ſometimes permanent, falling off only with the veil itſelf; but where it is not ſo, the remains of it are always to be found.

It is evident, from what has been ſaid, that what Linnæus called the anthers, are really the ſeed veſſels: but by ſowing the ſeeds which they contain, a crop of young plants has been repeatedly procured, in all reſpects ſimilar to their parents[1].

Mr. John Lindſay, ſurgeon in Jamaica, ſowed the fine duſt from the fructification of *Lycopodium cernuum* and *Bryum cæſpitium* repeatedly, and in a proper ſituation found them to grow very readily. He alſo raiſed plants from the fine elaſtic filaments and ſmall globules, commonly conſidered as the male parts, of *Marchantia polymorpha*. This however is not now conſidered as a Moſs properly ſo called, but one of the *Hepaticæ*. Joſeph Fox alſo raiſed plants of *Lycopodium Selago* from ſeed. It is ſingular that Mr. Miller ſhould poſitively aſſert in the year 1768, that Moſſes cannot be propagated from ſeed by any art; and that a journeyman weaver of Norwich ſhould accompliſh it in the year 1779[2].

[1] Withering edit 3. 1. 356.
[2] Smith in Linn. tranſ. 2. 314.

The Capſules of Moſſes are always ſupported upon a peduncle, though ſometimes it is very ſhort, and excepting only in *Sphagnum paluſtre*, it is ſheathed and conical at its baſe. The capſules vary in ſhape, ſize and conſiſtence. In ſome ſpecies there is an elaſtic ring between the capſule and the veil, which when the ſeed is ripe, throws off the veil with more or leſs force. The veil being thrown off certain fringe-like proceſſes or projections appear, varying greatly in ſize, ſhape, ſtructure, number and diſpoſition: they ſurround the opening of the capſule in a ſingle or double, rarely in a triple ſeries. Theſe ſubſtances conſtitute the *Periſtoma*. The uſe of this Periſtoma or Fringe ſeems to be, to defend the ſeeds in wet weather. In dry weather it expands and leaves the mouth of the capſule open, but upon the leaſt moiſture, even that of the breath, it cloſes again.

The Seeds of Moſſes are ſpherical, generally ſmooth, ſometimes dotted, as in *Bryum extinctorium*, ſometimes prickly, as in *Bryum pyriforme* and *heteromallum*. They are brown, yelloviſh or greeniſh[1].

Some of the above obſervations being made with very high magnifiers are to be received with ſome degree of caution.

Uſes.

Moſſes thrive beſt in barren places. Moſt of them love cold and moiſture. Trifling and inſignificant as they are generally ſuppoſed to be, their uſes are by no means inconſiderable. They protect the more tender plants when they firſt begin to expand in the ſpring, as the experience of the gardener can teſtify, which teaches him to cover with moſs the ſoil and pots which contain his tendereſt plants; for it equally defends the roots againſt the ſcorching ſun beams and the ſeverity of the froſt. In the ſpring particularly the roots of young trees and ſhrubs are liable to be thrown out of the ground, eſpecially in light ſpongy ſoils: but if they are covered with moſs, this accident never can happen. They who raiſe trees from ſeed, will find an intereſt in attending to this remark.

Moſſes retain moiſture a long time without being diſpoſed to putrefy. The angler takes advantage of this circumſtance to preſerve his worms, and the gardener to keep moiſt the roots of ſuch plants as are to be tranſported to any conſiderable diſtance.

It is a vulgar error to ſuppoſe that Moſſes impoveriſh land. It is true they grow upon poor land which can ſupport nothing elſe; but their roots penetrate very little, in general hardly a quarter of an inch into the earth. Take away the moſs, and inſtead of more graſs there will be leſs: but if the land be drained and manured, the graſs will increaſe, and the moſs will diſappear.

Sphagnum paluſtre, Mnium triquetrum, Bryum paludoſum and *æſtivum, Hypnum adnexum, ſcorpioides, riparium* and *cuſpidatum* grow upon the ſides and ſhallower parts of pools and marſhes: in proceſs of time, occupying the ſpace heretofore filled with water, they are in their half-decayed ſtate, dug up and uſed as fuel, under the name of Peat. Theſe marſhes, drained partly by human induſtry, and partly by the long continued operations of vegetables, are at length converted into fertile meadows. Very few Moſſes are eaten by cattle. A few Moths feed upon ſome of them. Their medicinal virtues are but little known, and leſs attended to. It is probable, on account of their aſtringent properties, that ſome of them might be worth trying as a ſubſtitute for oak bark in tanning leather[2].

Moſſes are frequently very injurious to trees, particularly Fruit trees, which grow upon cold barren ſoils, or where they are ſo cloſe planted as to exclude the free acceſs of air. The only remedy in ſuch a caſe is to cut down part of the trees, and to plough up the ground between thoſe left remaining: and in the ſpring of the year, in moiſt weather, to ſcrape off the moſs, with an iron inſtrument made a little hollow, the better to ſurround the branches; and to carry it off the place: by cleanſing the trees thus two or three times,

[1] Withering, 1. 361. and Hedwig.
[2] Withering, 1. 362.

together with carefully ſtirring the ground, the moſs may be entirely deſtroyed: but if part of the trees be not cut down, and the ground well ſtirred, rubbing off the moſs will ſignify little; for the cauſe not being removed, the effect will not ceaſe, but the moſs will in a ſhort time be as troubleſome as ever.

Linnæus's genera have been ſplit into ſeveral others by Hedwig and the other reformers. Hypnum and Bryum were indeed ſo unwieldy that it was very deſirable they ſhould be divided. The genera of Moſſes as they ſtand in Schreber are *Phaſcum*, *Sphagnum*, *Gymnoſtomum*, *Tetraphis*, *Octoblepharis*, *Splachnum*, *Grimmia*, *Encalypta*, *Dicranum*, *Trichoſtomum*, *Didymodon*, *Tortula*, *Weiſſia*, *Poblia*, *Funaria*, *Bryum*, *Timmia*, *Meeſia*, *Bartramia*, *Fontinalis*, *Hypnum*, *Leſkia*, *Neckera*, *Buxbaumia*, *Polytrichum*. See their characters under theſe reſpective genera.

Other Moſſes were placed by Linnæus in his Order of *Algæ*; they are now ſeparated from that, and form a diſtinct Order, under the name of *Hepaticæ*.

In theſe, the *Female* fructifications are incloſed in a veil, which ſplits open at the top, and diſcharges the capſule. The *Capſule* opens lengthwiſe, and is filled with numerous *Seeds*, fixed to an elaſtic cord, formed of one or two ſpiral threads.

Some plants are referred to this ſubdiviſion on account of their agreement in general habit, though the female fructification has no veil, but is placed upon, or immerſed in the ſubſtance of the leaf.

The leaves are moſtly lobed, exhibiting a net-work of veſicles, and though dried, reviving again when moiſtened with water.

Hedwig obſerves that all the female florets have a double calyx, or a calyx and corolla. In ſhape and ſtructure he ſays they greatly reſemble the proper moſſes, but that he never found the ſucculent threads: the piſtil-like ſubſtances are however found, accompanying both the germ and ripened capſule; but not in all the ſpecies.

The Capſule, like thoſe of the true Moſſes, is incloſed in a veil, to which the ſtyle adheres; but this veil is not, as in them, looſened at its attachment and raiſed along with the growing capſule; it tears open in two, three or four places, and has therefore been ſometimes conſidered as a petal.

All theſe Moſſes agree in ripening their fruit, which is raiſed upon an elongated peduncle, and opens by four valves, filled with the ſeeds, attached to elaſtic cords. Theſe ſeeds have proved upon trial to reproduce their reſpective plants[*].

The genera comprehended under this ſubdiviſion of the Moſſes are, *Marchantia*, *Jungermannia*, *Targionia*, *Anthoceros*, *Blaſia*, *Riccia* and *Sphærocarpus*.

MUSHROOM. See *Agaricus*.

To what was ſet down under the article *Agaricus* reſpecting the culture of the Muſhroom, it may be uſeful to add the following practice from Juſtice's Britiſh Gardener's Director.

Make the beds at the end of auguſt, in order to furniſh the table with Muſhrooms all the winter, except in caſe of extreme and intenſe froſts.

Make the beds in the following manner: Dig a trench three feet wide, one foot deep, and what length you pleaſe (from ten to fifteen feet is ſufficient for a moderate family). If your ſoil be wetiſh, let the bed be quite above ground. Take horſe dung (three or four good cart-loads for twenty feet), lay it in a heap to ferment for ten or twelve days, or lay it abroad till little heat remains in it; for great heat deſtroys the ſpawn of Muſhrooms. The dung ſhould be warm and moiſt, not dry and ſuch as has already been exhauſted by fermentation. So ſoon as you perceive the heat to be gone off, fill the trench with the dung, near one foot above the ſurface of the adjacent ground; above that, lay ten inches of freſh, light, rich earth; and obſerve to cover the ſides of the dung-bed with the ſame earth, and as much of the earth gathered from the fields with the Muſhroom ſpawn upon the ſides, as can be; and then take ſome of the ſpawn, and plant the ſmall knobs of it ſix inches aſunder, half an inch deep into the earth: then take another layer of dung, lay it ten inches thick, and above that, another layer of the rich light earth, and the field earth on the ſides eight inches thick; obſerving as you lay the ſtratums of earth and dung, to draw in the ſides narrower, ſo as to make the bed aſcend gradually in form of a ridge, and ſtill drawing it narrower, till you arrive at the top, and in ſuch a manner, as the knobs of ſpawn may not be buried deeper than half an inch, planting the knobs all the way up; by which means you may have four layers of dung, and as many of earth.

When your bed is thus made and planted, lay good wheat-ſtraw, or looſe litter half a foot or more thick; and, as the cold increaſes, cover to twelve inches in thickneſs.

After ten days take off the litter with your hands, to ſee if the Muſhrooms begin to appear: if they come black or brown and long-ſhanked, cut them over, and riddle on a little of the fine earth upon them; and when they appear again, they will come up white, round and fit for uſe: this is called purging of them, their firſt bad appearance being owing to too much heat in the dung.

It will be neceſſary to look them over every day in ſeptember, which is the chief ſeaſon of their growth. If allowed to grow large, they will ſoon become too big for uſe, rot, breed worms, and infect all the young ſpawn near them. To prevent this, gather them once every day; in doing which, pull them gently out, ſo as not to leave their ſtems behind, which would canker and breed worms, and rot the ſpawn. If any of this ſhould come up with the Muſhrooms, take it off gently, and plant it in again without bruiſing it, and it will ſoon root. Make another bed in the ſame manner at the end of ſeptember, and no later.

Some make the Muſhroom-beds entirely of dung, without ſtratums of earth, only covering the ſides of the dung with earth, three or four inches thick. When this method is followed, always put good dry litter or ſtraw four inches thick between the earth laid on the ſides of the beds and the dung, which prevents the earth from caking or cracking into rents, which it is apt to do, from the heat of the dung: and on the top of the ſtraw, which immediately covers the Muſhroom-bed, put ſome warm litter from the ſtable, or from a dung-heap, in the cold ſeaſon; and this will much promote the growth of the Muſhrooms. If the froſt ſhould continue, and the warm litter cool, add ſome freſh warm litter upon the ſtraw-covering.

Such beds, if duly attended to, will laſt ſeveral months, and produce great crops; and as the Muſhrooms for uſe grow, ſo will the ſpawn, which ought to be laid up in a dry warm place until the ſeaſon for uſing it. The ſpawn will keep four months; ſo that if you give up the Muſhroom beds in may, the ſpawn will keep until ſeptember following, among their own earth, and even until october or november in a warm and dry place: auguſt however and ſeptember are the months for making muſhroom-beds.

In very ſevere froſts or great rains, obſerve to increaſe the ſtraw-coverings, and in great ſtorms ſometimes lay boards above the ſtraw, ſo as to reſt gently againſt the ſides of the beds, but not to reſt ſo much on the Muſhrooms as to bruiſe them.

By continuing the forcing of Muſhrooms, they may be continued good until the months of april or may. If when Muſhrooms are ſet down in auguſt, ſeptember or october, or even later, they do not produce immediately, they ſhould not be deſtroyed, but let them remain all winter covered with ſtraw, and in march probably, but moſt certainly in april, may and june, a moſt plentiful crop of Muſhrooms may be expected.

Another method of raiſing Muſhrooms is this—About the end of february lay old rotten dung in a trench nine inches deep, and ſix feet in breadth, fill it up and tread it well down, and above the dung put ſome earth, taken in october preceding from a paſture where Muſhrooms grow in plenty: cover the dung with it five inches thick, tread it as hard as you can, and make the bed level: keep it clear from weeds, and in may the Muſhrooms will begin to appear: if they come up black, take ſome turf of the Muſhroom paſture,

[*] Withering, 1. 363.

pasture, half an inch thick only, and tread it down on the bed; this will purge them, and make them come up of a good colour. Such a bed will continue good for two years.

MUSK and MUSK CRANESBILL. See *Erodium*.

MUSK and MUSK OCHRA. See *Hibiscus*.

MUSSÆNDA. (*The vernacular name of Ceylon.*)

Lin. gen. n. 241. *Reich. n.* 257. *Schreb. n.* 326. *Gærtn. t.* 28. *Juss.* 200.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Contortæ*. *Rubiaceæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* superior, five-parted, unequal: *leaflets* linear-acuminate, permanent.

COR. one-petalled, funnel-form: *tube* long, filiform, hirsute: *border* five-cleft, equal; *segments* ovate.

STAM. *Filaments* five, the length of the corolla, growing to the tube on the inside. *Anthers* linear-bristle-shaped, long, within the tube.

PIST. *Germ* inferior, ovate. *Style* filiform. *Stigmas* two, simple, thickish.

PER. *Berry* oblong, crowned.

SEEDS numerous, in four parcels.

ESSENTIAL CHARACTER.

Cor. funnel-form. *Stigmas* two, thickish. *Berry* oblong, inferior. *Seeds* disposed in four rows.

SPECIES.

1. Mussænda frondosa.

Lin. syst. 218. *Reich.* 1. 489. *mant.* 338. *fl. zeyl. n.* 84. *Gærtn. fruct.* 1. 140. *Lour. cochinch.* 151. *Vahl symb.* 3. 37. *Herm. zeyl.* 36. *Burm. zeyl.* 165. *t.* 76.

Folium principissæ. *Rumph. amb.* 4. 111. *t.* 51.

Belilla. *Rheed. mal.* 2. 27. *t.* 18. *Raii hist.* 1493.—& Mussænda indica. *dendr.* 126.

Panicle with coloured leaves.

2. Mussænda glabra.

Vahl symb. 3. 38.

Branches and leaves of the branches and panicle very smooth.

3. Mussænda chinensis.

Lour. cochinch. 152.

Leaves in bundles, flowers solitary.

DESCRIPTIONS, &c.

1. This is a large woody climbing shrub, without tendrils or thorns, having many long scattered branches. Leaves ovate-lanceolate, quite entire, wrinkled, hairy, subsessile, opposite. Flowers gold-coloured, in large, spreading, terminating cymes, with large, ovate, nerved, very white, petioled bractes. Calyx tubular; segments awl-shaped, hairy, erect. Border of the corolla short; segments acute, tailed. Anthers erect. Style equal to the corolla. Stigmas lanceolate, erect. Berry ovate-oblong two-celled. Seeds roundish [a]. According to Gærtner, the Berry is inferior, ovate-globular or subturbinate, with a prominent whitish ring from the remains of the calyx, and within that, marked at the top with five minute tubercles, and on each side with an obscure longitudinal groove, smooth, black, two-celled: skin thin, becoming leathery when ripe: pulp watery, finally vanishing. Receptacle an ovate fungous lamina bent like an ox-yoke, and by means of another transverse lamina fixed on both sides to the middle of the partition, both together forming the Burgundian cross, as Rumphius calls it, in the middle of the fruit. Seeds very numerous, small, subovate, compressed like a lens, shagreened, pale.

Linneus remarks, that the panicle is dichotomous. One bractle of each pedicel grows into a white elliptic nerved leaf, longer than the panicle.

He gives Belilla of Rheede, and Folium principissæ of Rumphius as synonyms to his Mussænda frondosa. The first of these has oblong berries and black seeds: the second has almost cylindrical berries, excavated on the outside. Gærtner can scarce believe them all three to be one and the same species. He is certain however that his plant is the genuine Mussænda of the Ceyloneſe and of Hermann. Vahl suspects that Folium principissæ of Rumphius rather is the same with his Mussænda glabra. Loureiro remarks, that the figures and descriptions of Burmann and Rumphius agree in many things, but not in all, with his plant, and that they do not entirely agree with each other, but that the differences are rather those of varieties than species. In the Cochinchinese plant he did not observe any smell, but great beauty in the singular whiteness of the bractes mixed with the golden flowers; and it is remarkable that these bractes do not adhere to the peduncles, but to the fruit.

Native of the East Indies and Cochinchina, Otaheite and Namoka islands in the South Seas.

2. Branches round, purplish dotted with white, smooth. Leaves petioled, opposite, three inches long, attenuated, ovate, quite entire, smooth on both sides except on the rib underneath, obliquely and alternately nerved, obscurely veined. Stipules obliterated. Panicle terminating. Partial peduncles three or four times dichotomous, opposite, with a pedicelled flower at each of the divisions. Bractes under the ramifications, trifid as in M. frondosa, deciduous, but five times smaller; segments lanceolate, smooth. Bractes under the last pedicels lanceolate, quite entire, sometimes cut with a toothlet at top, scarcely villose. Flowers pedicelled; pedicels angular, the length of the germ. Segments of the calyx lanceolate, slightly hairy with minute hairs. Tube of the corolla pubescent, an inch long, thicker in the middle: segments of the border lanceolate, in the dry specimen orange above. Fruit smooth, obovate, umbilicate, obscurely marked with five lines. Leaves of the panicle three times as large and firmer than in M. frondosa, ovate, obtuse, marked with four larger nerves, vanishing towards the tip, smooth on both sides, yellowish underneath in the dry specimen, greenish above, decurrent a little at the base. It appears to be quite different from the preceding, in having the leaves smooth on both sides, and not as in that hoary underneath, with the bractes and calycine segments smaller; in the size, consistence and colour of the leaf of the panicle, and in its orange-coloured flowers.

The leaves of the panicle in M. frondosa are more tender, acuminate, acute not blunt, the segments of the calyx are longer, and the fruit villose, not smooth as in M. glabra, which is a native of the East Indies as well as the other [b].

3. This is a small tree, with diffused unarmed branches. Leaves lanceolate, quite entire, smooth, heaped. Flower terminating, with a berried, five-parted calyx, having lanceolate segments. Berry ovate, crowned, pale, four-celled; containing many, almost kidney-form, bony seeds.—Native of China, near Canton [c].

MUSSÆNDA FORMOSA & SPINOSA. See *Gardenia*.

MUSTARD. See *Sinapis*.

———, Hedge. See *Erysimum* and *Sisymbrium*.

———, Mithridate. See *Thlaspi*.

———, Tower. See *Turritis*.

———, Treacle. See *Thlaspi*.

MUTELLINA. See *Phellandrium*.

MUTISIA. (*So named in memory of Joseph Celestin Mutis, an American Botanist, who designed a History of American Plants, especially of Palms, and communicated many new plants to the younger Linneus and others.*)

Lin. suppl. 57. *Gen. Schreb. n.* 1293. *Juss.* 178.

Class. 19. 2. Syngenesia Polygamia Superflua.

Nat. order of *Dificiles*. *Corymbiferæ*, Juss.

GENERIC CHARACTER.

CAL. *Common* oblong, cylindric, imbricate; *scales* lanceolate; the *outer* ones longer.

COR. *Compound* radiate: *Corollets* of the disk three times more than of the ray, hermaphrodite: of the ray eight, female.

Proper of the Hermaphrodites tubular, trifid: the outer segment lanceolate, the inner segments linear.

Female oval-oblong, entire, with a linear claw.

[a] Loureiro.

[b] Vahl.

[c] Loureiro.

STAM. in the Hermaphrodites, *Filaments* five, linear. *Anther* cylindric, longer than the floret, with decurrent briſtles at the baſe.

In the *Females* none; but only the rudiments of two filaments.

PIST. *Germ* ſhort. *Style* filiform. *Stigma* in the Hermaphrodites ſimple: in the Females two, briſtle-ſhaped.

PER. none.

SEEDS ſomewhat oblong. *Down* feathered.

REC. naked.

ESSENTIAL CHARACTER.

Cal. cylindric, imbricate. *Corollets* of the ray oval-oblong; of the diſk trifid. *Down* feathered. *Recept.* naked.

SPECIES.

1. Mutiſia Clematis.
Linn. ſuppl. 373. *ſyſt.* 769. *Gærtn. fruct.* 2. 454.

DESCRIPTION, *&c.*

This is a climbing plant, like Clematis, when young tomentoſe all over. Stem ſhrubby, ſtriated, long, branched, twining. Leaves alternate, remote, pinnate; with the rachis ending in a tendril. Leaflets oblong-ovate, ſubſeſſile, alternate or oppoſite, ſeven, by age becoming ſmooth above, but very tomentoſe underneath. Stipules in pairs, ovate, many times ſmaller than the leaflets. Peduncles axillary, ſolitary, one-flowered, tomentoſe, with one or two ſmall awl-ſhaped bractes. Flowers the ſize and form of a large Pink. Calyx tomentoſe. Corolla purple, the length of the ray of the calyx itſelf. It was found in New Granada by Mutis*.

Juſſieu remarks, that it has the calyx of Scorzonera; and, independent of the flower, the habit of Vicia. Joſeph de Juſſieu had given it the Peruvian name *Cunirima*; and it is allied on one ſide to *Cheiriraga*, and on the other to *Barnadeſia*.

MYAOIDES. See *Draba*.

MYAORO SIMILIS. See *Eryſimum* and *Myagrum*.]

MYAGRUM, (*of Pliny*, Μυαγρος *of Dioſcorides: from* μυια, *a fly, and* αγρευω, *to catch.*)
Lin. gen. n. 796. *Reich. n.* 860. *Schreb. n.* 1069. *Gærtn. t.* 141. *Tournef. t.* 99. *Juſſ.* 241.

Claſſ. 15. 1. Tetradynamia Siliculoſa.

Nat. order of *Siliquoſæ*, or *Cruciformes*. *Cruciferæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved; *leaflets* ovate-oblong, concave, gaping, coloured, deciduous.

COR. four-petalled, cruciform. *Petals* flat, roundiſh, blunt, with narrow claws.

STAM. *Filaments* ſix, the length of the calyx; of which four oppoſite are a little longer. *Anthers* ſimple.

PIST. *Germ* ovate. *Style* filiform, the length of the calyx. *Stigma* blunt.

PER. *Silicle* obcordate, compreſſed a little, entire, rigid, terminated at top by the rigid conic ſtyle, two-valved; *ſome of the cells often empty.*

SEEDS roundiſh.

OBS. Myagrum *of Tournefort has a one-celled pericarp, two of the cells being empty at top, and only one at the baſe with a ſeed in it.*

Alyſſum Sp. *of Tourn. has a two-celled pericarp, and few ſeeds.*

ESSENTIAL CHARACTER.

Silicle terminated by a conical ſtyle, with a cell commonly one-ſeeded.

SPECIES.

1. Myagrum perenne. *Perennial Gold of Pleaſure.*
Lin. ſpec. 893. *fl. ſuec.* 583. *Reich.* 3. 207. *hort. upſ.* 182. *Hall. helv. n.* 525. *Scop. carn. n.* 795. *Jacqu. auſtr.* 5. *t.* 414. *Ger. prov.* 342. *hort. cliff.* 340. *Gort. gelr.* 404. (Crambe).

M. biarticulatum. *Crantz. faſc.* 1. *ed.* 2. *p.* 6.

Raphiſtrum perenne. *Allion. pedem. n.* 941.

R. diffuſum. *Crantz. cruciſ.* 105. *n.* 1.

R. monoſpermum *Bauh. pin.* 95. *prodr.* 37. *Mapp. alſat.* 1. 266. *Raii hiſt.* 840.

Silicles two-jointed one-ſeeded, leaves entirely ſinuate toothleted.

[2. Myagrum orientale. *Oriental Gold of Pleaſure.*
Lin. ſpec. 893. *ſyſt.* 583. *Reich.* 3. 207. *hort. upſ.* 182.

Raphiſtrum orientale, folio raphani, capſulis rugoſis. *Boerh. lugdb.* 2. *p.* 2.

Silicles grooved even, leaves oblong tooth ſinuate.]

3. Myagrum rugoſum. *Wrinkled Gold of Pleaſure.*
Lin. ſpec. 893. *Reich.* 3. 207. *hort. upſ.* 183.

Raphiſtrum rugoſum. *Allion. pedem. n.* 940. *t.* 78.

Silicles grooved hairy wrinkled, leaves oblong blunt toothed.

[4. Myagrum hiſpanicum. *Spaniſh Gold of Pleaſure.*
Lin. ſpec. 893. *Reich.* 3. 207.

Sinapi hiſpan. minus, raphani folio. *Tournef. inſt.* 227?

Silicles even ſomewhat ſwelling, leaves lyrate.

5. Myagrum auſtriacum. *Auſtrian Gold of Pleaſure.*
Lin. ſyſt. 584. *Jacqu. auſtr.* 2. *t.* 111.

Silicles roundiſh ſmooth, leaves oblong embracing, root creeping.]

6. Myagrum perfoliatum. *Perfoliate Gold of Pleaſure.*
Lin. ſpec. 893. *ſyſt.* 584. *Reich.* 3. 208. *hort. upſ.* 182. *cliff.* 328. *Gærtn. fruct.* 2. 288. *Hall. helv. n* 524. *Villars dauph.* 3. 277. *Kniph. cent.*, 10. *n.* 64.

M. monoſpermum latifolium. *Bauh. pin.* 109. *prodr.* 52. *t.* 51. *Mor. hiſt.* 2. 267. *ſ.* 3. *t.* 21. *f.* penult.

M. lorenſe monoſpermum. *Beſl. eyſt. aſt.* 10. *t.* 8. *f.* 1.

M. monoſpermon. *Bauh. hiſt. Raii hiſt.* 839.

Silicles obcordate ſubſeſſile, leaves embracing.

7. Myagrum ſativum. *Cultivated Gold of Pleaſure.*
Lin. ſpec. 894. *Reich.* 3. 208. *hort. cliff.* 328. *fl. ſuec. n.* 564. *Hudſ. angl.* 277. *Lightf. ſcot.* 316. *Neck. gallob.* 273. *Pollich pal. n.* 602. *Kroch. ſilef. n.* 1038. *Villars dauph.* 3. 278. *Fl. dan. t.* 1038. *Knipb. cent.* 11. *n.* 38. *Cavan. hiſp.* 47. *n.* 72. *t.* 66.

M. ſylveſtre. *Bauh. pin.* 109. *Dill. giſſ* 134. *Mor. hiſt. ſ.* 3. *t.* 21. *f.* 2.—*t.* Pſeudo-myagrum. *Park. theat.* 868. 2.

M. *Ger.* 213. 2. *emac.* 273. 3. *Raii hiſt.* 820. *ſyn.* 302. *Petiv brit. t.* 48. *f.* 11.

Alyſſum ſativum. *Scop. carn. n.* 794. *Hall. helv. n.* 489.—ſegetum, foli auriculatis acutis. *Tourn. inſt.* 217.

Camelina ſativa. *Crantz. auſtr.* 18.

C. ſ. Myagrum. *Dod. pempt.* 532. *Lob. obſ.* 111. 3. *ic.* 1. 224. 2.

Monchia ſativa. *Wither. arr. ed.* 3. 562.

β. M. ſativum. *Bauh. pin.* 109. *Mor. ſ.* 3. *t.* 21. *f.* 1. *Pollich pal.* 6.

Camelina ſ. Myagrion. *Dod. pempt.* 532.

γ. M. fœtidum. *Bauh. pin.* 109. *Lind. alſat.* 49. *t.* 1. *Raii hiſt.* 820. 3.

Alyſſum. 289. γ. *Hall. helv. Pollich.* γ.

Silicles obovate pedunled many-ſeeded.

[8. Myagrum paniculatum. *Paniled Gold of Pleaſure.*
Lin. ſpec. 894. *ſyſt.* 584. *Reich.* 3. 209. *hort. cliff.* 328. *fl. ſuec. n.* 565. *Pollich pal. n.* 603. *Scop. carn. n.* 798. *Fl. dan. t.* 204. *Gmel. ſib.* 3. 249. *Hall. helv. n.* 522. (Raphiſtrum). *Kroch. ſilef. n.* 1010. *Villars dauph.* 3. 278.

Naſturtium paniculatum. *Crantz. auſtr.* 15.

Crambe paniculata. *Allion. pedem. n.* 935.

M. monoſpermum hirſutum, ſiliquis rotundis. *Loeſ. pruſſ.* 174. *t.* 56.

Myagro ſimilis ſiliqua rotunda. *Bauh. pin.* 109. *prodr. t.* 52. *Mor. hiſt. ſ.* 3. *t.* 21. *f.* ult.

M. affinis capitulis rotundis. *Bauh. hiſt. Raii hiſt.* 839.

Silicles lens-ſhaped orbiculate dotted-wrinkled.

9. Myagrum ſaxatile. *Rock Gold of Pleaſure.*
Lin. ſpec. 894. *ſyſt.* 584. *Reich.* 3. 209. *Jacqu. vind.* 257. *auſtr. t.* 128. *Kroch. ſilef. n.* 1011. *Villars dauph.* 3. 278.

Alyſſum alpinum. *Scop. carn. n.* 793. *Hall. helv. n.* 490. *Segu. veron.* 1. 378.

Naſturtium ſaxatile. *Crantz. auſtr.* 14. *t.* 1. *f.* 2.

Thlaſpi petræum myagroides. *Pona bald.* 336. *t.* 338.

T. ϛ ſaxatile. *Cam. epit.* 338.

T. ſaxatile rotundifolium. *Bauh. pin.* 106. *prodr.* 48.

T. alpinum minus, capitulo rotundo. *Baub. pin.* 107. *prodr.* 48. *n.* 6. *Raii exter.* 297.

T. alterum

* Linn. ſuppl. * Gen. 178.

T. alterum majus. *Raub. pin.* 106. *n.* 6.—capitulis rotundis. *prodr. t.* 49.

Silicles lens-shaped obovate smooth, leaves petioled oblong serrate ragged, stem panicled.

10. Myagrum ægyptium. *Egyptian Gold of Pleasure.*

Lin. spec. 894. *syst.* 584. *Reich.* 3. 210.

Silicles angular, leaves three-parted.

DESCRIPTIONS, *&c.*

Under this genus are assembled by Linneus—1. Myagrum T. with a turbinate compressed three-celled silicle, not opening, the two upper cells empty, the lower one-seeded. 2. Camelina Dod. with a pear-shaped, two-celled, two-valved, many-seeded silicle. Moenchia With. Alyssoides T. and Veficaria T. now added to Alyssum, are perhaps congeners with this. 3. Rapistrum T. with a silicle either oblong and two-jointed, or spherical acuminate two-celled, one joint or cell empty: the other one-seeded scarcely opening. Lamarck adds to these Anastatica syriaca, and most of the species of Bunias, with a spherical or four-cornered fruit, and some Sisymbriums with a short pod (Radicula of Haller) two-celled and many-seeded. He refers Myagrum saxatile to Cochlearia, on account of its ovate, two-celled, many-seeded fruit. In such a confusion of species it is scarcely possible to define the genus, and it might perhaps be better to divide them, and restore some of the old genera[a]. These reformations may be made without end in orders so natural as this, wherein all the species may be considered as forming one great genus, in which the subordinate divisions are generally arbitrary.]

1. Mr. Miller, though he gives this plant Linneus's epithet of *perenne*, describes it as an annual plant; the lower leaves large jagged and hairy; the stalks branching out from the bottom; the leaves about four inches long, and two broad, hairy and unequally jagged; the stalks terminated by very long loose spikes of yellow flowers, succeeded by short pods with two joints, each including one roundish seed.

[Linneus remarks, that the lower joint of the silicle is strict and abortive; the upper globular, striated, one-seeded.

Scopoli describes the stem as grooved, branched, firm and somewhat villose; the leaves pinnatifid, the pinnas toothed here and there, the terminating one very large and roundish; the upper leaves lanceolate, toothed: the flowers in long spikes; petals yellow, twice as long as the calyx: the fruiting-peduncules more remote, pressed close to the stem: the first joint of the silicle more slender and less villose; the upper one ovate, and striated longitudinally: there is an evident partition, but it is loose at the sides, or at least does not cohere every where with the inner surface of the valves.

M. perenne of Miller, Scopoli, Gerard, &c. is probably different from that of Linneus. Miller says it is annual, and Gerard that it is biennial. Villars mentions a perennial sort which he has seen cultivated, with an enormous root, of a lower stature, and a smaller smooth fruit.

Native of Germany. Cultivated in 1739 by Mr. Miller[b], if this be his plant.

2. This is an annual plant. The silicles have two joints, with three ridges, and a style the length of the silicle. Native of the Levant[c].]

3. This also is an annual plant, the lower leaves of which are five or six inches long; they are hairy and succulent, their base is eared, and they end in acute points. The stalks are a foot and half high, brittle and hairy, branching out toward the top, and terminated by short loose spikes of small pale flowers; which are succeeded by small rough roundish capsules, compressed at the top.

[Villars describes his Myagrum rugosum, which he makes synonymous with M. perenne of Scopoli and Miller, thus: Stem a foot high, a little villose, very much branched at the base. Leaves a little rough, sinuated, lyrate, or deeply cut like those of *Sinapis arvensis*: the upper ones are narrower and almost entire. Calyx green, shorter by half than the petals; which are pale yellow, wide, rather large: there are two green pointed glands between the two longer stamens and the calyx. Silicle short, seeming to be two-celled, but the lower part is smaller, square, one-celled, often barren: the upper part is channelled and villose, terminated by the style, which is longer than the silicle. Seeds a little lengthened out. It is biennial. Native of the South of Europe.

Allione makes his Rapistrum rugosum synonymous with Myagrum rugosum of Linneus and Villars, and describes it thus. Stems round green hispid, from half a yard to three quarters of a yard in height, branching from the very bottom, the branches subdivided, each horizontal or reclining, flowering to a great length. Root-leaves on a semicylindric petiole, pinnatifid, pinnas triangular, gradually larger, the extreme one largest, the first and second pinnas scarcely toothed; they are rough with stiffish hairs, succulent and of an acid flavour. Leaves on the stem only one at the base of each branch; the lower ones have one or two pairs of pinnas, the next one only, the rest are almost entire and linear. Flowers in very long racemes. Calyx spreading, of a very pale yellowish green colour, the leaflets concave and linear. Petals ovate, entire or slightly emarginate, sulphur-coloured. Stamens a little higher than the stigma. Filaments tinged with purple. Anthers grooved, linear. Germ a little hirsute. Style longer than the calyx. Stigma headed, bifid. Silicle ovate, not opening, hirsute, with wrinkled interrupted ribs on it, one-celled. Seed one ovate a little compressed shining; and sometimes there is another little joint.

4. Stem rugged with scattered reflex hairs. Racemes rod-like, long. Leaves lyrate, toothed, petioled, oblong. Silicles cylindric, even, not grooved, wrinkled or striated, consisting of an oblong, pedicelled, cylindric, barren body, upon which an ovate silicle is placed with a narrower neck; the lower joint is two-celled and empty, the upper has one seed in it. Corolla yellow. It is a biennial plant, native of Spain[a].

5. The whole plant is smooth: the stems subangular, herbaceous, erect, branchy, leafy, and about a foot or a cubit high. Leaves oblong, obtuse or a little acute, the radical ones attenuated at the base and notched: those on the stem sessile, embracing the stem with their produced bases, and of a sagittated form, with serrated edges. Flowers yellow, on corymbose terminal racemes stretching gradually to two or three inches. Germ globose and smooth. Style thick and short, ending in a headed obtuse stigma. Silicle globose, small, crowned by the obtuse style, obscurely footstalked, smooth, equal, two-celled, with about five subovate seeds on each side, fixed to the dissepiment. This species grows in clayey ground, and flowers in June. Native of Austria[a].]

6. This has a smooth branching stalk upwards of two feet high. The lower leaves are five or six inches long, smooth, succulent, and a little indented; the upper leaves almost embrace the stalks with their base. The flowers are produced in long loose spikes, are yellow and sessile.

[Villars describes the plant as about a foot in height, with straight stems and very spreading branches; the leaves smooth, with a tinge of ash-colour on them; the lower ones sinuated or waved, the upper ones entire. The whole plant is smooth. The flowers small. The silicle obcordate, three-celled; the two upper cells, which are lateral, are empty, and the lower one, which answers to the axis, is filled with a single seed.

Mr. Miller says, the pod is heart-shaped and compressed, divided by a longitudinal partition into two cells, each containing one roundish seed. [The accurate Gærtner describes it as spongy-tuberous, oblong, terminated by the tubulate style; the upper part twin-globular, two-celled, barren; the lower cylindric or obconic, one-celled, fertile; both parts are valvulets and never open. Seed ovate-oblong, with a streak along the middle on each side, rust-coloured, fattened by a short umbilical chord descending from the top of

[a] Jacquin. [b] Hort. kew. [c] Linn. [a] Linn.

the lower cell.—It differs from *Crambe* in having flat cotyledons or seed-lobes, not conceave-conduplicate, as in that genus.

It is an annual plant, native of the South of France and Switzerland. Mr. Miller adds Italy.—Cultivated in 1658, in the botanic garden at Oxford. It flowers in june and july[1].]

7. This is an annual plant, with an upright ſtalk about a foot and half high, ſending out two or four ſide branches towards the top, which grow erect; they are ſmooth and have a fungous pith: the lower leaves are from three to four inches long, of a pale or yellowiſh green, and eared at the baſe; thoſe upon the ſtalks diminiſh in ſize all the way up, are entire and almoſt embrace the ſtalk with their baſe. The flowers grow in looſe ſpikes at the end of the branches, ſtanding upon ſhortſtalks an inch long. Petals ſmall, yellowiſh. Silicles oval, bordered, crowned with the ſtyle, two-celled; the cells filled with red ſeeds.

[Lower part of the ſtem round, upper ſomewhat angular, ſlightly hairy. Leaves cloathing the whole ſtem, alternate, lanceolate, arrow-ſhaped at the baſe, half-embracing, ſlightly toothed, hairy. Flowers yellow. Silicles on long fruitſtalks, terminated by a long ſtyle: the partition extends beyond, and forms a ſtrong ridge round the ſilicle[2].—Linnæus remarks, that the capſule or ſilicle bellies out on each ſide, but is uſually, in the wild plant, marked with a cavity preſſed inwards, which cavity diſappears in the cultivated plant[3].

Villars obſerves, that the ſtem has only one or two branches, and is ſometimes quite ſimple. Pollich, that the flowers are almoſt three lines in diameter; the petals blunt but quite entire, pale yellow, with claws two lines and a half long; two glands or nectaries at the ſhorter filaments; germ ſmooth, ſtyle yellowiſh green, ſtigma yellowiſh: ſilicle wider at top, terminated by the ſtyle of the ſame length with itſelf, and having five, ſix or ſeven ſeeds in each cell.

According to Cavanilles, the whole plant is very villoſe; the leaves very ſoft; the root-leaves oblong, blunt, ſubſpatulate; the ſtem-leaves ſeſſile, alternate, half-embracing, having blunt ears; the upper ones very ſharp and much ciliated. Flowers in terminating racemes; each flower on a ſmooth pedunele, three times as long as the fruit.

It is cultivated in Germany for the ſake of the expreſſed oil of the ſeeds, which is there uſed for medicinal, culinary and œconomical purpoſes. The ſeeds are a favourite food with geeſe, horſes, kine, ſheep and goats eat it[4].

Native of Germany and the ſouthern countries of Europe, in corn fields, and eſpecially flax, with the ſeed of which it has been introduced into the more northern parts, as Sweden, Denmark and Britain. With us it has been found near Bridport and Lime in Dorſetſhire; Heydon in Norfolk.] Mr. Miller found it growing in the corn in Eaſthamſted Park, the ſeat of William Trumbull, Eſq.

Following Tournefort, he makes two ſpecies of this, under the names of M. ſativum (n. 1.) and Alyſſum (n. 2.). The latter, he ſays, differs from the former in having a taller ſtalk; the leaves are much longer, narrower, and regularly indented on their edges, ending in obtuſe points. The flowers are larger, but of the ſame form and colour. The capſules are much larger, and ſhaped like a heart.

[β. Has the leaves ſmooth and more green.

γ. Is a remarkable variety, every where ſmooth; the lower leaves are laciniated and pinnatifid; the reſt are toothletted. The ſmell is not very fetid. Silicle many-ſeeded[5].

8. Root ſmall, annual, fuſiform, white within and without, four inches long. Stem erect, two feet high and more, ſomewhat angular and rugged, having one or two alternate branches at the upper part; both terminated by a looſe longiſh raceme, with the flowers on round peduncles, three or four lines in length. Leaves alternate, ſagittate or rather eared, embracing, hirſute on both ſides, the lower four inches long, and an inch wide. Corolla ſmall, yellow; petals wider at top and blunt, a little more than a line in length. Silicle very ſmall, orbicular, rugged, obſcurely wrinkled, crowned with the ſtyle, containing one ſeed[6].

Native of Europe. Introduced in 1787, by Mr. Zier. It flowers in july and auguſt[7].

9. Root perennial, long, brown. Root-leaves many, ſpread out in a ring, oblanceolate, (turbiculate, or oblong) gradually attenuated into the petiole, blunt, unequally obſcurely and thinly toothed, thickiſh, ſlightly rough, leſs than an inch in length, deep green. Stem ſlender, ſmooth, half a foot or a ſpan in height, upright, round, hard, ſimple, having a few ſcattered ſublinear leaves on it, broadiſh at the tip; and terminated by a corymbed many-flowered raceme, either ſimple, or compounded of a few axillary liliform racemes. Calyx yellowiſh white. Petals white, ſpreading very much, twice as long as the calyx, roundiſh. Style ſhort. Silicles almoſt globular[8]. The ſtamens are differently deſcribed: according to Jacquin, the longer filaments are contiguous and forked at top, the inner diviſion being truncated, the outer arched outwards; the ſhorter ſtamens have a gland on each ſide. In Krocker's ſpecimen the filaments were ſimple. Villars remarks, that the lateral filaments are elbowed outwards, and as it were broken at a right angle, without being forked.

There ſeem to be ſeveral varieties of this ſpecies. Linnæus mentions three plants which were ſent him, one by Allione, and two by Seguier, on which he does not poſitively determine whether they are diſtinct ſpecies, or only varieties of this.

The firſt from Allione has the root-leaves ſpatulate, rugged, bluntiſh, quite entire; the ſtem-leaves tongue-ſhaped and ſmoothiſh; the ſtem ſimple.

The ſecond from Seguier has the root-leaves as in the firſt, and the ſtem-leaves tongue-ſhaped, but ſagittate at the baſe; the ſtem has a few racemes.

The third, alſo from Seguier, has the root-leaves lanceolate, ſomewhat toothed, rugged; the ſtem-leaves lanceolate, ſomewhat toothed, ſubpetioled; the ſtem with a few racemes.

Villars mentions two varieties; one drawn by Plumier at the Grande Chartreuſe; Alyſſon alpinum of Scopoli, n. 793. with the lower leaves roundiſh and hirſute; they are more numerous, and it has ſeveral on the ſtems: another, with the root-leaves ſeſſile, lanceolate, toothed, thick, gray from the quantity of ſimple hairs that cover it, and having ſome reſemblance to Draba alpina of Linnæus.

Native of the mountains of France, Italy, Auſtria and Switzerland. Introduced in 1775, by Drs. Pitcairn and Fothergill. It flowers in june and july[9].

10. Stem divaricated, with rod-like racemes. Leaves petioled, three-parted or five-parted, toothed. Capſules or ſilicles have two four-cornered joints. Flowers yellow. Style very ſhort. It has the appearance of Bunias Cakile.—Found in Egypt by Haſſelquiſt[10].]

PROPAGATION AND CULTURE.

If the ſeeds of theſe plants are permitted to ſcatter in the autumn, the plants will riſe without any care, and only require to be thinned and kept clean. Theſe autumnal plants will always ripen their ſeeds, whereas thoſe which are ſown in the ſpring ſometimes fail.

[MYAGRUM. See *Anaſtatica*, *Crambe*, *Eryſimum*, *Sapenaria*.

MYGINDA. (*So named by Jacquin, in honour of the moſt noble Francis a Mygind, Aulic Counſellor, well ſkilled in Botany, and protector of the Botanic Garden at Vienna.*)

Lin. gen. n. 178. *Reich. n.* 190. *Schreb. n.* 238. *Jacqu. amer.* 24. *Juſſ.* 378.

Claſs. 4. 3. Tetrandria Trigynia.

Nat. order of *Rhamni*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-parted, very ſmall, permanent.

COR. *Petals* four, roundiſh, flat, ſpreading very much.

[1] Hort. kew. [2] Woodv. Mſ. [3] Fl. ſuec. [4] Linn. ſuec. and Wilh. [5] Pollich. [6] Krocker and Pollich. [7] Hort. kew. [8] Jacquin. [9] Hort. kew. [10] Linn.

STAM. *Filaments* four, awl-shaped, erect, shorter than the corolla. *Anthers* roundish.
PIST. *Germ* roundish. *Styles* four, erect, short. *Stigmas* acute.
PER. *Drupe* globular.
SEED. *Nut* ovate, acute.
OBS. *Style undivided in* M. Rhacoma: *none in* M. latifolia.

ESSENTIAL CHARACTER.

Cal. four-parted. *Pet.* four. *Drupe* globular.

SPECIES.

1. Myginda uragoga.
Lin. spec. 1661. *fyst.* 170. *Reich.* 1. 361. *Jacqu. amer.* 24. *t.* 16. *pict.* 18. *t.* 22. *Swartz prodr.* 39.
Leaves subcordate acuminate subserrate pubescent.
2. Myginda Rhacoma.
Swartz prodr. 39. *descr.* 340.
Rhacoma Crossoperalum. *Lin. spec.* 169. *fyst.* 157. *Reich.* 1. 326. *amen.* 5. 393. *Swartz obs.* 48.
Crossopetalum. *Brown. jam.* 145. *t.* 17. *f.* 1.
Leaves lanceolate-ovate obsolete crenate, flowers monogynous, style four-cleft.
3. Myginda latifolia.
Swartz prodr. 39. *descr.* 342. *Vahl symb.* 2. 32.
Leaves elliptic crenulate subcoriaceous, stigmas two to four sessile.

DESCRIPTION, *&c.*

1. This is an upright shrub, divided into few branches, on sandy shores three feet high, in woods eight feet. Root thick, knobbed, irregular; the bark brown without, orange within: the wood solid, whitish, very bitter. Leaves ovate or lanceolate, acute, very finely serrate, on very short red petioles, opposite but sometimes alternate. Peduncles filiform, axillary, opposite, bifid; each division trifid and three-flowered; the middle flower opening long before the side ones. Flowers small, of a dark shining red. Fruit red, soft, the size of peas. The Spaniards call it *Yerva de maravedi*.

At Carthagena they use a decoction or infusion of the root as a powerful diuretic: the leaves have the same quality in a much smaller degree. It is abundant about Carthagena in New Spain, and in the island of St. Martin, in places not far from the sea[t].

2. This is an upright branching shrub, from two to three feet in height, with an ash-coloured bark. Branches subdivided, even, strict. Leaves small, half an inch in length, opposite, stiffish, scarcely nerved, smooth, somewhat shining, on very short petioles. Flowers in small racemes, very minute, red. Racemelets or peduncles two or three-flowered, axillary, shorter than the leaves. Calyx four-cleft, very shortly tubular, coloured red at bottom. Corolla deeply four-parted subrotate, whitish red; segments ovate, minute, fringed at the edge. Filaments from the base of the corolla between the segments of it, bent in above the tube. Anthers simple, very minute. Germ ovate. Style awl-shaped, the length of the tube of the corolla. Stigma four-cleft. Drupe roundish, the size of a small red currant, scarlet, shining, containing a spherical one-seeded nut.

Native of Jamaica, on the western sandy coasts; flowering in summer. In habit it resembles the preceding, but has smaller, ovate leaves, and an undivided style.

3. This is a branching shrub, three or four feet in height. Branches scattered, four-cornered, smooth. Leaves opposite, oblong, blunt, remotely notched, veined, very smooth, rigid, on short petioles. Peduncles shorter than the leaves, axillary, few-flowered: pedicels one-flowered. Flowers very small, whitish. Corolla with a very short tube: border spreading, four-parted; parts oblong, blunt, flat, reflex, entire. Filaments in the divisions of the corolla, the length of the border. Anthers roundish. Germ globular. Style none. Stigmas sessile, globular. Drupe globular, containing an oblong, bony, wrinkled nut[u].

The branches are round at bottom and ash-coloured; the younger ones green, opposite, four-cornered. Leaves sessile, opposite and alternate, an inch long, often roundish, with simple veins, smooth on both sides. Peduncles solitary, filiform, trifid: pedicels somewhat branched. Fruit obovate, smooth, nearly the size of Pepper, hanging down.

Native of the West Indies.

MYOPORUM. (*Myoporos ευρυς, Pori obstructi, obstructed pores. The plant appearing as if scattered over with points or pores filled up with a pellucid substance.*)
Soland. Forst. prodr. 44. *Lin. gen. Schreb. n.* 1053.
Class. 14. 2. Didynamia Angiospermia.
Nat. order of *Perfonatæ*.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted: *segments* ovate, acute, erect, permanent.
COR. one-petalled, bell-shaped: *border* spreading, almost equal, five-parted.
STAM. *Filaments* four, two shorter. *Anthers*
PIST. *Germ* oblong, compressed. *Style*
PER. *Berry* one-celled.
SEEDS one or two, two-celled.

ESSENTIAL CHARACTER.

Cal. five-parted. *Cor.* bell-shaped, with a spreading almost equal five-parted border. *Berry* one or two-seeded. *Seeds* two-celled.

SPECIES.

1. Myoporum laetum.
Forst. prodr. n. 238.
Leaves oblong, subserrate at the tip, even, smooth, shining, corollas hirsute.
2. Myoporum pubescens.
Forst. prodr. n. 239.
Leaves oblong-elliptic serrate pubescent.
3. Myoporum crassifolium.
Forst. prodr. n. 240.
Leaves oblong subserrate fleshy.
4. Myoporum tenuifolium.
Forst. prodr. n. 241.
Leaves lanceolate acuminate quite entire, corollas smooth and even.

These plants are natives of the islands of the South Sea. The first and second of New Zealand; the third of Botany island; and the fourth of New Caledonia.)

MYOSOTIS, (*of Pliny, Mous ureas of Dioscorides. Mouse-Ear.*)
Lin. gen. n. 180. *Reich. n.* 192. *Schreb. n.* 240. *Gærtn. t.* 68. *Dill. gen.* 3. *Juss.* 131.
Class. 5. 1. Pentandria Monogynia.
Nat. order of *Asperifoliæ*. *Borragineæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* half-five-cleft, oblong, erect, acute, permanent.
COR. one-petalled, salver-shaped: *tube* cylindric, short: *border* half-five-cleft, flat; *segments* emarginate, blunt: *opening* closed with five convex, prominent, converging *scalelets*.
STAM. *Filaments* five in the neck of the tube, very short. *Anthers* very small, covered.
PIST. *Germs* four. *Style* filiform, the length of the tube of the corolla. *Stigma* blunt.
PER. none. *Calyx* larger, erect, cherishing the seeds in its bottom.
SEEDS four, ovate, acuminate, smooth.
OBS. *Some species have seeds with even surfaces, others quite hooked prickles.*

ESSENTIAL CHARACTER.

Cor. salver-shaped, five-cleft, emarginate: the opening closed with arches.

SPECIES.

[1. Myosotis scorpioides. *Mouse ear. Scorpion-grass.*
Lin. spec. 196. *fyst.* 184. *Reich.* 1. 287. *vir. cliff.* 149. *fl. fuec.* 1. 157. *Hudf. angl.* 78. *Curt. lond.* 3. 13. 165. *Lightf. fuec.* 132. *Fl. dan.* 1. 583. *Pollich pal. n.* 181. *Neck. gallob.* 97. *Sieg. cern. n.* 185. *Leers herborn. n.* 138. *Gmel. fib.* 4. 73. *Kniph. fil. n.* 269. *Villars dauph.* 2. 458. *Kniph. cent.* 11. *n.* 80.
a. M. foliis hirsutis. *Lin. hort. cliff.* 45. *Hall. helv.* 2. 590. (Scorpiurus).

[u] Vahl.

M. arvensis.

M. arvenſis. *Lin. ſpec.* 188. *Reich.* 1. 383. *Huds. angl.* 78. *Wither. arr. ed.* 3. 205. *Krock. ſilef.* 276. *Allion. pedem. n.* 190.

M. ſcorpioides. *Reth. cant. n.* 145.—hirſuta. *Ger. emac.* 337. 4. *Park. theat.* 691. 7. *Raii ſyn.* 229. *hiſt.* 504.

M. hirſuta arvenſis major. *Dill. giſſ.* 55. *Lin. lapp.* 74.

Echium ſcorpioides arvenſe. *Bauh. pin.* 254.

Auricula muris cærulea. *Tabern.* 197.

Scorpioides ſoliſequium flore minore. *Bauh. hiſt.* 3. 589. 2.

Sc. tertium. *Dod. pempt.* 72.

Scorpiurus annuus arvenſis hirſutus cæruleus. *Mer. hiſt. f.* 11. *t.* 31. *f.* 1.

2. M. ſcorp. latifolia hirſuta. *Merr. pin. Raii ſyn.* 229. *t.* 9. *f.* 2.

3. M. ſcorp. hirta minor. *Merr. pin. Raii ſyn.* 229.

M. ſcorp. minor, floſculis luteis. *Park. theat.* 692.

Scorpiurus arv. hirſ. floſc. minoribus luteolis. *Mor. hiſt.* 451. 2.

Echium ſcorpioides minus floſculis luteis. *Bauh. pin.* 254. *Raii hiſt.* 504.

Hairy Mouſe-ear Scorpion-graſs.

β. M. foliis glabris. *Lin. hort. cliff.* 46. *Kniph. cent.* 11. *n.* 81. *Knorr. del. hort.* 1. *t.* H. 1.

M. paluſtris. *Lin. ſpec.* 188. *Reich.* 1. 383. *Huds. angl.* 78. *Wither. arr. ed.* 3. 225. *Reth. cant. n.* 146. *Krock. ſilef.* 276. *Allion. pedem. n.* 188.

M. perennis. *Moench. haſſ. n.* 152.

M. glabra pratenſis. *Dill. giſſ.* 67. *Linn. lapp. n.* 75.

M. ſcorpioides paluſtris. *Ger. emac.* 337. 3. *Raii hiſt.* 504. *ſyn.* 229.

M. ſcorpioides repens. *Park. theat.* 691. 8.

Echium ſcorpioides paluſtre. *Bauh. pin.* 254.

Scorpioides ſoliſequium aliud flore majore cæruleo & albo. *Bauh. hiſt.* 3. 589.

Scorpiurus radice longa fibroſa perenni. *Hall. helv. n.* 591.

S. paluſtris perennis vjdiotibus foliis. *Mor. hiſt. f.* 11. *t.* 31. *f.* 4.

Marſh Mouſe-ear Scorpion-graſs.

Seeds ſmooth and even, tips of the leaves callous.

2. Myoſotis fruticoſa. *Shrubby Scorpion-graſs. Lin. ſyſt.* 184. *Reich.* 1. 383. *mant.* 201.

Seeds ſmooth and even, ſtem ſhrubby ſmooth and even.]

3. Myoſotis virginiana. *Virginian Scorpion-graſs. Lin. ſpec.* 189. *ſyſt.* 185. *Reich.* 1. 384. *Gron. virg.* 19.

Cynogloſſum virg. floribus & ſeminibus minoribus. *Mor. hiſt.* 3. 449. *ſ.* 11. *t.* 30. *f.* 9.

Seeds with hooked prickles, leaves ovate-oblong, branches divaricating.

4. Myoſotis Lappula. *Prickly-ſeeded Scorpion-graſs. Lin. ſpec.* 189. *ſyſt.* 185. *Reich.* 1. 384. *ſ. ſpec. n.* 158. *Gærtn. fruct.* 1. 328. *Pollich pal. n.* 182. *Gmel. it.* 1. 117. *Moench. haſſ. n.* 155. *Fl. den. t.* 692. *Ger. prov.* 298. 3. *Villars dauph.* 2. 460. *Krock. ſilef. n.* 270. *Kniph. cent.* 11. *n.* 79. *Allion. pedem. n.* 191.

Lithoſpermum ſeminibus echinatis. *Lin. hort. cliff.* 46.

Cynogloſſum Lappula. *Scop. carn. n.* 192. *Hall. helv. n.* 589. *Gaett. ſtamp.* 1. 92.

C. minus. *Bauh. pin.* 257. *Bauh. hiſt.* 3. 600. *Raii hiſt.* 491.—flore cæruleo. *Park. theat.* 514. 10.

Cynogloſſa minor montana ſerotina altera. *Col. ecphr.* 179. *t.* 180.

Bugloſſum anguſtifolium ſemine echinato. *Tournef. inſt.* 134. *Garid.* 68.

Seeds with hooked prickles, leaves lanceolate hairy.

5. Myoſotis ſpinocarpos. *Thorny-ſeeded Scorpion-graſs. Vahl ſymb.* 2. 32.

Anchuſa ſpinocarpos. *Forſk. deſcr.* 41.

Seeds muricate ſpiny, racemes leafy with the flowers re-mote, leaves linear hairy.]

6. Myoſotis apula. *Small Scorpion-graſs. Lin. ſpec.* 189. *ſyſt.* 185. *Reich.* 1. 384. *Allion. pedem. n.* 192. *Tbunb. jap.* 81. *Pluk. phyt. t.* 36. *f.* 5. *Sauv. monſp.* 62. (Lithoſpermum).

Anchuſa linea. *Cavan. diſſ.* 50. *n.* 75. *t.* 69. *f.* 1.

A. lutea minima. *Loh. it.* 312.

Bugloſſum luteum annuum minimum. *Tournef. inſt.* 134. *Quer. hiſp.* 3. 313.

Echium luteum minimum. *Bauh. pin.* 254. *Raii hiſt.* 500.

Echioides lutea minima. *Park. theat.* 514. 8.—apula campeſtris. *Col. ecphr.* 1. 134. *t.* 185.

Seeds naked, leaves biſpid, racemes leafy.

[7. Myoſotis ſpatulata. *Spatula-leaved Scorpion-graſs. Forſk. prodr. n.* 62.

Seeds ſmooth and even, leaves ſpatulate biſpid, pedunules axillary ſolitary one flowered.

DESCRIPTIONS, *&c.*

1. Hairy Mouſe-ear Scorpion-graſs has an annual fibrous root. Stems ſeveral, procumbent aſcending or erect, according to circumſtances, a long ſpan or a foot in height, or even ſomewhat more in moiſt ſituations or ſtrong land, angular, villoſe, branching towards the top for flowering: branches axillary, alternate. Leaves alternate, quite entire, bent back a little at the edge, having no apparent veins, but a very ſtrong rib along the back, which makes a ſhallow channel along the upper ſurface, of a light green colour, villoſe on both ſides and along the edge, and ſomewhat rugged: the lower leaves are elliptic or oblong, blunt, running down into the petiole, three inches long, and ſometimes more, meaſured from the ſtem; the middle and upper ones are lanceolate, tharpiſh, ſeſſile or half embracing, from an inch and half to two inches in length; both are half an inch or five lines in width. Flowers in racemes, whilſt young bending in at the top, whence the names of *Scorpioides*, *Scorpiurus* and *Scorpion-graſs*, from the ſimilitude to a Scorpion's tail; as the flowering advances, lengthening out very conſiderably and divaricating: they are alternate, in a double row, and all grow one way, each on its proper pedicel. Calyx villoſe, deeply five-cleft, cloſing at top as the ſeeds ripen. Corolla red before it opens, but when open of a fine blue, with a yellow eye, not more than a tenth or a twelfth of an inch in diameter.

The above deſcription was made on the 2d of june, 1798, from plants growing wild in a garden, in hedges, and by a brook.

This plant varies much according to the ſoil and ſituation in which it grows. On barren paſtures, heaths and walls, the plant and flowers are both much ſmaller. I have ſeen it ſcarcely more than an inch in height, bearing one minute flower only.

Merret mentions two varieties: one with wider leaves, very hairy, and larger flowers, appearing earlier than the common ſort; this grows in woods only, and owes its ſuperior ſize probably to its damp ſhaded ſituation. It was obſerved by Mr. James Sherard on the weſt of Charlton-wood, and between Redgwell and Bathampend (or Bathon-inn) in Eſſex by Mr. Dale, and is figured in Dillenius's edition of Ray's ſynopſis: the other ſmall, rough-haired, with yellow flowers, appearing in april, and occurring in very dry ſandy paſtures; in ſuch a ſoil the blue border of the corolla is very ſmall, and ſometimes is ſcarcely expanded, ſo that it appears to be wholly yellow.

β. Haller, who ſeparates the *paluſtris* from the preceding, ſays that the root is larger, long, black and perennial, the ſtem higher, the leaves larger, the flower much larger and of a paler colour. He makes Merret's firſt variety to be a variety of this: and this is what Curtis ſeems to have figured for the *paluſtris*, for the plant in his figure is very hairy, which the true paluſtris is not. According to him, the root runs out to a great length through the water, and ſends down fibres from the joints. Stalk creeping at bottom, afterwards upright, from one to two feet high, round, ſolid, branched, ſmooth, but often hairy. Leaves alternate, lanceolate, ſeſſile, ſlightly decurrent, ſmooth or hirſute, the edge often rolled back. Racemes long, dichotomous, divaricating, the tops rolled in. Flowers pedunculed and growing all one way; peduncles alternate, upright. They are much larger than thoſe of the other, are remarkable for their beauty and delicacy, ſomewhat reſemble blue enamel, and are a very pretty ornament for the edges of ponds.

Lees.

Leers thus diſtinguiſhes them: *arvenſis* has a fibrous, annual root; ſtem branched; leaves hirſute; calyx deeply five-cleft, cloſing as the ſeed ripens: ſheep do not eat the plant: *paluſtris* has a creeping perennial root; ſtem ſomewhat branched; leaves ſmooth; calyx a little open even when the ſeed is ripe: it is noxious and even deadly to ſheep.—This notion of *Myoſotis paluſtris* being deadly to ſheep is derived from Linnæus, and I very much ſuſpect that it is erroneous, it has this bad character in common with many other aquatic plants (Droſera, Pinguicula, Hydrocotyle, &c), which I believe ſheep never eat.

Withering ſays that M. arvenſis is a ſmaller plant than M. paluſtris, and the bloſſoms much ſmaller; the latter obſervation is generally juſt, but the rough Scorpion-graſs is frequently as large a plant as the ſmooth, when it grows in moiſt ſhady places.

It appears to me that M. arvenſis is villoſe or very hairy with ſmaller flowers in all ſoils and ſituations: M. paluſtris is ſmooth with larger, paler flowers, moſt exquiſitely elegant. It ſeems to flower later; for whilſt I am writing this article at the beginning of june, M. arvenſis is in full flower, and ſome of it even going off, and I cannot find a ſingle ſpecimen of M. paluſtris in flower, to compare with it.

I firſt diſcovered M. paluſtris in flower on the 11th of june. The root is truly repent. The whole plant is of a much paler green. The ſtem is ſomewhat hairy, but ſcarce viſibly ſo except towards the top. The leaves are all lanceolate, none of them ſo broad at the baſe as in the arvenſis, and I cannot diſcover any hairs on them. The corolla is four times as large as the largeſt of arvenſis, being more than three eighths of an inch in diameter, of an elegant pale blue like ſmalt, with a large deep yellow eye.

Allione and Villars have another variety, which they have adopted as a ſpecies from Haller, and he from Scheuchzer and Segnier, and have named M. nana. It is a very low plant, not even three inches in height, with a very thick tuft of leaves. Leaves roundiſh, like thoſe of Thymus Serpyllum, ſubhirſute. Spike ſmall, few-flowered, ſeldom many more than three; but a ſingle flower occupies the whole, being large and of a very bright blue colour. Calyx bearded with a long ſilky pile[a].

It forms ſolid tufts on the higheſt precipices. Leaves ſmall, blunt, lanuginous. Stems ſometimes only a line, and never more than two inches in height. It is perennial and common on the Alps[b]. Villars inſiſts that this is a diſtinct ſpecies; but ſituation changes this plant ſo much, that I ſuſpect it to be no more than a variety.

2. Stem a foot high, woody, perennial, even. Branches many, flowering at the top. Leaves alternate, linear, almoſt even, with a few hairs preſſed cloſe. Spikes terminating, with the flowers pointing one way, not peduncled. Flowers and fruits minute. Native of the Cape of Good Hope[c].

3. This is an annual plant. Leaves large. Seeds naked on the inſide, angular, erect, fixed at the baſe as in the following ſpecies. Fruit nodding.—Native of Virginia[d]. Cultivated by Mr. Miller in 1768.

4. This alſo is annual. Stem from nine or ten inches to eighteen inches in height, erect, round, ſomewhat rugged. Branches alternate. Leaves ſeſſile, ſomewhat rugged, very narrow, quite entire, blunt iſh. Flowers very ſmall, not from the axils, but on the ſide oppoſite to the leaf, at the branches, on ſhort peduncles. Corolla bright blue. Calyx open when the ſeed is ripe[e]. Seeds ſmall, coriaceous, ovate-acuminate, ſhagreened all over with bony pointed dots, on one ſide convex and muricated at the ſides with a double row of hooked prickles, angular on the other[f].

Gærtner calls theſe fruits nuts, the ſeed being covered with a ſhell. With reſpect to this genus he remarks, that it is too artificial, and differs not, in any eſſential point, from Cynoglosſum. This remark, might with equal juſtice be made on many other genera in claſſes ſtrictly natural. Villars alſo obſerves, that this little plant has all the port or air of a Cynoglosſum.

Native of many parts of Europe: Sweden, Denmark, Germany, France, Switzerland, Italy.—It was cultivated in 1683, by Mr. James Sutherland, and flowers from april to auguſt[g].

5. Stems woody at the baſe, diffuſed, dichotomouſly branched at top, cloſely hairy, aſh-coloured, as is the whole plant. Leaves ſeſſile, blunt iſh, ſpreading a little at the end. Peduncles on the branchlets, axillary, ſolitary, remote, ſhort: two leaflets under each calyx. Flowers ſmall, white. Fruit pyramidal, muricated all over, ſpiny-angular at the baſe with larger tubercles. Seeds or nuts ſhining, compreſſed at the ſides, acuminate, keeled, keel toothed[h].

6. Root reddiſh, annual. Stems ſimple or branched, a ſpan high. Leaves ovate, ſoft, ciliate, villoſe, ſeſſile, the lower ones embracing. Flowers in terminating racemes, recurved at the end. Calyx whitiſh with pubeſcence, ſwelling at the baſe, deeply five-parted; ſegments converging, acute. Corolla deep ſulphur-coloured, funnel-form: tube longer than the calyx, priſmatic at the baſe: border ſpreading very much, five-parted; ſegments orbiculate, quite entire; ſealelets roundiſh. Seeds ovate[i].

On account of the ſituation of the ſtamens, and the integrity of the petals, Cavanilles removes this ſpecies into the genus Anchuſa, where Lobel had placed it before. He ſuggeſts alſo that Myoſotis and Anchuſa might very well conſtitute one genus. To this ſuggeſtion may be applied the remark made above, under the fourth ſpecies.

Native of the South of Europe: France, Spain, Italy: alſo of Japan, where it flowers in april: about Madrid it flowers in march: with us in june and july. Cultivated by Mr. Miller in 1768[k].]

7. Native of New Zealand[l].

PROPAGATION AND CULTURE.

Sow the ſeeds in autumn, upon an open bed or border of light earth. In the ſpring thin the plants where they are too cloſe, and keep them clean. Or if the ſeeds be permitted to ſcatter, the plants will riſe without farther trouble.

[MYOSOTIS. See *Ceraſtium* and *Stellaria*.]

MYOSURUS. (*Mouſe tail.*)

[*Lin. gen. n.* 394. *Reich. n.* 426. *Schreb.* 538. *Gærtn. t.* 74. *Juſſ.* 253. Myoſuros *Dill. gen.* 4.

Claſſ. 5. 7. Pentandria Polygynia.

Nat. order of *Multiſiliquæ*. *Ranunculaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* half-lanceolate, obtuſe, reflex, annexed above the baſe, coloured, deciduous.

COR. *Petals* five, ſhorter than the calyx, very minute, tubular at the baſe, opening obliquely inwards: (with a nectariferous pore at the claws. *G.*)

STAM. *Filaments* five or more (five to twelve. *G.*), the length of the calyx. *Anthers* oblong, erect.

PIST. *Germs* numerous, placed on the receptacle in a conic-oblong form. *Styles* none. *Stigmas* ſimple.

PER. none. *Receptacle* very long, ſtyle-ſhaped, covered with the ſeeds diſpoſed imbricately.

SEEDS very numerous, oblong, acuminate.

OBS. *The number of ſtamens varies much. It bears a near affinity to* Ranunculus. *What are called petals here, in Syſt. veg. are ſaid to be awl-ſhaped petal-like nectaries. The ridges in the ſeed ſeems to be the ſtyle adhering longitudinally to the germ.*

ESSENTIAL CHARACTER.

Cal. five-leaved, growing together at the baſe. *Pet.* five, (or *Neſt.* five, awl-ſhaped, reſembling petals, and) having a melliferous pore at the claw. *Seeds* numerous (five to twelve.)

SPECIES.

1. Myoſurus minimus. *Mouſe-tail.*

Lin. ſpec. 407. *Jacq.* 309. *Reich.* 1. 778. *hort. cliff.* 117. *fl. ſuec. n.* 276. *Gærtn. fruct.* 1. 354. *Hudſ. angl.* 136. *Wither. arr. ed.* 3. 326. *Dill.*

[a] Haller. [b] Villars. [c] Linn. mant. [d] Linn. ſpec. [e] Pollich. [f] Gærtner. [g] Hort. kew. [h] Vahl. [i] Cavanilles. [k] Hort. kew. [l] Forſter.

illustr. ic. Lightf. scot. 176. *Curt. lond.* 4. 26. 251. *Engl. bot.* 435. *Relh. cant. n.* 257. *Sibth. oxon. n.* 326. *Hall. helv. n.* 2159. *Pollich pal. n.* 324. *Gmel. it.* 2. 198. *t.* 31. *Moench. hass. n.* 269. *Fl. dan. t.* 406. *Knigh. cent.* 5. *n.* 52. *Kreck. siles. n.* 496. *Villars dauph.* 2. 553.

Myosurus. *Bauh. hist.* 3. 512. *Raii hist.* 1332 *syn.* 251. *Pet brit. t.* 39 *f.* 7.

Cauda murina. *Dod. pempt.* 112. 1. *Lob. obs.* 242. 1. *ic.* 40.

Cauda muris. *Ger.* 345. 4. *emac.* 426. 4.

Holosteo affinis Cauda muris. *Bauh. pin.* 190.

Holosteum Lonicer i (2. 18. 1.) Cauda muris vocatum. *Park. theat.* 500.

DESCRIPTION, &c.]

This plant is very near a-kin to Ranunculus, in which genus it was ranged by Tournefort. The flowers are extremely small, and are succeeded by long slender spikes of seeds, resembling the tail of a mouse, whence it had the name.

[Root annual. Leaves all radical, about twenty in a plant of a middling size, upright, of unequal lengths, linear, broadest at top, flattened, faintly channelled on each side, smooth, somewhat fleshy, blunt, of a yellowish green colour, and reddish at the base: sometimes hairy, according to Hudson. Scapes or flowering stems four, five or more, each supporting one flower, upright, from two to four inches in height, longer than the leaves, round, smooth, a little thicker at the top. Calycine leaflets concave, herbaceous, with the claws lengthened out behind, pressed to the flowering stem, and tapering to a point. Petals of a yellowish colour*. Stamens varying in number from four or five to ten, twelve and even twenty, according to different authors.—Seeds compressed wedge-shaped; the outer side ferruginous, linear-lanceolate, with a ridge along the middle; the other sides half-ovate, flat, blackish, converging into a very acute angle*.

Mr. Curtis remarks, that the structure of the whole fructification, in this delicate little annual plant, is singular, and deserving the attention of the young botanist, who should be careful to distinguish the corolla from the stamens.

It grows wild in most parts of Europe, Linneus says on dry open hills; with us I have commonly found it by the sides of corn fields, especially where water has stagnated in winter, and this year (1798) coming up as a weed in a garden. Dr. Withering assigns it to corn fields, meadows and pastures in a gravelly soil.] Mr. Miller says it grows wild upon moist ground. It has occurred to me generally among clay. In English Botany it is said to be a native of gravelly corn-fields. That elegant and interesting work, describes the pistil to be conical, longer than the stamens, composed of a conical receptacle, covered with a great number (even two or three hundred) of ovate striated germs, each furnished with its own minute sessile stigma.

This plant affords a rare instance of a very great disproportion of males to females in the same flower, and yet the latter are generally all prolific. The seeds are justly described by Linneus as naked, for the part which Jussieu (and Gærtner) call a capsule is nothing more than a thickened inseparable coat, as in Ranunculus, to which Myosurus has a great affinity in its nectariferous pore.

A plant which I have before me, and which grew in a garden on a good soil, has above fifty scapes of very different lengths, some above seven inches and others about three inches long: the leaves three inches and a half in length; I do not perceive any trace of hairiness on them. It flowers in april and may, and and is not disposed yet to shed its seeds on the seventh of june.]

MYRICA. (*of Pliny, Marrien of Theophrastus and Dioscorides. Derivation merely conjectural, ἀπὸ τοῦ μυρίζω, either because it grows near streams, or because it is fabled that the daughter of Cinyras was changed into* this plant: *this verb signifying both* thus *and* lugeo. *It was put as a wreath round the heads of criminals, and the wood was accounted unfortunate.*)

Lin. gen. n. 1107. *Reich. n.* 1213. *Schreb. n.* 1510. *Gærtn. t.* 39. *Juss.* 409. Gale *Tournef. inst. par.* 1706. *t.* 3. *Dill. gen.* 10. Nagcia *Gærtn. t.* 39.

Class. 22. 4. Dioecia Tetrandria.

Nat. order of *Amentaceæ*, Lin. Juss. &c.

GENERIC CHARACTER.

* *Male.*

CAL. *Ament* ovate-oblong, imbricate on all sides, loose, composed of one-flowered, crescent-shaped, bluntly acuminate, concave *scales*. *Perianth proper* none.

COR. none.

STAM. *Filaments* four (seldom six) filiform, short, erect. *Anthers* large, twin, with bifid lobes.

* *Female.*

CAL. as in the male.

COR. none.

PIST. *Germ* subovate. *Styles* two filiform, longer than the calyx. *Stigmas* simple.

PER. *Berry* one-celled.

SEED single.

OBS. *There is a great affinity between this genus and Fothergilla.* M. Gale *has four stamens, and a dry berry, or leathery case, compressed at top and three-lobed.* M. cerifera *has usually six stamens, and a succulent globular berry.—Calyx three or four-leaved: stamens four or six: style one bifid: fruit a drupe,* Gærtn.

ESSENTIAL CHARACTER.

Ament with a crescent-shaped scale. *Cor.* none.

FEM. *Styles* two. *Berry* one-seeded.

SPECIES.

1. Myrica Gale. *Sweet Gale, Sweet Willow, or Candleberry Myrtle.*
   Lin. spec. 1453. *Syst.* 884. *Reich.* 4. 243. *mat. med.* 211. *fl. lapp. n.* 373. *suec. n.* 607. *hort. cliff.* 455. *Hudf. angl.* 432. *Wilber. obs. ed.* 3. 208. *Lightf. scot.* 613. *Relh. cant. n.* 724. *Gert. ingr.* 159. *Fl. dan. t.* 327. *Knigh. cent.* 9. *n.* 70, 71.
   Gale frutex odoratus. *Bauh. hist.* 1. 225. *Raii syn.* 443. *Dill. app.* 154.
   Rhus myrtifolia belgica. *Bauh. pin.* 414. *Raii hist.* 1707.
   R. sylvestris, s. Myrtus brabantica vel anglica. *Park. theat.* 1451. 5.
   Myrtus brabantica, s. Elæagnus Cordi. *Ger.* 1228. *emac.* 1414.
   Elæagnus Cordi. *Lob. ic.* 2. 110. 2. *adv.* 417. *obs.* 547. 2.
   Chamælæagnus. *Ded. pempt.* 780. 2.
   Thee europæum aut nostras. *Sim. Paul. monogr. Leaves lanceolate subservate, stem suffruticose.*
2. Myrica cerifera. *American Candleberry Myrtle.*
   Lin. spec. 1453. *Reich.* 4. 244. *hort. cliff.* 455. *ups.* 295. *Gærtn. fruct.* 1. 190. *Swartz obs.* 374. *Gron. virg.* 130. 153. *Kalm. it.* 2. 312. *engl. ed.* 1. 192.
   α. M. cerifera angustifolia. *Ait. hort. kew.* 3. 396. *Common or narrow-leaved American Candleberry Myrtle.*
   Myrtus brabantica similis carolinensis baccata, fructu racemoso sessili monopyreno. *Catesb. car.* 1. *t.* 69. *Pluk. phyt. t.* 48. *f.* 9.
   β. M. cerifera latifolia. *Ait. hort. kew.* 3. 396. *Broad-leaved American Candleberry Myrtle.*
   M. carolinensis. *Mill. dict. n.* 3.
   Myrt. brab. sim. carol. humilior, foliis latioribus & magis serratis. *Catesb. car.* 1. *t.* 13. *Leaves lanceolate subserrate, stem arborescent.*
[3. Myrica Faya. *Azorian Candleberry Myrtle.*
   Ait. hort. kew. 3. 397. *Leaves elliptic-lanceolate subserrate, male aments compound, drupe with a four-celled nucleus.*
4. Myrica æthiopica. *African Candleberry Myrtle.*
   Lin. syst. 884. *Reich.* 4. 244. *mant.* 294. *Thunb. prod. cap.* 32.
   M. conifera. *Burm. prodr.* 27.
   Myrt. brabanticæ accedens africana, baccis carens, conifera. *Pluk. phyt. t.* 48. *f.* 8.

* Curtis. * Gærtner.

Arbor conifera odorata, foliis ſalicis rigidis leviter ſerratis. *Raii hiſt.* 1800.
Leaves lanceolate or elliptic toothed, the loweſt entire.

5. Myrica montana. *Mountain Candleberry Myrtle.*
Vahl ſymb. 2. 99.
Buxus dioica. *Forſt. deſcr.* 159.
Leaves lanceolate ſerrate not dotted underneath, aments globular.

6. Myrica nagi. *Japoneſe Candleberry Myrtle.*
Lin. ſyſt. 884. *Thunb. jap.* 76.
Nageia japonica. *Gærtn. fruct.* 1. 191.
Nagi. *Kæmpf. amoen.* 733. *t.* 874.
Leaves lanceolate entire veinleſs.

7. Myrica quercifolia. *Oak-leaved Candleberry Myrtle.*
Lin. ſpec. 1453. *Reich.* 4. 244. *hort. cliff.* 456. *Burm. ind. t.* 98. *f.* 1. *Thunb. prodr. cap.* 32.
Laurus africana minor folio quercus. *Comm. hort.* 2. 161. *t.* 81. *Raii dendr.* 85. 7.
α. M. quercifolia. *Mill. dict. n.* 5.
Smooth oak-leaved Candleberry Myrtle.
β. M. hirſuta. *Mill. dict. n.* 6.
Hairy oak-leaved Candleberry Myrtle.
Leaves oblong oppoſitely ſinuate.

8. Myrica cordifolia. *Heart-leaved Candleberry Myrtle.*
Lin. ſpec. 1454. *Reich.* 4. 245. *hort. cliff.* 456. *Thunb. prodr. cap.* 32. *Plunk. phyt. t.* 319. *f.* 7.
Alaternoides ilicis folio craſſo hirſuto. *Walth. hort.* 3. *t.* 3.
β. M. fol. ſubcordatis integris ſeſſilibus. *Burm. afr.* 263. *t.* 98. *f.* 3.
Leaves cordate ſerrate ſeſſile.

9. Myrica trifoliata. *Three-leaved Candleberry Myrtle.*
Lin. ſpec. 1453. *Reich.* 4. 245. *amoen.* 6. *afr.* 98.
Leaves ternate toothed.

DESCRIPTIONS, *&c.*

1. This riſes with many ſhrubby ſtalks from two to near four feet high, dividing into ſeveral ſlender branches, [and covered with a duſky or ruſt-coloured bark, ſprinkled with white dots. The buds are compoſed of nine leafy ſhining ſcales, the firſt nearly oppoſite, very ſhort, rectangularly pointed, the reſt ovate, blunt.] Leaves alternate, ſtiff, an inch and half long, and half an inch broad in the middle, light or yellowiſh green, ſmooth, a little ſerrate towards their points, and emitting a fragrant odour when bruiſed: [this is occaſioned by the reſinous points with which they are ſprinkled: they are convoluted and petioled. The flowers appear before the leaves; and the flower-buds are above the leaf-buds, at the ends of the branches, whence as ſoon as the fructification is completed the end of the branch dies, the leaf-buds which are on the ſides ſhoot out, and the ſtems become compound. The aments or catkins are of a ſhort ovate figure, of a yellowiſh brown colour, and frequently ſprinkled with ſhining reſinous golden particles. The fruit is a coriaceous berry. The male and female aments are ſometimes on diſtinct plants, and ſometimes on the ſame individual[a]. Dr. Withering affirms that he has found a few female flowers upon the male catkins. Mr. John Templeton, of Orange Grove, near Belfaſt, informs me that the monoecous plants may be diſtinguiſhed by the form of the leaves being exactly lanceolate, the broadeſt part lying in the middle; whereas in the dioecous plants the broadeſt part is near the apex, and the leaves in general are much ſmaller.

The leaves have a bitter taſte, and an agreeable odour, like thoſe of Myrtle. Their eſſential oil riſes in diſtillation. The northern nations formerly uſed this plant inſtead of Hops, and it is ſtill in uſe for that purpoſe in ſome of the weſtern iſles and a few places of the highlands of Scotland. Unleſs it be boiled a long time, it is reported to occaſion head-ache. The catkins or cones boiled in water throw up a ſcum reſembling bees-wax, which gathered in ſufficient quantity would make candles. From the next ſpecies Myrtle candles are prepared in America. It is uſed to tan calf-ſkins. Gathered in the autumn it dies wool yellow, and is uſed for that purpoſe both in Sweden and Wales. The Swedes ſometimes uſe a ſtrong

[a] Linn. Iap. & ſpec. Lightf. Stokes in Wither.

decoction of it to kill bugs and lice, and to cure the itch. The Welſh lay branches of it upon and under their beds to keep off fleas and moths, and give it as a vermifuge in powder and infuſion, applying it alſo externally to the abdomen. In moſt of the Hebrides, as well as in the Highlands of Scotland, an infuſion of the leaves is frequently given to children to deſtroy worms. In Iſla and Jura the inhabitants garniſh their diſhes with it, and lay it between their linen and other garments, to give them a fine ſcent, and to drive away moths. When it grows within reach of a port, the ſailors make beſoms of it for ſweeping their ſhips. In the iſle of Ely they make faggots with it to heat their ovens.

Linnæus was induced to ſuſpect, from the ſmell of this ſhrub, that Camphor might poſſibly be prepared from it. Horſes and goats eat it; ſheep and cows refuſe it[b].

Native of the northern parts of Europe, and of North America, in bogs: flowering with us in may. Not unfrequent in many parts of England, Wales, Scotland and Ireland, [particularly in the northern and weſtern counties, alſo in Windſor-park and near Tunbridge-wells; [in the fens of the iſle of Ely; about Wareham in Dorſetſhire, between Shap and Anna Well in Weſtmorland. Gerarde ſays, it grows by Colbrooke, and in ſundry other places. Darlingham-moor, in Norfolk. Frequent in the Highlands of Scotland.

In England it has the names of Sweet Gale, Goule, Gaule, Sweet Willow, Wild Myrtle and Dutch Myrtle. The Scotch call it Gaul; and the Iriſh Moſs-Gaul. Our Gaul is from the German and Dutch *Gagel*. In thoſe languages, as well as in the Daniſh and Swediſh, it is alſo called *Port* or *Poſt*. In French it is, *le Gale odorant, le Piment royal, Myrthe bâtard* or *du Brabant, Piment des marais*.

So little was the Tea ſhrub known formerly, that Simon Paulli aſſerted it to be the ſame with our Sweet Gale.

2. American Candleberry Myrtle is a ſhrub, or a tree acquiring a height of thirty feet: the bark is warted; the branches unequal and ſtraight. Leaves evergreen, ſomewhat cluſtered, blunt at the end, membraneaceous-rigid, wrinkled, ſmooth, covered underneath with very minute, ſhining, orange-coloured, glandular pores. Flowers in aments, on different individuals. Swartz had not an opportunity of obſerving the male aments.] Miller ſays they are about an inch long, and ſtand erect. [The female aments are ſeſſile, axillary, linear, ſhorter than the leaves. Scales very minute, and between each of them an oblong minute germ, longer than the ſcales; two filiform ſtyles, the length of the germ; and reflex ſtigmas. Berry minute, roundiſh, yellow[c]. Gærtner, finding the ripe fruit to be farinaceous, as Miller and Kalm had deſcribed it, calls it a Drupe; which is juiceleſs, ſuperior, ſmall, ovate-globular, defended at the baſe by the four calycine leaflets, acuminate above, covered all over with a white farinaceous ſubſtance mixed with many hard duſky granules, making the whole of the rind in the ripe fruit: ſhell ovate-acuminate, bony, thickiſh, one-celled, valveleſs. Seed filling the cavity of the ſhell, pale yellow with duſky veins, and a white ſcar at the baſe[d].]

Willich remarks, that he finds ſometimes four, and ſometimes ſix ſtamens[e].]

Mr. Miller makes two ſpecies of this. The Common ſort, according to him, riſes with many ſtrong ſhrubby ſtalks eight or ten feet high, ſending out many branches. Leaves ſtiff, near three inches long, and one inch broad in the middle, ſmooth, entire, of a yellowiſh lucid green on their upper ſide, but paler on their under, alternate, ſubſeſſile, having a grateful odour, when bruiſed. Male and female flowers on different plants. Male catkins about an inch long, erect. The female flowers come out on the ſide of the branches in longiſh bunches; and are ſucceeded by ſmall roundiſh berries, covered with a ſort of meal.

[b] Withering. Lightf. Linnæus. [c] Swartz. [d] Gærtner. [e] Obſ. 6.

The Broad-leaved American Candleberry Myrtle; *Myrica caroliniensis* as he names it, does not rise so high as the former, the branches are not so strong, and they have a grayish bark. The leaves are shorter, broader, and serrate. In other respects it is like the preceding, and the berries are collected for the same purpose.

[They are natives of North America: and of Jamaica, in the highest mountains. The common sort was cultivated in 1699, by the Dutchess of Beaufort. They flower in may and june [1].

Candles are made from the berries in North America, whence it is called there the *Tallow shrub* or *Candleberry tree*; some also name it the *Bayberry-bush*. It grows abundantly on a wet soil, and seems to thrive particularly well in the neighbourhood of the sea, nor does it seem ever to be found high up in the country. The berries intended for making candles are gathered late in autumn, and are thrown in a pot of boiling water; their fat melts out, floats at the top of the water, and may be skimmed off. The fat when congealed looks like tallow or wax, but has a dirty green colour; it is therefore melted again and refined, by which means it acquires a fine and pretty transparent green colour. It is dearer than common tallow, but cheaper than wax. They usually mix some tallow with it. Candles of this kind do not easily bend or melt in summer, as common candles do; they burn better and slower, nor do they cause any smoak, but rather yield an agreeable smell, when they are extinguished. At present not many candles of this kind are used, the animal tallow is readily come at, it being very troublesome to gather the berries. They are chiefly used by poor people, who live near where the bushes grow, and have not cattle enough to supply them. A soap is made from the fat, which has an agreeable scent, and is excellent for shaving: and it is used by surgeons for plaisters. In Carolina they likewise make sealing-wax from these berries. The root is accounted a specific in the tooth-ache [2].

3. Native of Madeira and the Azores, where it was found by Mr. Francis Masson. Introduced in 1777. It flowers in june and july [3].

4. This is an obscure shrub, approaching to M. Gale and cerifera. Leaves alternate, petioled, coriaceous, naked, having three or four teeth on each side. Spikes axillary, erect, shorter by half than the leaf.—Native of the Cape of Good Hope [4].

5. This is a shrub, with round, smooth branches. Leaves subpetioled, an inch long, narrow-lanceolate, attenuated to both ends, smooth, having five or six minute sharp approximating serratures towards the tip. Flowers glomerate in a sessile head, axillary, small, smooth. Calyx four-leaved: leaflets minute, lanceolate. Filaments scarcely any. Anthers four, longer than the calyx. Berry the size of a pepper-corn. It has the habit and fruit of Myrica, but differs from it in having a four-leaved calyx, in the same manner as the next species, which Gaertner has distinguished under the name of Nageia [5].

6. Stem shrubby, smooth, upright. Branches decussated, round, knobbed, spreading very much, leafy. Leaves cliptic, sessile, blunttish, oblique, smooth and even, opposite, spreading, leathery, a finger's length. Berry globular, smooth, the size of a Cherry [6].

Calyx two-leaved or four-leaved. Fruit a superior, spherical, berried drupe, dark-purple with a bloom or meal on it, when ripe: rind fleshy, succulent, moderately thick: shell spherical, with an acuminate point at top, bony, thin, brittle, one-celled, valveless. Seed of the same shape with the cavity, tuberculated, fixed by the top [7].—Native of Japan.]

7. Stalks slender, shrubby, about four feet high, dividing into smaller branches. Leaves about an inch and half long, and almost an inch broad, some of them having two, others three deep opposite indentures on their sides, they sit close to the branches, and end in obtuse indented points: between the leaves come out some oval catkins, which drop off. This species retains its leaves all the year.

[1] Hort. kew. [2] Kalm. [3] Hort. kew. [4] Linn. mant. [5] Vahl. [6] Thunberg. [7] Gaertner.

[Mr. Miller had not an opportunity of observing the female flowers or the fruit. Mr. Ray mentions that the fruit is dry when ripe, and contains only a single seed.

Mr. Miller makes two species of this—M. quercifolia and hirsuta.] The first having smooth shining stalks and leaves, both of which are hairy in the second, and the leaves of a darker green. He received them from Holland as different species, but he suspected them to be what they certainly are, mere varieties.

Native of the Cape of Good Hope. [Cultivated in 1752 by Mr. Miller. It flowers in june and july [8].]

8. This has a weak shrubby stalk, five or six feet high, sending out many long slender branches, closely garnished their whole length with small heart-shaped leaves, sitting close to the branches, slightly indented and waved on their edges. The flowers come out between the leaves in roundish bunches: they have an uncertain number of stamens, and are all included in one common scaly involucre or cover. The leaves continue all the year green.

[Mr. Miller had not an opportunity of observing the female flowers.

Native of the Cape of Good Hope. Cultivated by Mr. Miller in 1759 [9].

9. This is a shrub, with alternate petioled leaves; leaflets sessile, lanceolate, acuminate, tomentose underneath. Fruits in a raceme, berried, rugged.—Native of the Cape of Good Hope [10].]

PROPAGATION AND CULTURE.

1. The first sort growing naturally in bogs, cannot be cultivated in a garden without bog earth in a moist situation.

2. American Candleberry Myrtle is propagated by seeds sown in autumn; for if they are kept out of the ground till the spring, they seldom grow till the year after. The plants require water in dry weather, and should be screened from frost whilst young. When they have obtained strength, they will resist the cold of this country very well. This shrub delights in a moist soft soil.

4. 7, 8, 9. As these do not produce seeds here, they are propagated by layers, but they do not take root very freely, so that the plants are not very common in Europe; for I do not find that the cuttings of these plants will easily take root, having made several trials of them in all the different methods; nor have the Dutch gardeners had better success, so that the plants are as scarce there as in England.

When the layers are laid down, that part of the shoot which is laid should be tongued at a joint, as is practised in laying Carnations; and the young shoots only should be chosen for this purpole, for the old branches will not put out roots. These layers are often two years before they will have taken root enough to transplant, for they should not be separated from the old plants till they have made good roots, because they are very subject to miscarry if they are not well rooted.

When they are taken off from the old plants, they should be each put into a separate small pot, filled with soft, rich, loamy earth; and if they are placed under a common frame, shading them from the sun in the middle of the day, it will forward their taking new root; then they may be placed in a sheltered situation during the summer, and in the autumn removed into the green-house, and treated in the same way as other plants from the same country. The best season for laying down the branches, I have observed to be in july, and by the same time the following year they have been fit to remove.

[MYRICA. See *Cliffortia*, *Liquidambar*, *Tamarix*.

——— asplenifolia. See *Conopteris*.

MYRIOPHYLLUM (*of Pliny*. *Myriophyllon of Dioscorides*. *From* μυρια, *myriads, and* φυλλον, *a leaf.*) *Lin. gen. n.* 1066. *Reich. n.* 1163. *Schreb. n.* 1440. *Vaill. mem. par.* 1719. *t.* 2. *f.* 3. *Juss.* 18. *Gaertn. t.* 68. Pentapetalopyllum. *Dill. gen.* 70.

Class. 21, 7. Monoecia Polyandria.

Nat. order of *Inundatæ*, *Naiades*, Juss.

[8] Hort. kew. [9] Idem. [10] Linn. amoen.

GENERIC CHARACTER.

* *Male Flowers.*

CAL. *Perianth* four-leaved: *leaflets* oblong, erect: *outmost* larger, inmoſt leſs.

COR. none.

STAM. *Filaments* eight, capillary, longer than the calyx, flaccid. *Anthers* oblong.

* *Female Flowers* below the males.

CAL. *Perianth* as in the male.

COR. none.

PIST. *Germs* four, oblong. *Styles* none. *Stigmas* pubeſcent.

PER. none.

SEEDS four, oblong, naked.

OBS. M. verticillatum *has often*, ſpicatum *more ſeldom, hermaphrodite flowers.*

ESSENTIAL CHARACTER.

Cal. four-leaved. *Cor.* none, (or two-petalled, *G.*)

MALE. *Stam.* eight.

FEM. *Piſt.* four. *Style* none. *Seeds* four, naked. (Stigmas two or four, ſeſſile. Nuts two or four, corticated, G.)

SPECIES.

1. Myriophyllum ſpicatum. *Spiked Water-Milfoil.*
Lin. ſpec. 1409. *ſuſt.* 856. *Reich. 4. 154. hort. cliff. 446. fl. ſuec. n.* 867. *lapp. n.* 343. *Gærtn. fruct. 1.* 331. *Hudſ. angl.* 419. *Wither. arr. ed.* 3. 389. *Engl. bot.* 83. *Lightf. ſcot.* 581. *Reich. cant. n.* 708. *Sibth. oxon. n.* 391. *Scop. carn n.* 1180. *Leers herborn. n.* 732. *Pollich pal. n.* 905. *Fl. dan. t.* 681. *Sauv. monſp.* 160. *Villars dauph.* 3. 757. *Gmel. ſib.* 3. 35. *t.* 5. *f.* 2. *it.* 2. 198. *t.* 33. *Kniph. cent.* 5. *n.* 59.
Pentapteris ſpica nuda. *Hall. helv. n.* 993.
Milleſolium aquaticum pennatum ſpicatum. *Bauh. pin.* 141. *prodr.* 73. *t. Park. theat.* 1257. 7. *Raii hiſt.* 191. *ſyn.* 2. 279. 4.
M. pennatum aquaticum. *Bauh. hiſt.* 3. 783. 1.
Potamogiton foliis pennatis. *Tournef. inſt.* 233. *Raii ſyn.* 3. 150. *Petiv. brit. t.* 6. *f.* 5.
β. Milleſolium aquat. penn. minus, foliolis ſingularibus latiuſculis floſculis ſubjectis. *Mor. hiſt.* 3. 622. *ſ.* 15. *t.* 4. *f.* 7. *Raii ſyn.* 151.
Potamogiton pennis tenuiſſimis. *Petiv. brit. t.* 6. *f.* 6.
Spike interrupted, leafleſs.

2. Myriophyllum verticillatum. *Whorled Water-Milfoil.*
Lin. ſpec. 1410. *ſuſt.* 856. *Reich. 4. 154. hort. cliff. 446. fl. ſuec. n.* 868. *Hudſ. angl.* 420. *Wither. arr. ed.* 3. 390. *Engl. bot.* 218. *Relh. cant. n.* 709. *Sibth. oxon. n.* 392. *Pollich pal. n.* 906. *Fl. dan. t.* 1046. *Sauv. monſp.* 160. *Villars dauph.* 3. 757. *Gmel. ſib.* 3. 36.
Pentapteris floribus alaribus. *Hall. helv. n.* 992.
Myriophyllon aquaticum minus. *Cluſ. hiſt.* 2. 252. 1. *Ger. emac.* 827 *n.* 6. *Vaill. act. par.* 1719. 31.
Milleſolium aquat. minus. *Park. theat.* 1257. *t.* 1526. *f.* 3. *Bauh. hiſt.* 3. 783. *Raii hiſt.* 1322. *ſyn. ed.* 2. 279. *Petiv. brit. t.* 6. *f.* 8.
M. aquat. floſculis ad foliorum nodos. *Bauh. pin.* 141. *Loeſ. pruſſ.* 165.
Pentapterophyllon aquaticum, floſc. ad fol. nodos. *Dill. giſſ.* 112. *& app.* 178. *t.* 7. *Raii ſyn.* 316.
Flowers in leafy whorls.

DESCRIPTIONS, &c.

Theſe are perennial herbs, inhabitants of the water. Leaves in whorls, pinnate, linear. Flowers axillary, ſeſſile, ſolitary, in the upper whorls male, in the lower female. In the ſecond ſpecies they are frequently hermaphrodite [a]. Juſſieu has placed theſe plants among the *Acotyledones*; they belong however clearly to the *Dicotyledones*, for the two lobes of the ſeed are much more eaſily diſcerned and ſeparated than in Calliriche [b].

1. Stem branched. Leaves in whorls under water, pinnate; pinnas capillary, deep green. Flowering ſpike riſing above the water, bearing ſix or eight whorls of ſeſſile flowers; the upper male, ſomewhat crowded, the lower female, more diſtant. Calycine leaflets oval, concave, purpliſh on the outſide, ſoon deciduous. Anthers yellowiſh green. Calyx of the female flowers ſmaller. Stigmas ſpreading, cruciform [c].

[a] Juſſieu. [b] Gærtner. [c] Woodw. Mſ.

Gmelin obſerves, that there are always four leaves in a whorl; Pollich that there are four, ſix, and even more; that four ſeſſile flowers make a whorl, that there are eight, nine, or ten whorls in a ſpike, the four uppermoſt of which have male flowers.

Withering remarks, that the ſtems are reddiſh, divided within into about ſixteen cells, and that ſome of the males contain the rudiments of four germs.

Profeſſor John Martyn, in a M. S. note in the margin of Ray's hiſtory, deſcribes the flowers as having four petals, with a ſmall four-parted calyx, both ſitting on the germ; the petals very fugacious, falling as ſoon as they open, and diſcovering the anthers on very ſlender filaments in the male flowers; ſoon after the calyx alſo falls off, and diſcovers the four-cleft ſtyle in the female flowers.

Gærtner names the ſeeds nuts; ſometimes there are two of theſe, but more frequently four; they are ſmall, ſubglobular, before they are ripe united by means of the rind, but afterwards ſeparable: rind thin, membranaceous: ſhells hard, ſomewhat bony, thick, whitiſh, one-celled. Seeds ſolitary, ſubcylindric, pale.

Native of moſt parts of Europe, in ſtill water, as ditches, ponds and lakes. It flowers from may to july.

3. More branched: ſpikes ſmaller: broadiſh entire leaves at the baſe of the whorls.—Found by Bobart near Lodden-bridge, not far from Reading; alſo in the river on Hounſlow-heath [a].

2. In muddy ditches with little water, the ſtems ſimple, ſix or eight inches high. Leaves not more than an inch long, with pinnas one and a half or two lines in length. In ponds the ſtems branch, and are two feet or more in length; the leaves under water one and a half or two inches long, with ſlender capillary pinnas. Spike ſix or ſeven inches long, with from twelve to ſixteen whorls or more, the lower ones about half an inch diſtant, the upper ones nearer, with four or five pinnate leaves at each whorl, about half an inch long, the pinnas about a line in length. Flowers in the axils of the leaves ſimilar to thoſe of the preceding: the flowers of the upper whorls are uſually male, thoſe of the lower female; ſometimes the upper are male, the middle hermaphrodite, and the lower female [b].

Linnæus ſays that he has ſeen plants with male and female flowers diſtinct, and that he has alſo ſeen it with hermaphrodite flowers, but not ſo frequently. According to Turra, the flowers are hermaphrodite, and the leaves in fours.

Villars obſerves that the leaves of this are leſs fine and diſtinct than thoſe of the firſt ſort; that the flowers come out among theſe, inſtead of being ſeparate: and that the ſtems do not ſtand ſo high out of the water.

This alſo is an inhabitant of ditches and ſtagnant waters, but not found ſo extenſively as the other, and leſs common in Britain. With us it has been obſerved in two or three places near Cambridge; by the bridge on the Botley road, near the lane going to Medley, in Oxfordſhire, near Bungay, in Suffolk; near Yarmouth and at Hedenham, in Norfolk; and in the river near Peterborough. It flowers in june and july.

MYRIOPHYLLUM. See *Hottonia.*

MYRIOTHECA. See *Marattia.*

MYRISTICA. (Μυριστικὸς, *odorus, unguentorum illitus*; *from* Μύρον, *unguentum, ointment.*)
Lin. gen. Schreb. n. 1262. *Thunb. nov. gen.* 83. *diſſ. de Myriſtica, Upſ.* 1788. *Gærtn. t.* 41. *Swartz. prodr.* 96. *Bot. mag.* 6. 22. *t.* 1—3. *Juſſ.* 81.
Virola. *Aubl. t.* 345. *Juſſ.* 81.
Claſſ. 22. 14. Dioecia Syngeneſia.—Monadelphia Triandria. *Swartz.*
Nat. order of *Lauri*, Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* one-leafed, coriaceous, trifid: *ſegments* ovate, acute.

COR. none.

[a] Doody in Ray ſyn. [b] Woodw. Mſ.

STAM. *Filament* one, columnar, cylindric, erect, shorter than the calyx. *Anthers* three to ten, (twelve or thirteen, *Bet. mag.*) linear, connate, growing round the upper part of the filament.

* *Female*, on a distinct tree: (on the same trunk. *G. T.*—on different trees. *Lamarck* and *Jussieu.*)

CAL. *Perianth* as in the male, deciduous.

COR. none.

PIST. *Germ* superior, ovate. *Style* very short. *Stigma* bifid: *segments* ovate, spreading.

PER. *Capsule* drupaceous, fleshy, roundish, one-celled, at length two-valved, bursting earlier on one side. *Aril* between the pericarp and the nut, somewhat fleshy, oily, subdivided into longitudinal segments.

SEED. *Nut* roundish, one-celled, valveless, with a thin shell. *Nucleus* roundish, variegated with flexuose curvatures.

ESSENTIAL CHARACTER.

Cal. trifid. *Cor.* none.

MALE. *Filament* columnar. *Anthers* terminating, united.

FEM. *Capsl.* superior, drupaceous, two-valved. *Nut* involved in an aril, called the *Mace*.

SPECIES.

1. Myristica aromatica. *Aromatic* or *true Nutmeg-tree.*
Swartz prodr. 96. *obf.* 217.
M. officinalis. *Lin. fyst.* 493. *fuppl.* 265. *Gærtn. fruct.* 1. 194.
M. moschata. *Woodv. med. bot.* 363. *t.* 134.
Nux myristica. *Rumph. amb.* 2. 14. *t.* 4.
N. moschata fructu rotundo. *Bauh. pin.* 407. *Pluk. phyt. t.* 209. *f.* 1. *Raii hist.* 1523. *Ger.* 1353. *emac.* 1536, 1537.
Muscadier. *Sonnerat it. guian. t.* 116—118.
Calyxes ovate trifid at the top, leaves elliptic pubescent underneath, fruits oval.

2. Myristica sebifera.
Swartz prodr. 96.
Virola sebifera. *Aubl. guian.* 904. *t.* 345.
Leaves cordate oblong tomentose underneath, fruits tomentose.

3. Myristica fatua.
Swartz prodr. 96.
Leaves oblong-lanceolate pubescent underneath, calyxes and fruits villose?

DESCRIPTIONS, *&c.*

1. The Nutmeg is a large tree, with erect branches, and a smooth ash-coloured bark; the inner bark is red. Leaves petioled, alternate, quite entire, shining, paler underneath, nerved. Peduncles axillary, two or three-flowered, solitary; but only one flower arrives at maturity. Calyx fleshy, smooth, segments spreading, shorter than the tube. Filament solid, the length of the calyx. Anthers eight, ten or twelve, growing longitudinally round the upper half of the filament. Calyx in the female smaller. Covering of the fruit (or mace) subdivided irregularly somewhat like a net, fulvous. The leaves are aromatic; and if the trunk or branches be wounded they yield a glutinous red liquor*.

Linnæus was not acquainted with the true character of the Nutmeg-tree, and it is imperfectly described in the *Supplementum Plantarum*, from a specimen sent by Sonnerat. The fructification was first accurately described by Thunberg in the Stockholm acts for 1782: and afterwards by Swartz, from specimens preserved in spirits in the collection of Sir Joseph Banks, which came from Banda and the Isle of France.

Gærtner has described the fructification thus:

Flowers of distinct sexes on the same trunk. Calyx trifid, in the female inferior. Corolla none. Stamen one, thick: anthers sessile at top. Style one. Fruit a superior berry, elliptic-spheroidal, with a shallow longitudinal groove on one side, fleshy, very smooth, one-celled: flesh thick, rather solid, finally drying up into a coriaceous crust, opening on the side. Seed one, ovate-globular, nucamentaceous, arilled, by help of this aril fixed to the bottom of the cell. The aril or cover, which is commonly called *Mace*, is fleshy-coriaceous, reddish saffron-coloured or yellow, one-leafed at bottom, multifid at top; the segments linear, flexuose, branched, widening upwards and sometimes gashed at the top. Integument double: the *outer*, a thin brittle shell, pale chestnut-coloured, shining, reticulated by the impressions of the aril: the *inner* membranaceous-cruftaceous, subrufescent, very closely cleaving to the kernel, and deeply immersed in its substance, by its internal processes. Albumen of the same form with the seed, fleshy-farinaceous, as it were chewed, variegated whitish and bay, having a cavity at bottom for the embryo, and sometimes a void space in the middle, fragrant and gratefully aromatic. Embryo small, erect, hollowed out like a dish, milk-white: cotyledons fleshy-foliaceous, waved, from upright spreading into a two-parted almost hemispherical cup, joined. Radicle inferior, in form of a very small tubercle, under the cotyledons. The fruit would be a drupe, were it not for the Aril.

* Swartz.

The Nutmeg-tree is a native of the East Indies, and especially of the island of Banda, in latitude 4° 30′ S. longitude 128° 10′ E.—It has in a manner been extirpated in all the islands except Banda, which might easily supply every nation upon earth; it is however certain that there a few trees of this spice upon the coast of New Guinea. There may perhaps be both Cloves and Nutmegs upon other islands to the eastward; for those neither the Dutch nor any other Europeans seem to think it worth while to examine*.

* Cook's voy. 744.

Monf. Poivre sent persons in june 1770 to the least frequented part of the Moluccas in search of what the avarice of the Dutch had hitherto withheld from the rest of the world; and to him the French Colonies in the isles of France and Bourbon are indebted for the Nutmeg, Clove and Cinnamon.

By an account sent to Monf. de Sartines in 1779, by the King of France's gardener at the island Bourbon, it appears that the King's garden there possessed at that time thirty-eight male aromatic Nutmeg-trees, and eight female, the produce of two importations. The first female, produced by the nuts of the first importation, bore six Nutmegs the preceding year. These were all of the long form, and surrounded by the Mace on all sides. Since that time a second and third female tree, produced by the nuts of the last exportation, have yielded nuts of the same long shape. A fourth tree shew nuts, which were very large, and likely to be of the long sort. A fifth yielded nuts one-third smaller: the Mace went only half round them, leaving them at liberty to break from it: they were round, and had a longitudinal stripe on one side.

The gardener relates that he had twenty-nine Nutmeg-trees in his orchard, of which two only were female; the case is the same in other plantations, and all these males came from long nuts planted in 1772.

It being probable that the woods in the Moluccа islands produce more of the trees which bear long nuts, than of those which bear round ones, the natives probably gave the former, and the merchants took them without suspecting any fraud. It might therefore have happened, that not a single fruiting tree of the true sort had been imported; and in fact, there was not one fruiting tree of the first importation any where but in the King's garden, and that produced long nuts. So that had not Monf. Poivre sent a second time to the Moluccas, the French colonies might never have had a second female tree.

The gardener distinguishes the trees into three sorts. The Male or barren Nutmeg. The Royal Nutmeg, or female producing the long nuts. And the Queen Nutmeg, yielding the precious round nuts, intended to reproduce the females, but which gives separately, the one long nuts intended to give males, the other round nuts intended to produce the two sorts of females; namely, that producing the long, and that producing the round nut.

The only difference between the Royal and Queen Nutmeg is in the fruit. That of the Royal is thicker, longer and more pointed, the green shell is thicker, and it is longer in ripening: the green shell, after opening, preserves its freshness eight or nine days: the

Mace is more ſubſtantial, and three or four times as long as that of the Queen Nutmeg; and its ſtripes or thongs, of which there are from fifteen to ſeventeen principal ones, are of a livelier red; they are alſo broader, longer and thicker, and not only embrace the nut throughout its whole length, but paſs it and croſs under it, as if to hinder it from falling. The Royal Nutmeg is generally from fifteen to ſixteen lines long, thick in proportion, and has no longitudinal ſtripe. It remains on the tree a long time after the opening of the green ſhell, and gives birth to inſects in the ſhell that feed upon it.

The Queen Nutmeg produces much ſmaller nuts, only nine or ten lines long, not ſo thick by a third, and well marked by a longitudinal groove on one ſide; they are round and reſemble a ſmall Peach: the green ſhell is not thick: the Mace, which is compoſed of nine or ten principal ſtripes, grows only half down the nut, leaving it at liberty to eſcape and plant itſelf. By thus detaching itſelf, the nut prevents the inſects from deſtroying it: the green ſhell alſo, changing at the end of two or three days, ſoon falls, and ſeparates from the nut. This green ſhell, when preſerved, has the fine taſte of the nut itſelf[c].

A ſmall eſtabliſhment for theſe ſpices has alſo been formed by the French ſince 1769, on the iſle of Secheyles, in latitude 4° 38' S.[d]

The Nutmeg-tree has been introduced into the Britiſh territories in the Eaſt Indies. Captain W. C. Lennon of the Mary, acquaints Dr. Anderſon, at Madras, on the 20th of auguſt, 1796, that he had brought ſafe from Amboyna and Banda, ſome Clove and Nutmeg plants of the beſt kinds, and that it was chiefly owing to Captain Oſborne of the Centurion, that he was enabled to bring them in ſafety to Pulo Penang. He had on board ſeven Nutmeg and four Clove trees, of which two of the former were planted at Madras, the reſt were ſent to Marmalon, excepting two of the Nutmeg trees, which had been forwarded by Captain Pakenham for Mr. Andrew Roſs.

A premium has been offered by the Society of Arts, Manufactures and Commerce of London, ever ſince the year 1783, for the greateſt quantity of merchantable Nutmegs, not leſs than five pounds weight, the growth of our iſlands in the Weſt Indies; but hitherto without ſucceſs.

Sir George Staunton relates, that a perſon belonging to the Embaſſy to China had a preſent from the medical garden at Batavia of a young growing Nutmeg plant, and of a nut ſuppoſed capable of germination; that he committed them to the care of a gentleman bound for England, in order to be put in his Majeſty's botanic garden at Kew; but that the Nutmeg-plant ſuffered in the paſſage, and was left at St. Helena.

Sir George ſays that the Nutmeg-tree, with a ſmooth brown bark, riſes perfectly ſtraight. Its ſtrong and numerous branches proceed regularly in an oblique direction upwards. They bear large oval leaves pendulous from them, ſome a foot in length; the upper ſurface ſmooth and of a deep agreeable green; the under ſurface marked with a ſtrong nerve along the middle, from which others proceed obliquely, it is of a uniform bright brown colour, as if ſtrewed all over with a fine brown powder, and the whole leaf is very fragrant[e].

2. A tree of forty or ſixty feet high; branching at the top: the branches long, tortuous, upright and declining; ſcattered here and there: the leafy and flowering branchlets downy and ferruginous: the leaves cordate-oblong, ſharp, green above, and ſmooth; below downy, and reddiſh: they are perfectly entire and have ſhort footſtalks: the flowers are borne in cluſters and are axillary and terminal: the raceme is large, downy, and ferruginous. The flowers heaped, five or ſix, ſeſſile. The fruit varies in ſize and form on different trees; being twice as large in ſome: it is oblong, the valves being produced into an obtuſe cylinder. From the kernel is extracted a ſpecies of yellowiſh ſuet or fat, which ſerves for various medical and œconomical purpoſes; and is made into candles. From the wounded bark flows a red acrid juice.

Native of marſhy woods and hills in Guiana[f].

3. Native of Tobago.

The number of anthers in the firſt ſpecies is ſcarcely to be diſtinguiſhed, being aſſimilated by the polliniferous grooves, and not having three more diſtinct as in this and *ſobifera*. Aublet has figured his *Virola* with ſix ſtamens, which muſt be a miſtake, as appears from the ſpecimens, which have been carefully examined by Swartz.

Gærtner has given three other ſpecies of Myriſtica:

1. Myriſtica dactyloides. 195. *t.* 41. *f.* 2.
M. fructu inodoro. *Lin. zeyl. n.* 588.
Nux indica oblonga, intrinſecus ſimilis nuci moſchatæ. *Bauh. hiſt.* 1. 399.
Panam-Palca. *Rheed. mal.* 4. 9. *t.* 5.
Nux moſchata malabarica. *Valent. muſ.* 1. *epiſt. orient.* 83. *t.* 4.
N. myriſtica major ſpuria malabarica. *Raij hiſt.* 1524.
Berry ovate oblong, yelloviſh green, with a fleſhy ſoft thick rind. Mace like that of the true Nutmeg in ſhape and colour, but not ſo pleaſant in taſte and ſmell. Shell of the ſame ſhape with the ſeed, of a black bay colour. Seed without ſmell, ovate-cylindric, aſh-coloured or dirty reddiſh, variouſly wrinkled, convex on one ſide, and marked with a groove on the other. Albumen farinaceous, may be grated like ſuet, inſipid, and has a large cavity for the embryo a little above the baſe. Embryo largiſh, concave: corydedons fleſhy-foliaceous, from upright ſpreading, with the edges fringed, plaited and channelled.—Native of Malabar and Ceylon.

2. Myriſtica Irya. *Gærtn.* 195. *t.* 41. *f.* 3.
Iria Iryaghas. *Lin. zeyl. n.* 589.
Nux zeylanica, moſchatæ rotundæ ſimilis, inodora minor. *Herm. muſ.* 49. *Burm. zeyl.* 172.
Shell globular, depreſſed a little, cruſtaceous, thin, brittle, dirty white, marked with ſuperficial capillary veſſels, regular, not wrinkled. Seed globular, wrinkled with tubercles, brown bay. Albumen void of ſcent, of a white ſuety ſubſtance, that may be grated, appearing as if it had been chewed by the reddiſh-bay proceſſes of the integument, and having a very void ſpace in the middle. Embryo at the bottom of this cavity, ſmall, greeniſh: cotyledons ovate, fleſhy-foliaceous, flattiſh, from horizontal ſpreading, radicle conical, inferior.—Native of Ceylon.

3. Myriſtica Iriaghedhi. *Gærtn.* 196. *t.* 41. *f.* 4.
Iriaghedi. *Lin. zeyl. n.* 590.
Nux moſchata ſpuria, quæ pſeudo nux moſchata zeylanica. *Herm. muſ.* 58.
N. moſch. ſp. ſylveſtris, caryophylli arboris fol. oppoſitis. *Burm. zeyl.* 173. *t.* 79.
Shell ovate-oblong, very like the preceding in its whole ſtructure. Seed of the ſame ſhape with the ſhell, deeply ſtriated and wrinkled, brick-coloured, when it is moiſtened, of a bright vermilion. Albumen very much ruminated or chewed, elegantly variegated with white and red, having no ſmell: the white part is ſuety and may be grated; the red is branny and friable. Embryo like the preceding.—Native of Ceylon.

PROPAGATION AND CULTURE.

The Nutmeg-tree not having been yet introduced among us, we cannot give any particular directions for the ſtove culture of it. In its native ſoil, it grows in woods, and ſeems to be propagated by birds. We have no inſtruction for the culture of it in the Eaſt or Weſt Indies, where it has been introduced, farther than what we are told by the French gardener in iſle Bourbon: that what he calls the Royal and Queen Nutmegs are the only trees that always bear, and conſequently the only ones to be planted; and that their produce is as ſure as if they were hermaphrodite trees. The kernel of the firſt will produce only a male or barren tree; but the nut of the latter will always produce a fruitful one. So that if planters have one hundred Queen Nutmegs, and one Royal one, they will be ſure of having one hundred fruiting trees, and one

[c] Mary's Review for aug. 1783.
[d] Rochon's Madagaſcar.
[e] Vol. *t.* 269.
[f] Aublet.

male

male tree to fecundate them. Without attending to this, they might have had a great quantity of male trees to a ſmall quantity of females; and they would not have diſcovered the miſtake till after five or ſix years, when the trees came to flower.

MYRMECIA. (*Μυρμηκια is an Ant's neſt.*)
Lin. gen. Schreb. n. 177. Tachia. *Aubl. guian.* 75. *t.* 29. *Juſſ.* 142.
Claſſ. 4. 1. Tetrandria Monogynia.
Nat. order of *Gentianæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed; tubular, long, five-toothed: toothlets erect, acute.
COR. one-petalled: *tube* long: *opening* inflated: *border* five-cleft; ſegments ovate, acute, revolute.
Nectary five ſmall glands ſurrounding the baſe of the germ.
STAM. *Filaments* four, filiform, inſerted at bottom into the tube, and longer than it. *Anthers* linear, erect.
PIST. *Germ* oblong, ſuperior. *Style* filiform, longer than the ſtamens. *Stigma* bilamellate.
PER. *Capſule* long, two-celled, two-valved, covered by the permanent calyx.
SEEDS numerous, very ſmall, viſcid, adhering to the partition.

ESSENTIAL CHARACTER.

Cal. tubular, five-toothed. *Cor.* one-petalled, with an inflated mouth, and five-cleft border. *Germ* with five glands at the baſe. *Stigma* bilamellate. *Capſ.* two-celled, two-valved, many-ſeeded.

SPECIES.

1. Myrmecia Tachia.
Lin. ſyſt. ed. Gmel. 247.
Tachia. *Aubl. guian.* 75. *t.* 29.

DESCRIPTION, *&c.*

This is a ſhrub with a trunk of five or ſix feet in height, thick at the baſe, and gradually diminiſhing as it aſcends: it throws out here and there long, rough, four-cornered branches, which are oppoſite and tubular: at each knot of theſe branches grow two oppoſite leaves diſpoſed croſſways: they are ovate, ſharp, perfectly entire, ſmooth, ſubſeſſile, and embrace the ſtem. From the boſom of one or other of theſe leaves proceeds a ſeſſile flower, of a yellow colour. It generally happens that at the boſoms of thoſe leaves which do not produce flowers a tear of yellow reſin makes its appearance. The hollow trunk and branches of this ſhrub are commonly the retreat of a great many ants, for which reaſon it is called by the natives by the name of Tachi, which is ſaid to ſignify an ant's-neſt.

MYROBALANUS. See *Phyllanthus* and *Spondias*.
MYROBATINDUM. See *Lantana*.
MYRODENDRUM. (*Μυρον μυρου ointment, and δενδρον a tree.*)
Lin. gen. Schreb. n. 901. Houmiria. *Juſſ.* 435.
Houmiri. *Aubl. guian.* 564. *t.* 225.
Claſſ. 13. 1. Polyandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-toothed, acute.
COR. *Petals* five, oblong, acute, ſpreading, much larger than the calyx.
STAM. *Filaments* twenty, capillary, inſerted into the receptacle. *Anthers* roundiſh.
PIST. *Germ* roundiſh, ſmall, ſuperior. *Style* long, curved inwards, villoſe. *Stigma* capitate, five-lobed.
PER. five-celled.
SEEDS ſolitary.

ESSENTIAL CHARACTER.

Cor. five-petalled, ſpreading, much larger than the five-toothed calyx. *Stigma* capitate, five-lobed. *Per.* five-celled, with one ſeed in each cell.

SPECIES.

1. Myrodendrum balſamiferum.
Lin. ſyſt. ed. Gmel. 817.
Houmiri balſamifera. *Aubl. guian.* 564. *t.* 225.

DESCRIPTION, *&c.*

A tree of fifty or ſixty feet high, and two feet in diameter. The bark thick, reddiſh, and rough: the wood hard and brown: it throws out from the top ſeveral large branches, which divide into branchlets beſet with alternate, entire, ſmooth, green, firm, long leaves, terminating in a point. Theſe leaves are largeſt at their baſe, where they partly embrace the branchlets: the young leaves are reddiſh: thoſe of the young trees are ſix inches long, and two broad. The flowers are borne in heads or cluſters from the boſoms of the leaves at the extremities of the branchlets, and are of a white colour.

The bark of this tree affords a red balſamic fluid reſembling Styrax in ſcent: this liquor after it has exuded from the bark becomes hard, brittle, and tranſparent; and when burnt affords a very agreeable odour. The negroes and the natives of Guiana uſe the bark for the purpoſe of ſtips to make flambeaux. The natives alſo uſe the wood in building their houſes. The tree is called Red-wood by the Creoles, and by others is called Houmiri, and Touri. It grows in the foreſts of Guiana. The reſin, according to Aublet, might be uſed medicinally in the ſame manner as the Balſam of Peru.

MYRODIA. (*Unguentorum odor. From μυρον, and οζω, to ſmell. Smelling of perfumes.*)
Lin. gen. Schreb. n. 1147. *Swartz prodr.* 102. Quararibea. *Aubl. t.* 278. *Cavan. diſſ.* 3. 175. *t.* 71. *f.* 2. *Juſſ.* 274.
Claſſ. 16. 1. Monadelphia Polyandria.
Nat. order of *Columniferæ*. *Malvaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, turbinate-urceolate, coriaceous, toothleſs, burſting at top into unequal teeth, permanent.
COR. *Petals* five, inſerted into the receptacle, narrower below, oblong, oblique, blunt, from ſpreading recurved, longer than the calyx.
STAM. *Filaments* uniting into a long ſlender tube, widening at top, plaited-five-toothed, ſheathing the ſtyle. *Anthers* nine to fourteen, kidney-form, cluſtered towards the top of the tube, ſeſſile.
PIST. *Germ* ovate, in the baſe of the calyx. *Style* filiform, thickened at top, plaited, a little longer than the filaments. *Stigma* large, capitate or two-lobed.
PER. *Drupe* ſubglobular, dry, ſtipaceous, with a retuſe top, umbilicate with the remains of the ſtyle, two-celled or three-celled.
SEEDS ſolitary, angular on one ſide, convex on the other.

ESSENTIAL CHARACTER.

Cal. ſingle, one-leafed. *Cor.* five-petalled. *Piſt.* one. *Column* of anthers undivided. *Drupe* dry, incloſing two nuts.

SPECIES.

1. Myrodia turbinata.
Swartz prodr. 102.
Leaves elliptic, calyxes turbinate ſomewhat ſilky within.
2. Myrodia longiflora.
Swartz prodr. 103.
Quararibea guianenſis. *Aubl. guian.* 692. *t.* 278. *Cavan. diſſ.* 3. 175. *t.* 71. *f.* 2.
Leaves oblong, calyxes cylindric villoſe within, column of ſtamens very long.

DESCRIPTIONS, *&c.*

1. Native of the Weſt Indies, as Monſerrat, St. Lucia and St. Chriſtophers. The anthers are fourteen in number.

2. This is a ſhrub about ſix feet high, with a trunk of three or four inches in diameter; the bark is grayiſh and chapped: the wood white and of a ſlight texture: the ſhrub emits long, ſtraight, flexible, divided branches, garniſhed with ſmooth, alternate, green, entire, ſmooth, weak leaves: their footſtalk is ſhort, ſwoln, cylindric, and accompanied by two ſtipules which fall off ſoon: the largeſt leaves are about nine inches long, and three broad. The flowers ſpring from the boſom of the leaves, or even from the footſtalks themſelves, and are three, four or five in number: theſe footſtalks are often marked with ſmall greeniſh ſcales. The flowers are white. It is a native of Guiana, and grows on the banks of rivers, flowering in may.

MYROSMA. (*Μυρος οσμη, the ſmell of perfume.*)
Lin. gen. Schreb. n. 6. *Juſſ.* 63.
Claſſ. 1. 1. Monandria Monogynia.
Nat. order of *Scitaminæ*. *Cannæ*, Juſſ.

GENERIC

GENERIC CHARACTER.

CAL. *Perianth* superior double: *outer* three-leaved: *leaflets* equal, membranaceous, oblong, channelled, quite entire: *inner* three-parted; *segments* equal, spreading, oblong, quite entire, with a dusky spot at the top.

COR. one-petalled, unequal: *tube* very short; *border* five-parted; the two upper segments shorter, oblong, unequally emarginate; the three lower longer, trifid at the top and gashed; the middle one shorter.

STAM. *Filament* one, free or growing to the margin of the middle division of the lower segment of the corolla, membranaceous at the base, awl-shaped. *Anther* ovate, compressed.

PIST. *Germ* three-sided, inferior. *Style* thick, bent down, short, three-cornered, cloven longitudinally, hirsute before. *Stigma* open, with the lip dilated.

PER. *Capsule* three-celled, three-valved, three-cornered.

SEEDS several, angular.

ESSENTIAL CHARACTER.

Cal. double: outer three-leaved, inner three-parted. *Cor.* five-parted, irregular. *Caps.* three-cornered, three-celled, many-seeded.

SPECIES.

1. Myrospma cannæformis.
Lin. suppl. 80. *syst.* 51. *ed. Willd.* 13.

DESCRIPTION, *&c.*

This is a shrub growing like the Canna. Root horizontal, ascending obliquely at top, fleshy, ovate, short, slightly compressed as in Amomum, girt with rings, covered with alternate, embracing, ovate, appressed, broad, fibrous sheaths. Leaves oval, smooth, veined; the lower one with elongated, dilated, radicate petioles, forming the stem; the upper ones with petioles out of the stem. The petioles thus elongated become slender, compressed, channelled longitudinally, but towards the insertion of the leaf they are elevated into a cylindrical ring, hairy in front, curving the leaf inwards a little. Stems or scapes round, somewhat hairy, ending in a joint, whence springs a leaf very like the stem-leaves, and a peduncle involved in the sheath of the petiole. Peduncle solitary, scarcely longer than the petiole, round. Raceme like the ament of a Hop, imbricate with the alternate scales of the bractes. Bractes two-leaved, two-flowered: outer leaf wider, ovate, membranaceous, embracing; inner shorter, narrower, oblong[a].

This genus is allied to *Physurus* (Pontederia ovata), but it differs in the fruit[b].

Native of Surinam.

MYROSPERMUM. See *Myroxylum*.

MYROXYLON. Forst. See *Xylosma*.

MYROXYLUM. (*From μυρον, and ξυλον wood. Scent-wood.*)
Lin. suppl. 34. *Lin. gen. Schreb. n.* 709.
Myospermum. *Jacqu. amer.* 120. *Juss.* 365.
Class. 10. 1. Decandria Monogynia.
Nat. order of *Lomentaceæ. Leguminosæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-shaped, five-toothed, permanent, with very small obsolete teeth.

COR. *Petals* five, unequal, inserted into the receptacle; the uppermost wide, ovate, obcordate, reflex; the rest narrow-lanceolate, straight, scarcely spreading: *claws* narrow, linear, the length of the calyx.

STAM. *Filaments* ten, filiform, smooth, pressed to the germ, the length of the calyx. *Anthers* erect, lanceolate, grooved, terminating in a short point.

PIST. *Germ* superior, longer than the flower, hanging down from it, sabre-shaped, compressed. *Style* ascending, short, filiform. *Stigma* blunt, simple.

PER. *Legume* sword-shaped, narrowed at the base, widening towards the top, ancipital, not opening.

SEED single, round, compressed, in the top of the legume.

ESSENTIAL CHARACTER.

Cal. bell-shaped. *Pet.* five, the uppermost larger. *Germ* longer than the corolla. *Legume* one-seeded.

SPECIES.

1. Myroxylum peruiferum.
Lin. syst. 395. *suppl.* 233.

[a] Linn. suppl. [b] Willdenow.

Myrospermum frutescens. *Jacqu. amer.* 120. *pict.* t. 118.
Hoitziloxid. *Hern. mex.* 51. *ic.*
Gabureida. *Pis. bras.* 57. 119.

DESCRIPTION, *&c.*

This is a very beautiful tree, with a smooth thick bark, which is very resinous, as all parts of the tree are. Leaves alternate abruptly pinnate. Leaflets in two pairs, mostly opposite, ovate-lanceolate, with the end produced, blunt, emarginate; they are entire, veined and very smooth: rachis running along the whole length of the lower surface of the leaf, rather pubescent: common petiole round, pubescent. Racemes axillary, erect, pointing one way, longer than the leaves; peduncle roundish, pubescent; flowers scattered. Bracte supporting each peduncle, very small, ovate, erect, concave, appearing to the naked eye to be a tubercle. Pedicels erect. Calyx hoary green, on the outside of the orifice surrounded by the petals and anthers which are white, within containing the green legume, and having a singular appearance. The substance of the leaves is full of linear dots, which are transparent and resinous.

The Balsam of Peru is the produce of this tree. The elder Linnæus could never obtain a satisfactory answer to the enquiries which he made concerning the tree that yielded this balsam; at length it was discovered by Joseph Cælestine Mutis in the honest provinces of South America, and he sent a branch of it in flower to the younger Linnæus about the year 1781[a].

According to Jacquin, it is an inelegant shrub, not much branched, erect, eight or ten feet in height. Leaves pinnate, alternate, eight inches long, deciduous, on the younger branches. Leaflets commonly three pairs with an odd one, oblong, blunt, quite entire, smooth, alternate, an inch long, on a short petiole. Racemes loose, terminating, erect, simple or bifid; pedicels one-flowered, erect. Corolla whitish rose-colour, without any scent. Membrane of the fruit veined, large, brownish gray. Seed commonly one, seldom two arriving at maturity, a few more are abortive; the seeds and the cell yield a balsam that has a strong unpleasant smell, whence Jacquin gave this tree or shrub the name of *Myrospermum* or Balsam-seed. He found it growing abundantly in open coppices at the foot of the mountain de la Popa near Carthagena.

MYRRHA. See *Cicuta*.]

MYRRHIS. See *Athamanta, Chærophyllum, Scandix, Sium*.

[MYRSINE. (*Myrsinum of Pliny. Myrsine of Dioscorides.*)
Lin. gen. n. 269. *Reich. n.* 289. *Schreb. n.* 369. *Gærtn. t.* 59. *Juss.* 152.
Class. 5. 1. Pentandria Monogynia.
Nat. order of *Bicornes. Sepiariæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, small: *leaflets* suborate, permanent.

COR. one-petalled, half-five-cleft: *segments* half-ovate, converging, blunt.

STAM. *Filaments* five, scarcely visible, inserted into the middle of the corolla. *Anthers* awl-shaped, erect, shorter than the corolla.

PIST. *Germ* subglobular, almost filling the corolla. *Style* cylindric, longer than the corolla, permanent. *Stigma* large, woolly, hanging on the outside of the flower.

PER. *Berry* roundish, depressed, one-celled.

SEED one, subglobular, fixed obliquely to the bottom of the berry. *G.*

OBS. *Unity is frequently subtracted in all parts of the fructification.*
The unripe berry has few seeds, but when ripe it has only one.

ESSENTIAL CHARACTER.

Cor. half-five-cleft, converging. *Germ* filling the corolla. *Berry* one-seeded, with a five-celled nucleus.

[a] Linn. suppl.

SPECIES.

1. Myrſine africana. *African Myrſine.*
Lin. ſpec. 285. *fiſt.* 236. *Reich.* 1. 551. *hort. cliff.* 72. *Berg. cap.* 53. *Ziun. goett.* 202. *Fabric. helmſt.* 407.
M. glabra. *Gærtn. fruct.* 1. 282.
Vitis idæa æthiopica, myrti tarentinæ folio, flore atro-purpureo. *Comm. hort.* 1. 123. *t.* 164.

Buxus africana rotundifolia ſerrata. *Pluk. phyt. t.* 80. *f.* 5.

Frutex æthiopicus baccifer, foliis myrtilli. *Breyn. cent.* 9. *t.* 5. *Raii hiſt.* 1636. & 1504. *lin. ult. & penult.*
Leaves elliptic acute.

2. Myrſine retuſa. *Round-leaved Myrſine* or *Tamoja.*
Ait. hort. kew. 1. 271.
M. ſcabra. *Gærtn. fruct.* 1. 282.
Leaves obovate retuſe emarginate-toothletted at top.

DESCRIPTION, *&c.*

1. Flowers axillary, in threes, on ſhort peduncles. Corolla pale, rugged with teſtaceous dots; ciliate, cloſed. Stamens oppoſite to, not alternate with, the ſegments of the corolla. Stigma pencil-ſhaped. Berry of the ſame form and ſhape with that of Uva urſi, blue. Nucleus of the ſame ſhape, globular, depreſſed a little [a]. Gærtner deſcribes the berry as globular, depreſſed, pulpy, very dark blue with a bloom on it, ſmooth, one-celled. Rind before it is fully ripe ſubcoriaceous, eaſily ſeparating from the inner fleſhy ſpongy ſubſtance, but afterwards very thin and cohering with the pulp. Seeds regularly five, placed round the receptacle in a ring, but only one or at moſt two ripening; that is globular, depreſſed, or hemiſpherical, hollowed near the umbilicus, the reſt ſmooth, ruſeſcent, and very minutely dotted [b].

Native of the Cape of Good Hope. Cultivated in 1691, in the Royal garden at Hampton-court. It flowers from march to may.

2. Native of the Azores, where it was found by Mr. Francis Maſſon. It was introduced in 1788, and flowers in june [c].

Berries the ſize of red Currants, ſpherical, rugged all over with ſmall tubercles. Rind ſubcoriaceous, not coloured, pale or inclined to ſtraw-colour; in other reſpects like the preceding, only every thing ſmaller [d].

MYRSINITES. See *Euphorbia.*
MYRTI AFFINIS. See *Liquidambar.*
MYRTIFOLIA. See *Celaſtrus.*
MYRTI FOLIO. See *Myrtus.*
MYRTILLUS. See *Vaccinium.*
MYRTLE. See *Myrtus.*
——— Candleberry, and Dutch. See *Myrica.*
MYRTLE-LEAVED SUMACH. See *Coriaria.*
MYRTOIDES. See *Myrtus.*
MYRTO-CISTUS. See *Hypericum.*
MYRTO-GENISTA. See *Sophora.*

MYRTUS (*of Pliny and other Latin authors. Μυρτος of Ariſtotle and other Greek authors. Myrtum of Galen, Plutarch, &c. Μυρτον in Athenæus, Plato, Ariſtophanes. Fabled to be ſo named from Myrſine an Athenian damſel, and favourite of Minerva, who was metamorphoſed into this ſhrub.*)
Lin. gen. n. 617. *Reich. n.* 672. *Schreb. n.* 844. *Tournef. t.* 409. *Juſſ.* 324. *Gærtn. t.* 38. Murcia. *Fl. zeyl.* 87. Gireggia. *Seland. Gærtn. t.* 33. Mouirin. *Aubl. t.* 180.
Claſſ. 12. 1. Icoſandria Monogynia.
Nat. order of *Hesperideæ. Myrti*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, foue or five-cleft, bluntiſh, ſuperior, raiſed internally into a ſubvilloſe ring, permanent.
COR. *Petals* foue or five, ovate, entire, large, inſerted into the calyx.
STAM. *Filaments* very many, capillary, the length of the corolla, inſerted into the calycine ring. *Anthers* roundiſh, ſmall.
PIST. *Germ* inferior, two-celled or three-celled; the ſeeds fixed to the partition. *Style* ſimple, filiform. *Stigma* blunt.
PER. *Berry* oval, umbilicated with the calyx, one, two or three-celled.
SEEDS few, kidney-form.

ESSENTIAL CHARACTER.

Cal. five-cleft, ſuperior. *Pet.* five. *Berry* two or three-celled. *Seeds* ſeveral, gibbous.

SPECIES.

1. Myrtus communis. *Common Myrtle.*
Lin. ſpec. 673. *Reich.* 2. 476. *hort. cliff.* 42. *upſ.* 123. *mat. med.* 122. *Gærtn. fruct.* 1. 184. *Stop. carn. n.* 584. *Alſton. pedem. n.* 1791.
α. M. romana. *Common broad-leaved Myrtle.*
Mill. fig. 123. *t.* 184. *f.* 1. *Knipb. cent.* 4. *n.* 52. *Pluck. it.* 374.
M. latifolia romana. *Bauh. pin.* 468.
M. altera. *Dod. pempt.* 772.
β. M. tarentina. *Box-leaved Myrtle.*
Mill. dict. n. 6. *Bauh. hiſt.*
M. minor vulgatis. *Bauh. pin.* 469. *Raii hiſt.* 1503.
M. minor. *Ger. emac.* 1412. *f.* 5.—& rotundiore folio. *Park. parad.* 427. 2. 3. *fig.* 429. 3.
γ. M. italica. *Italian* or *upright Myrtle.*
Mill. dict. n. 5.
M. communis italica. *Bauh. pin.* 468. *Raii hiſt.* 1502.
δ. M. boetica. *Orange-leaved Myrtle.*
Mill. dict. n. 4.
M. latifolia boetica 2. *Bauh. pin.* 469. *Cluſ. hiſt.* 1. 65. *Ger. emac.* 1411. *f.* 2. *Blackw. t.* 114.
ε. M. luſitanica. *Portugal Myrtle.*
M. acuta. *Mill. dict. n.* 3.
M. ſylveſtris fol. acutiſſimis. *Bauh. pin.* 469. *Cluſ. hiſt.* 1. 66. *f.* 1.
ζ. M. belgica. *Broad-leaved Dutch Myrtle.*
Mill. dict. n. 2.
M. latifolia belgica. *Bauh. pin.* 469.
η. M. mucronata. *Roſemary-leaved Myrtle.*
M. minima. *Mill. dict. n.* 7.
M. fol. minimis & mucronatis. *Bauh. hiſt.* 469. *Cluſ. hiſt.* 1. 67.
Flowers ſolitary, involucres two-leaved.

[2. Myrtus tomentoſa. *Woolly-leaved Myrtle.*
Ait. hort. kew. 2. 129. *Vahl ſymb.* 2. 56. *Curt. magaz.* 250. *Pluk. amalth.* 211. *t.* 372. *f.* 1.
M. canelcens. *Lour. cochinch.* 311.
Peduncles one-flowered, leaves triple-nerved tomentoſe underneath.

3. Myrtus alpina. *Alpine Myrtle.*
Swartz prodr. 77.
Peduncles ſolitary terminating one-flowered very ſhort; leaves ovate, branchlets in ſcurf liſtiginate, ſtem arborescens.

4. Myrtus procera. *Tall Myrtle.*
Swartz prodr. 77.
Peduncles cluſtered axillary one-flowered, leaves ovate acuminate flat ſmooth, branches rod-like, ſtem arborescens.

5. Myrtus liguſtrina. *Privet Myrtle.*
Swartz prodr. 78.
Peduncles ſolitary and branched terminating one-flowered, leaves lanceolate blunt convex lucid.

6. Myrtus crenulata. *Notch-leaved Myrtle.*
Swartz prodr. 78.
Peduncles ſolitary axillary commonly three-flowered, leaves roundiſh crenulate ſmooth.

7. Myrtus cerafina. *Cherry Myrtle.*
Vahl ſymb. 2. 57.
Arbor baccifera myrti folio latiore, fructu nigro cerafino dipyreno. *Sloan. jam.* 2. 107. *Raii dendr.* 66.
Peduncles lateral and terminating one-flowered, leaves oblong ſhining glutted underneath.

8. Myrtus tenuifolia. *Fine-leaved Myrtle.*
Smith in Linn. tranſ. 3. 280.
Peduncles axillary ſolitary one-flowered, leaves linear mucronulate.

9. Myrtus braſiliana. *Braſilian Myrtle.*
Lin. ſpec. 674. *Reich.* 2. 477. *Plum. ſpec.* 18. *t.* 207. *f.* 1.
Flowers ſolitary, peduncles naked, petals ſubciliate.]

[a] Linn 678. [b] Gærtn. 282. [c] Hort. kew. [d] Gærtner.

10. Myrtus biflora. *Two-flowered Myrtle.*
Lin. spec. 674. *Reich.* 2. 478. *amoen.* 5. 398. *Browne. jam.* 238. *t.* 25. *f.* 3.
Caryophyllus truncatus. *Mill. dict. n.* 3.
Pedunckles two-flowered, leaves lanceolate.

[11. Myrtus trinervia. *Three-nerved Myrtle.*
Smith in Linn. transf. 3. 280.
Pedunckles axillary three-flowered, leaves ovate acuminate three-nerved tomentose underneath.

12. Myrtus angustifolia. *Narrow-leaved Myrtle.*
Lin. fil. 471. *Reich.* 2. 478. *mant.* 74. *Burm. afr.* 237. *t.* 83. *f.* 2. (Phillyrea).
Pedunckles umbelled, leaves linear-lanceolate subsessile.

13. Myrtus laevis. *Smooth Myrtle.*
Linn. fil. 461. *Thunb. jap.* 198.
Pedunckles umbelled, leaves ovate acuminate.

14. Myrtus lucida. *Shining Myrtle.*
Lin. spec. 674. *Reich.* 2. 478.
Pedunckles subtrifferous, leaves subsessile lanceolate attenuated.

15. Myrtus Cumini.
Lin. spec. 674. *Reich.* 2. 478. *fl. zeyl. n.* 185.
Jambosa ceramica. *Rumph. amb.* 1. 130. *t.* 41. *Burm. ind.* 117.
Arbor zeylanica cuminum redolens. *Burm. zeyl.* 27.
Pedunckles many-flowered, leaves lanceolate-ovate.

16. Myrtus linearis.
Swartz prodr. 78.
Flowers axillary subsessile, leaves ovate-acuminate rigid marked with lines hoary underneath.

17. Myrtus cordata. *Heart-leaved Myrtle.*
Swartz prodr. 78. *Vahl symb.* 2. 57.
Flowers axillary and lateral subsessile, leaves sessile cordate ovate shining.

18. Myrtus pallens. *Ash-coloured Myrtle.*
Vahl symb. 2. 57.
Racemes terminating pubescent, pedicels one-flowered, leaves broad-lanceolate attenuated dotted above.

19. Myrtus dumosa.
Vahl symb. 2. 57.
Racemes axillary very short, leaves petioled broad-lanceolate acuminate acute.

20. Myrtus buxifolia. *Box-leaved Myrtle.*
Swartz prodr. 78.
Racemulets very short clustered axillary, leaves wedge-shaped oblong blunt somewhat convex.

21. Myrtus glabrata. *Polished Myrtle.*
Swartz prodr. 78.
Racemulets very short axillary many-flowered, leaves elliptic acuminate convex coriaceous very smooth.

22. Myrtus dilitcha.
Swartz prodr. 78.
Pedunckles axillary many-flowered shorter than the leaves, leaves distich bent down ovate-lanceolate, branches spreading.

23. Myrtus monticola.
Swartz prodr. 78.
Pedunckles many-flowered very short axillary solitary, leaves ovate blunted flat very smooth.

24. Myrtus axillaris.
Swartz prodr. 78.
Pedunckles many-flowered very short axillary clustered, leaves ovate-acuminate shining flat.

25. Myrtus Greggii. *Round-leaved Myrtle.*
Swartz prodr. 78. *Ait. hort. kew.* 2. 159.
Greggia aromatica. *Gartn. fruct.* 1. 168.
Pedunckles many-flowered axillary, leaves ovate elliptic acute quite entire pubescent underneath.

26. Myrtus dioica.
Lin. spec. 675. *Reich.* 2. 479.
Pedunckles trichotomous-panicled, leaves oblong, flowers dioecious.

27. Myrtus virgultosa.
Swartz prodr. 79. *Vahl symb.* 2. 58. *Plum. ic.* 208. *f.* 1.
Pedunckles axillary and terminating panicled or racemed, leaves broad-lanceolate attenuated.

28. Myrtus splendens.
Swartz prodr. 79.
Pedunckles axillary solitary trichotomous, leaves elliptic acuminate flat veined fearless shining, branches rod-like.]

29. Myrtus zeylanica. *Ceylon Myrtle.*
Lin. spec. 675. *Reich.* 2. 479. *fl. zeyl. n.* 182. *Vahl symb.* 2. 58. *Lour. cochinch.* 312? *Herm. lugdb.* 234. *t.* 235. *suppl.* 65. *Burm. ind.* 115. *zeyl.* 166. 230. *Raii hist.* 1504.
Myrtoides foliis ovatis. *Lin. hort. cliff.* 489.
Racemes axillary and terminating, pedicels commonly four-flowered, leaves ovate attenuated dotted above.

30. Myrtus androsaemoides.
Lin. spec. 675. *Reich.* 2. 479. *fl. zeyl. n.* 184. *Vahl symb.* 2. 58. *Lour. cochinch.* 312.
Racemes axillary and terminating subcompound, pedicels three-flowered, leaves ovate-oblong fessile.

31. Myrtus caryophyllata.
Lin. spec. 675. *syst.* 462. *Reich.* 2. 480. *fl. zeyl. n.* 183. *mat. med.* 122. *Swartz obs.* 202.
Pedunckles trichotomous terminating, calyxes undivided, leaves ovate-lanceolate undotted.

32. Myrtus acris.
Swartz prodr. 79.
M. caryophyllata. *Jacq. obs.* 2. 1. *t.* 25. *amer. pict.* 76.
Caryophyllus 1. *Brown. jam.* 247. *Pluk. phyt. t.* 155. *f.* 3.
Pedunckles axillary and terminating corymbed trichotomous longer than the leaves, leaves elliptic convex coriaceous veined dotted, stem arborescent.]

33. Myrtus coriacea. *Sumach-leaved Myrtle.*
Swartz prodr. 79. *Vahl symb.* 2. 59.
Myrtus cotini folio. *Plum. ic. t.* 208. *f.* 2.
Caryophyllus cotinifolia. *Mill. dict. n.* 4.
Pedunckles trichotomous terminating, leaves roundish-elliptic convex coriaceous veinless dotted shining on both sides.

[34. Myrtus fragrans. *Fragrant Myrtle.*
Swartz prodr. 79. *Vahl symb.* 2. 59.
Eugenia montana. *Aubl. guian.* 495. *t.* 195.
Pedunckles axillary trichotomous and simple, leaves ovate slightly convex somewhat coriaceous dotted smooth, stem arborescent.

35. Myrtus chinensis. *Chinese Myrtle.*
Lour. cochinch. 315.
Pedunckles many-flowered, leaves ovate lanceolate serrate hairy.]

36. Myrtus Pimenta. *Pimento, Jamaica Pepper,* or *All-spice.*
Lin. spec. 676. *syst.* 462. *Reich.* 2. 480. *fl. zeyl. n.* 186. *hort. cliff.* 501. *mat. med.* 122. *Woodv. med. bot.* 77. *t.* 26. *Gaertn. fruct.* 185. *Swartz obs.* 202. *Sloan. jam.* 2. 76. *t.* 191. *f.* 1. *Plenck. ic. t.* 375.
Caryophyllus Pimento. *Mill. dict. n.* 2. *Brown. jam.* 247. 2. *Pluk. phyt. t.* 155. *f.* 4.
Amomum odore Caryophylli. *Bauh. hist.* 2. 195. *Raii hist.* 1507. *Blackw. t.* 355.
α. Long-leaved Pimento.
Leaves oblong-lanceolate acuminate, point blunt.
β. Short-leaved Pimento.
Leaves oval blunt.
Flowers trichotomous-panicled, leaves oblong-lanceolate.

DESCRIPTIONS, *&c.*

[The genus Myrtus is composed of small trees and shrubs. Flowers in some solitary, with two scales at the base and axillary, in others forming opposite corymbs or panicles, axillary or terminating; some are four-petalled with a four-cleft calyx, others have the calyx undivided. The leaves in a very few are sometimes alternate. Perhaps the genus might better be divided from the number of cells in the berry and the situation of the flowers*. Accordingly M. Chytraculia and Syzygium having a one-celled berry are dismissed from this genus, and will be found under that of Calyptranthes.

Dr. Smith observes, that few genera are more confused in the works of Linnæus than this of Myrtus. All that properly belong to it are those that have a corolla of five petals with a five-cleft calyx, and a two-celled or three-celled berry. These characters distinguish it from Eugenia, Psidium and Calyptranthes.

* jelkeu.

The 11th, 18th, 19th, 25th, 29th, 30th, and 36th species have a four-cleft calyx, and four petals to the corolla, but these numbers are by no means constant.

1. The common Myrtle is well known as an elegant evergreen shrub, native of Asia, Africa, and the southern parts of Europe; unfortunately but too tender to abide our winters without some protection in England, except in the most southern and western parts of the island. Trunk irregular, branching, covered with a brown rough scaling bark. Leaves ovate or ovate-lanceolate, entire, smooth on both sides, dark-green paler underneath, opposite and decussated. The flowers come out singly from the axils, and have a two-leaved involucre under them. Corolla white. Berry inferior or below the calyx, subovate, crowned with the permanent calyx, fleshy and spongy, dark purple or black-blue, three-celled. Seeds in each cell four or five, seldom more, kidney-form gibbous, whitish, shining, somewhat bony at the back, the belly filled with a fungous substance, fixed to the inner angle of the cells: they have a single, cartilaginous or somewhat bony, thick cover, no albumen, the embryo conformable to the cavity of the seed, roundish, curved, milk-white: cotyledons semicylindric, short, incumbent: radicle twice the length of the cotyledons, semicircular-curved, inferior[a]. They flower in july and august. The cultivation of the Myrtle in England, is assigned in the Kew catalogue to the year 1629, when Parkinson informs us that he had three sorts (varieties) in his garden; the broad-leaved and two varieties of the box-leaved: Gerarde however, in 1597, says that Myrtles never bear any fruit in England, which surely implies the cultivation of it among us before that period. And Bradley informs us, that the Myrtle was introduced by Sir Francis Carew and Sir Walter Raleigh in 1585, when they resided in Spain, and discovered the preparations for the Spanish Armada against us[b]. Mr. Evelyn also, in the year 1678, says, "I know of one "(a Myrtil) near eighty years old, which has been "continually exposed, unless it be, that in some ex-"ceeding sharp seasons a little dry straw has been "thrown upon it[c]." Perhaps he may allude to the tree at Bedington. But that was the Spanish broad-leaved or Orange-leaved variety, which Miller and Bradley report to have been above eighteen feet high, and to have spread about forty-five feet[d].

Box-leaved and Orange-leaved are said by Johnson (*Ger. emac.* 1233.) to have been nourished in the garden of Mistress Tuggie in Westminster, in 1633.

This shrub was a great favourite among the ancients, for its elegance, and its evergreen sweet leaves. It was sacred to Venus, either on this account, or perhaps because it flourishes most in the neighbourhood of the sea. Myrtle-wreaths adorned the brows of bloodless victors, and were the symbol of authority for magistrates at Athens. Both branches and berries were put into wine, and the latter were used in the cookery of the ancients. The Myrtle was also one of their medicinal plants. All parts of it are astringent, but it is discarded from modern practice.

The principal varieties are erected into species by Mr. Miller. Their differences, as he has given them, are these.]

a. The common broad-leaved or Roman Myrtle grows to the height of eight or ten feet in England, but is much higher in Italy, where it is the principal underwood of some of the forests. The leaves are broader than most of the other varieties, being an inch in breadth; they are an inch and half long, of a lucid green, end in acute points, and are subsessile or on very short foot-stalks. The flowers are larger than those of the other varieties, on pretty long slender peduncles, from two to four at the same axil. Berries ovate or oblong-ovate, very dark purple so that they seem to be black when ripe, including from three to six hard kidney-shaped seeds. This variety is called by some the Flowering Myrtle, because it flowers more freely in England than the others. By others the Roman Myrtle, because it abounds about Rome, where however I did not observe any great quantity of it. The woods between Leghorn and Pisa have Cork-trees for the timber, and Myrtle for the underwood.

β. The Box-leaved Myrtle has the leaves oval, small, sessile, of a lucid green, and ending in obtuse points; the branches weak, and frequently hanging down, when permitted to grow without trimming; the bark is grayish; the flowers are small, and come late in the summer; the berries are small and round.

γ. The common Italian Myrtle has ovate-lanceolate leaves, ending in acute points; the branches grow more erect than in either of the preceding, as do also the leaves, whence it is called by the gardeners Upright Myrtle. The flowers are not large, and the petals are marked with purple at their points, whilst they remain closed. The berries are small, oval and of a purple colour.

There is a variety of this with white berries: and the Nutmeg Myrtle seems to be only a variety of this, several plants raised from the seed of it being so like the Italian Myrtle, as hardly to be distinguished from it.

δ. Orange-leaved, or as it is called by some, bay-leaved Myrtle, has a stronger stalk and branches, and rises to a greater height. The leaves are ovate-lanceolate, in clusters round the branches, and of a dark green. The flowers are of a middling size, and come out sparingly from between the leaves. The berries are oval, and smaller than those of the first. It is not so hardy as that.

ε. The leaves of the Portugal Myrtle are much smaller than those of the next, being less than an inch long, and not more than half an inch broad, lanceolate-ovate acute, of a dull green, and set pretty close on the branches. The flowers are smaller. The berries small and oval.

ζ. The broad-leaved Dutch Myrtle has leaves much less than those of the common sort, and more pointed, standing close together on the branches; the midrib on the under side of the leaves is of a purple colour; they are of a darker green and sit closer to the branches. The flowers are smaller and on shorter peduncles. They come out a little later than the common sort.

The Double-flowering Myrtle is probably a variety of this; the leaves and growth of the plant, the size of the flowers, and the time of flowering agreeing better with this than any of the others.—Mr. Miller, in his plate, has figured the Double Myrtle as a variety of the Italian.

η. Rosemary-leaved, or as some call it Thyme-leaved Myrtle, has the branches growing pretty erect; the leaves small, narrow, acute, sessile, and of a lucid green. Flowers small, appearing late in the season.

The above varieties are constant; others there are which are propagated in the gardens and nurseries for sale, which are less considerable and more variable.

[It may suffice to give the names of these:

1. Gold-striped broad-leaved Myrtle.
2. Broad-leaved Jews Myrtle, having frequently the leaves in threes, on which account it is said to be in esteem among the Jews in their religious ceremonies.
3. Gold-striped Orange-leaved Myrtle.
4. Silver-striped Italian Myrtle.
5. Striped Box-leaved Myrtle.
6. Silver-striped Rosemary-leaved Myrtle.
7. Silver-striped Nutmeg Myrtle.
8. Cock's-comb or Bird's-nest Myrtle.

The Myrtle is a rare instance of the same name prevailing in the Greek and Latin and all the modern European languages, with a very slight difference. Thus in German it is *Myrte* or *Myrtenbaum*; in Dutch, *Myrtus*; in Danish, *Myrter*; in Swedish, *Myrten*; in French, *le Mirte*; in Italian and Spanish, *Mirto*; in Portugueze, *Murta* or *Myrta*.

2. Branches round, tomentose. Leaves an inch and half long, elliptic, blunt, above dark and veined, reflex at the edge, the nerves more conspicuous underneath, smooth above, hoary underneath, on very short petioles. Peduncles axillary and terminating, solitary, opposite, tomentose. Bractes two, small, oblong, at the base of the calyx, which is turbinate and tomentose, with

[a] Gaertner.
[b] Hulls. and Gard. vol. 3. part 2. p. 61.
[c] Sylva, b. 2. ch. 5. p. 174. fol. 1706.
[d] Mill. dict. ed. 1724. Bradl. p. 61.

with four rounded segments. Petals oblong, tomentose-hairy without, purple within [1].

Loureiro thus describes it under the name of M. cauliflora; ſtems ſhrubby, erect, ſix feet high, manifold, ſmooth, whitiſh, even; with ſpreading branches. Leaves ovate, ſometimes acute, quite entire, three-nerved, hoary; on petioles connate with the ſtalk. Flowers purpliſh, ſolitary, ſcattered, having a large, berried, five-cleft calyx, with rounded, ſpreading, unequal ſegments, and an involucre of two ſmaller leaves underneath. Petals five, roundiſh, ſpreading, longer than the calyx. Stamens nearly equal to the corolla. Berry ovate, crowned, tomentoſe, black-purple, three-celled, with a juicy, blackiſh, ſweet-auſtringent, eſculent pulp, and many, minute, roundiſh ſeeds.

Native of China and Cochinchina. Introduced about 1776, by Mrs. Norman. It flowers in June and July [2].

3. Native of Jamaica.

4, 5, 6. Natives of Hiſpaniola [3].

7. The whole of this ſhrub is ſmooth. Branches round, with an aſh-coloured bark. The young twigs have linear-lanceolate ſcales, at firſt imbricate, but afterwards remote and deciduous. Leaves petioled, an inch long, blunt, the upper ſurface ſomewhat veined and ſhining, with a groove along the middle, the under veinleſs, pale, dotted in cluſters. Peduncles ſometimes four from the ſame bud, uſually axillary oppoſite and terminating, but often below the leaves, one-flowered, filiform, an inch and half long. Segments of the calyx oblong, blunt. Petals oblong, blunt, ſmall, white.—Native of the Caribbee iſlands [4].

The fruit has a very thin black ſkin, with a very ſmall purple ſweetiſh pulp, including two white ſtones, flat on one ſide, convex on the other, together making a ſphere. It is ſo like a black Cherry, that it has that name in Jamaica [5].

8. This is an elegant little ſhrub, with leaves ſomewhat more than an inch in length, and about a line in breadth, ſlightly revolute, downy beneath. Flower-ſtalks ſilky, ſhorter than the leaves, each bearing a ſmall white flower, often tinged externally with red, and not unlike the common Myrtle bloſſom, though ſcarcely half ſo large. Calyx nearly ſmooth. Petals downy. Germ very ſilky.—Native of New South Wales [6].

9. Leaves ovate, obtuſe, petioled, ſmooth. Flowers axillary, on a leafleſs peduncle. Petals four or five, lacerate-ciliate, obovate, concave, reflex. Stamens about forty.—Native of Braſil [7].

This plant ſtands in the latter editions of Linnæus in three different places, being his *Eugenia uniflora*, *Myrtus braſiliana* and *Plinia peduncularis* [8]. See *Eugenia* and *Plinia*.]

10. This riſes with a divided trunk to the height of eight or ten feet, ſending out many oppoſite branches, covered with a gray bark. Leaves ſhorter and rounder at the points, ſmoother and of a firmer texture than in M. Pimenta. The flowers come out from the ſide of the branches between the leaves, on ſlender foot-ſtalks, about an inch in length, two generally from the ſame point. Berries round, of a brighter colour than the Pimenta. The leaves and fruit not having the aromatic flavour of Pimenta are not in uſe.

This tree retaining its leaves, which are of a ſplendent green, all the year, it makes a good appearance; but the flowers being ſmall, and growing thinly upon the branches, do not make any great figure. It is a native of Jamaica, whence Mr. Miller received it, and cultivated it ſome years before 1759.

[Browne ſays, it is a beautiful little ſhrub, riſing commonly to the height of three or four feet, ſometimes more.

11. Leaves large and handſome. Flowers ſmall, generally three together, on ſhort hairy forked flower-ſtalks. Although the teeth of the calyx, and the petals alſo, are generally four only, it is a true Myrtus, and not an Eugenia, the fruit being a berry with many ſhining gibbous curved ſeeds. It has but one cell when ripe, but the germ appears to be divided into two or three cells.—Native of New South Wales [9].

Loureiro has a different ſpecies under the ſame name. He deſcribes it as a tree twelve feet in height, with ſpreading branches. Leaves ovate, acuminate, quite entire, three-nerved, ſmooth on both ſides, petioled. Flowers white, ſubterminating, in long racemes. Calyx berried, four-cleft. Corolla four-petalled. Berry roundiſh, crowned, brown, ſmooth, one-celled, with a few, unequal, angular ſeeds. The berries are ſcarcely half an inch in diameter, and are eatable.—Native of Cochinchina.

12. This reſembles M. biflora. It is a ſmall tree with round branches and ſquare ſmooth twigs. Leaves like thoſe of Phillyrea angustifolia, ſubſeſſile, long, linear-lanceolate, quite entire, ſmooth, ſeveral times longer than the internode. Peduncles lateral, oppoſite, ſhort, ſcarcely longer than the internode, having an umbellet at top uſually ſimple, ſeldom compound, ſmall, many-flowered. Petals roundiſh. Stamens erect, briſtle-ſhaped, longer than the petals.—Native of the Cape of Good Hope [10].

13. Stem ſhrubby, entirely ſmooth. Branches and branchlets alternate, erect. Leaves from the alternate buds, ſingle in pairs or in threes, ſharply ſerrate, veined, ſmooth on both ſides, pale underneath, ſpreading, unequal, an inch long and more, on petioles half a line in length. Flowers on the branchlets terminating, in a ſimple umbel. Peduncles filiform, warted with ſcars, an inch long. Perianth five-toothed, ſmooth. Berry two-celled or three-celled, with one ſeed in each cell. It is nearly allied to *Crataegus villoſa* and *Levis*. From the firſt however it differs in being wholly ſmooth, in having one piſtil, and aggregate leaves: from the ſecond, in having one piſtil, and ovate ſlender leaves, longly acuminate.—Native of Japan [11].

14. The leaves are of a ſingular ſtructure, being from ovate remarkably attenuated into a lanceolate top. Flowers five-petalled.—Native of Surinam [12].

15. This is a tree with round, aſh-coloured branches. Leaves lanceolate or ovate-lanceolate, ſmooth, quite entire, not very acute, on longiſh petioles. Corymbs trifid, compound, lateral [13].—Native of the Eaſt Indies.

16. Native of Hiſpaniola [14].

17. Branches aſh-coloured, ſmooth, as is the whole plant, compreſſed at top. Leaves an inch long, ſomewhat leathery, margined, very blunt and ſmooth, veined, dotted underneath and paler. Flowers axillary and on the leafleſs branches, ſeſſile, three or four on each ſide [15].—Native of the Weſt Indies.

18. Branches round, aſh-coloured, compreſſed a little at top. Leaves two inches long, blunt, ſomewhat coriaceous, very ſmooth and even, veinleſs, having a groove along the middle, and a nerve within the edge as in M. zeylanica. Petioles very ſhort, purpliſh. Peduncles in pairs, ſcarcely half an inch long, villoſe aſh-coloured. Pedicels the ſame colour, and a little longer than the peduncle; decuſſated, commonly one-flowered. One ovate minute bracte at the baſe of each pedicel, and two others very like it at the baſe of the calyx; which is villoſe aſh-coloured and coriaceous, with four oblong ſegments. Petals twice as long as the calyx, very minutely ciliated. Stamens the length of the petals.

19. Branches with a coated chinky bark. Leaves two inches long, membranaceous, with numerous, ſimple, tranſverſe veins, having a longitudinal nerve within the edge on each ſide, paler underneath, on ſhort petioles; the young ones are villoſe-ſilky. Racemes ſolitary or in pairs oppoſite, ſcarcely a quarter of an inch in length, four-flowered. Pedicels one-flowered, oppoſite. A minute bracte at the baſe of each pedicel, and two minute ones at the baſe of the calyx; which is oblong, ſubvilloſe, with oblong ſegments, almoſt the length of the germ. Petals four.—It differs from M. glabrata of Swartz in having flat membranaceous leaves, and few-flowered racemes: from M. diſticha of the ſame author, by its few-flowered pedicels, and leaves not

[1] Vahl. [2] Hort. kew. [3] Swartz. [4] Vahl. [5] Sloane. [6] Smith in Linn. trans. [7] Linn. ſpec. [8] Smith in Linn. trans. [9] Idem. [10] Linn. amæn. [11] Thunberg. [12] Linn. ſpec. [13] Linn. ſuppl. [14] Swartz. [15] Vahl.

not bent down. This and the preceding are natives of South America, and were communicated to Vahl by Mr. Forsyth [a].

20. Native of the West Indies.

21. Native of Hispaniola.

22, 23, 24. Natives of Jamaica.

25. Calyx four-parted, with rounded, concave segments. Corolla four-petalled. Germ two-celled. Berry one-celled, obovate-globular, rugged with dots, coriaceous, pale straw-colour. Seed one, large, kidney-oblong, fleshy. Cotyledons so entangled together that they can scarcely be separated"—Native of Antigua, Barbados, Dominica. Introduced in 1776 by John Greg, Esq.[b]

26. Leaves thick. Pedunicles axillary and terminating, brachiate-panicled, the length of the leaves. Petals few.—Native of America. Communicated to Linnæus by Miller [c].

27. Branches rod-like, smooth, with an ash-coloured bark, the young ones villose. Leaves petioled, an inch and half or more in length, sharpish at the base, smooth above and shining, pale underneath and veined; the younger ones somewhat downy above. Peduncles paniculate, in pairs from each axil, shorter by half than the leaves. Pedicels opposite, remote, a quarter of an inch long, filiform, one-flowered. Bractæ ovate, minute, at the base of each pedicel, and two under each calyx. Flowers small. Segments of the calyx rounded, ash-coloured at the base. Petals twice as long as the calyx, downy [d].—Native of Jamaica, Santa Cruz, &c.

28. Native of Hispaniola [e].

29. This has a strong upright stalk, covered with a smooth gray bark, dividing towards the top into many slender stiff branches. Leaves near two inches long, and an inch and quarter broad, of a lucid green, and on very short foot-stalks. The flowers come out at the ends of the branches, several on one common peduncle, which branches out; and each flower stands on a very slender pedicel: they are very like the flowers of the Italian Myrtle.

[Branches round, ash-coloured: branchlets compressed, purplish, subalternate. Leaves on very short petioles; sometimes subalternate, an inch and half long, subcoriaceous, blunt, veinless, very smooth, having a longitudinal groove in the middle. Peduncles opposite, four-cornered, two inches long, smooth, having raised wandering dots: pedicels opposite, four-cornered, remote, scarcely half an inch long; flowers commonly four from the top of each pedicel, on other short pedicels. Calyx turbinate, wrinkled with raised gray scattered tubercles, having four rounded segments [f]. In Linnæus's Flora Zeylanica, the calyxes are said to be five-toothed, the corollas five-petalled, and the berries white. According to Lourciro, the calyx is four-cleft, the corolla four-petalled; the stamens about one hundred in number; the berry white, small, roundish, one-celled, containing about eight seeds: but he doubts whether his plant be the same with Herman's.

Native of Ceylon; probably of other parts of the East Indies and of Cochinchina. Cultivated by Mr. Miller before 1759.

30. The whole plant is smooth. Branches obscurely four-cornered at top. Leaves very large, being a hand or more in length, veined, a little attenuated at top, blunt, not dotted on either side. Terminating racemes two, sometimes four together, the axillary ones opposite, solitary; all brachiate, three inches long. Peduncles four-cornered; partial ones opposite, spreading very much, remote; the lower ones trifid, with three-flowered pedicels. Bractæ awl-shaped, very short at the base of each peduncle and pedicel, none at the base of the calyx; which is obovate, the size of a pepper-corn and four-toothed [g].

Lourciro describes the species to which he gives this name, as a very branching small tree or shrub, five feet high, with reddish-white flowers, the calyx five-toothed, the corolla five-petalled. Berry dusky-red.

Native of Ceylon, and perhaps of Cochinchina.

31. This is a tree with round branches. Leaves smooth, quite entire, blunt, subpetioled. Corymbs terminating the branches, compound, divided three ways. Calyxes undivided, quite entire [h]. Berries two-celled, two-seeded [i].

Native of Ceylon and other parts of the East Indies; not of America.

32. This may contend the palm of elegance with most trees. It grows slowly, and flowers late, twice in a year. By age it acquires thickness and height beyond mediocrity. Trunk handsome, straight, forming a very lofty thick beautiful pyramidal head. Bark in the younger trees brown, then ash-coloured, finally white entirely, or with large yellow spots; it is very smooth and even, especially in old trees, but here and there hangs down in slender shreds; the flavour is astringent, not without something of aromatic. Timber very hard, red, compact, ponderous, and capable of being polished; used for the cogs of wheels in the sugar mills, and other works where considerable friction is required. The younger branches are acutely four-cornered and green. Leaves numerous, quite entire, shining, bright green, with transverse veins, blunt, attenuated into a short petiole; they are always opposite, commonly three or four inches long, of a very sweet aromatic smell, and on account of their agreeable astringency are used for sauce with food. Flowers small, white with a slight tinge of redness. Berries round, the size of peas, crowned with the remains of the calyx, having an aromatic smell and taste, which render them agreeable for culinary purposes; they contain about seven or eight seeds.

Native of the West Indies; Martinico, Guadaloupe and Grenada, where it is called *Bois d'Inde*, and is supposed to have been introduced from the East Indies [k]. It is however a different species from the M. caryophyllata of that country.

Browne says it is common in Antigua and Jamaica, as well as Barbadoes, and grows generally to a considerable size, that it fills the woods with the fragrant smell of its leaves, nearly resembling that of Cinnamon, but that the bark has no warmth of that sort, though the berries resemble Cloves very much, both in form and flavour. It is commonly called Wild Cinnamon or Wild Clove tree in Antigua and Jamaica. It is the Bayberry of Hughes, plate 10.

33. The whole of this plant is smooth. Leaves petioled, an inch long, emarginate, from a reflex margin becoming convex, the upper surface shining very much, veinless, transversely but obliquely marked with dusky nerved lines; the under surface less shining; the younger leaves veined on both sides, with minute raised dots scattered over the under surface, which vanish in the older leaves, and they have dusky spots impressed on the upper surface. Peduncles purplish, twice as long as the leaves, subracemose, in pairs. Pedicels opposite, commonly four, very remote, three-flowered. Flowers pedicelled. Calyx purplish, with roundish segments. Petals oblong, small. Fruit globular, the size of a pepper-corn [l].

Native of the West Indies.] Sent to Mr. Philip Miller by Mr. Robert Millar, surgeon, from Carthagena in New Spain.

[34. Branches subdichotomous, smooth, purplish at the end. Leaves subpetioled at the ends of the branchlets, an inch and half long, bluntish, with numerous simple veins not reaching the edge on either side, and minute raised dots scattered over them. Peduncles from the top, two, three-flowered, the length of the leaves, compressed: pedicels three-flowered: flowers sessile [m].—Native of Jamaica and Guiana.

35. This is an upright shrub, a foot and half high, with few, ascending branches. Leaves alternate, subsessile, with short very acute serratures. Flowers white, subterminating. Calyx five-cleft, with the segments acute, spreading. Corolla five-parted, with the parts ovate, concave, united at the base into a very short tube. Filaments about thirty, equal to the corolla. Anthers roundish. Germ roundish. Style fili-

[a] Vahl symb. [b] Gaertner. [c] Hort. Kew. [d] Linn. spec. [e] Vahl. [f] Swartz. [g] Vahl. [h] Idem. [i] Linn. syst. [k] Juss. gen. [l] Jacquin. [m] Vahl. [n] Idem.

form, equal to the ſtamens. Stigma thickiſh. Berry roundiſh, crowned, two-celled; with a few ovate ſeeds. Native of China near Canton[1].]

36. This tree grows to the height of thirty feet or more, with a ſtraight trunk, covered with a ſmooth brown bark, dividing upwards into many branches which come out oppoſite, garniſhed with oblong leaves, reſembling thoſe of the Bay-tree in form, colour, and texture, but longer, and placed by pairs: when theſe are bruiſed or broken, they have a very fine aromatic odour like that of the fruit. The branches grow very regular, ſo that the trees make a fine appearance, and as they retain their leaves through the year, the trees are worthy of being propagated for ornament and ſhade about the habitations of the planters. The flowers are produced in large looſe bunches from the ſide of the branches, towards their ends, each branch is alſo terminated by a larger bunch than the other; the flowers are ſmall, and of an herbaceous colour.

[Mr. Miller ſays they are male and female upon diſtinct trees, and deſcribes both. Swartz informs us that the Pimento is a polygamous tree, having the barren and fertile flowers either together, or on a diſtinct tree; that the calyx, which is called the fruit, or is inferior, is preſent in moſt of the ſpecies, but by no means ſuffices for the character of a diſtinct genus, rather performing the office of a bracte; and that the berry is moſt commonly one-ſeeded, though ſometimes it ſeems to be three-ſeeded.

Browne ſays, that ſome of theſe trees are frequently obſerved to be barren, which has introduced a notion among the people of Jamaica, of their being male and female trees in general, and that ſome of the male or barren trees were requiſite in every walk; all thoſe however that he obſerved bore only hermaphrodite flowers, and he was credibly informed that thoſe called male trees, when lopped and broken like the reſt for one or two years, bear very well; which he is the more apt to believe, as he never obſerved a diſtinct male or female flower on any of them.

He deſcribes the root as branched and ſpreading, the trunk ſmooth and ſhort, ſeldom above eight or ten inches in diameter, the top generally pretty much divided, and riſing in cloſe tufts, the leaves and bark very warm, and full of aromatic particles, which makes the planters very cautious of fire in all Pimento walks, where, if it ſhould once catch, it would run with great fury.

Linnæus ſays, that the calyx of the fruit is inferior and four-toothed, but the calyx of the flower ſuperior and four-parted; and that the berry has two ſeeds.

Gærtner deſcribes the berry as ſpherical, crowned with the calyx, which is flattiſh, depreſſed and five-notched; it is fleſhy, two-celled, and gratefully aromatic: receptacle in the upper part of the partition. Seeds two, rounded-kidney-form, ſomewhat convex on one ſide, flat on the other, rufeſcent, not ſhining. Integument ſingle, ſomewhat membranaceous, thin. No albumen. Embryo roundiſh. Cotyledons linear-acuminate, very ſhort. Radicle very long, thick, ſpirally convoluted, aſcending or ſuperior.

The Pimento tree is a native of the Weſt Indies, and flowers in June, July and Auguſt. The berries are chiefly imported into England from Jamaica, whence the name Jamaica Pepper. It is alſo named All-ſpice, from a notion of its taſte being compounded of ſeveral other ſpices.—Mr. Miller cultivated it in 1739[2].

This tree begins to bear fruit in three years after it is planted, but does not arrive at maturity under ſeven; it then repays very abundantly the patience of the planter, yielding one thouſand pounds weight of fruit from an acre. They are generally gathered in July, in their green ſtate, by twiſting off the twigs with the hand, or a pole cleft at one end; and are laid on cloths ſpread over the barbacues or terraced floors raiſed a little above the ground, incloſed with an upright ledge of eight or ten inches in height, and divided by trankverſe partitions into four or more ſquare compartments, that each may contain a day's picking. During the firſt and ſecond day they are turned often, that the whole may be more expoſed to the ſun; but when they begin to dry, they are frequently winnowed, and laid in cloths to preſerve them better from rain and dews, ſtill expoſing them to the ſun every day, and removing them under cover every evening, till they are ſufficiently dried, which uſually happens in ten or twelve days, and is known by the darkneſs of their complexion, and the rattling of the ſeeds, they appear at this time wrinkled and changed to a very dark brown. In this ſtate, being ready for the market, they are ſtowed in bags or caſks. Some planters kiln dry them with great ſucceſs. Such of the berries as come to full maturity, like many other ſeeds, loſe that aromatic warmth for which they are eſteemed, and acquire a taſte perfectly like that of Juniper berries; which renders them a very agreeable food for the birds, the moſt induſtrious planters of theſe trees.

The berries have an agreeable aromatic ſubaſtringent taſte, which recommends them both in the kitchen, and the druggiſt's ſhop. A delicate aromatic oil is diſtilled from them, which anſwers all the purpoſes for which the oils of Cinnamon and Cloves have been generally uſed, and is thought by ſome to be better than either, as it joins an aſtringency with its warmth. All parts of the tree are more or leſs aromatic and ſubaſtringent, but the leaves ſeem to abound moſt in volatile warm particles[3].]

Mr. Miller was informed by an eminent merchant, through whoſe hands great quantities of the commodity paſſed, that the Dutch purchaſed All-ſpice of the Engliſh at a low price, and grinding it, ſold it again to us at an advanced price for powder of Cloves: and that they draw an oil from it, which they vend for oil of Cloves. Mr. Miller had a phial of this oil ſent him from Jamaica, which was ſhown to ſome of the beſt judges of drugs in London, who having tried it, declared they thought it as good as any oil of Cloves they had ſeen. He ſuggeſts, as worthy of trial, to dry the fruit when firſt formed, as a ſuccedaneum for oriental Cloves.

[All-ſpice, which was at firſt brought over for dietetic purpoſes, has been long employed in the ſhops as a ſuccedaneum to the more coſtly oriental aromatics. It is moderately warm, of an agreeable flavour, ſomewhat reſembling that of a mixture of Cloves, Cinnamon and Nutmeg. Diſtilled with water it yields an elegant eſſential oil, ſo ponderous as to ſink in the water, in taſte moderately pungent, in ſmell and flavour approaching to oil of Cloves, or rather a mixture of Cloves and Nutmegs. To rectified ſpirit it imparts by maceration or digeſtion, the whole of its virtue: in diſtillation it gives over very little to this menſtruum, nearly all its active power remaining concentrated in the inſpiſſated extract.

Pimento can ſcarcely be conſidered as a medicine: being however an agreeable aromatic, it is not unfrequently employed with different drugs, requiring ſuch a grateful adjunct. In the London Pharmacopœia both an aqueous and ſpirituous diſtilled water of the berries is directed, and the powder of them is an ingredient in Syrup of Buckthorn. The Edinburgh College order alſo the Eſſential Oil[4].]

PROPAGATION AND CULTURE.

1. All the varieties of the Common Myrtle may be propagated from cuttings, the beſt ſeaſon for which is the beginning of July, when you ſhould make choice of ſome of the ſtraighteſt and moſt vigorous young ſhoots, which ſhould be about ſix or eight inches long, and the leaves on the lower part muſt be ſtripped off about two or three inches high, and the part twitted which is to be placed in the ground; then having filled a parcel of pots (in proportion to the quantity of cuttings deſigned) with light rich earth, you ſhould plant the cuttings therein, at about two inches diſtance from each other, obſerving to cloſe the earth faſt about them, and give them ſome water to ſettle it to the cuttings; then place the pots under a common hot-bed frame, plunging them either into ſome old dung, or tanners-barks, which will prevent the earth from drying too faſt; but you muſt carefully ſhade them

[1] Loureiro [2] Hort. kew. [3] Browne, 248, and Long, vol. 3. p. 702. [4] Woodville.

with

with mats in the heat of the day, and give them air in proportion to the warmth of the ſeaſon, not forgetting to water them every two or three days, as you ſhall find the earth in the pots require it.

With this management, in about ſix weeks, the cuttings will be rooted, and begin to ſhoot, when you muſt inure them to the open air by degrees, into which they ſhould be removed towards the latter end of auguſt, or the beginning of ſeptember, placing them in a ſituation where there may be ſheltered from cold winds, in which place they may remain till the middle or latter end of october, when the pots ſhould be removed into the green houſe, but ſhould be placed in the coolеſt part thereof, that they may have air given to them whenever the weather is mild, for they require only to be protected from ſevere cold, except the Orange-leaved, and the ſtriped Nutmeg Myrtles, which are ſomewhat tenderer than the reſt, and ſhould have a warmer ſituation.

During the winter ſeaſon, they muſt be frequently, but gently watered; and if any decayed leaves appear, they ſhould be conſtantly picked off, as alſo the pots kept clear from weeds, which, if permitted to grow, will ſoon overſpread the young plants, and deſtroy them.

If theſe pots are placed under a common hot-bed frame in winter, where they may be ſereened from froſt, and have the free air in mild weather, the young plants will ſucceed better than in a green-houſe, provided they do not receive too much wet, and are not kept cloſely covered, which will occaſion their growing mouldy, and dropping their leaves.

The ſpring following theſe plants ſhould be taken out of the pots very carefully, preſerving a ball of earth to the roots of each of them, and every one ſhould be placed into a ſeparate ſmall pot filled with rich light earth, obſerving to water them well to ſettle the earth to their roots, and place them under a frame until they have taken root; after which they ſhould be inured to the open air, and in may they muſt be placed abroad for the ſummer, in a ſheltered ſituation, where they may be defended from ſtrong winds.

During the ſummer ſeaſon they will require to be plentifully watered, eſpecially being in ſuch ſmall pots, which in that ſeaſon ſoon dry; therefore you ſhould obſerve to place them where they ſhould receive the morning ſun, for when they are too much expoſed to the ſun in the heat of the day, the moiſture contained in the earth of theſe ſmall pots will ſoon be exhaled, and the plants greatly retarded in their growth thereby.

In auguſt following you ſhould examine your pots, to ſee if the roots of the plants have not made way out through the hole in the bottom of the pots, which if you obſerve, you muſt then ſhift them into pots a ſize larger, filling them up with the like rich earth, and obſerve to trim the roots which were matted to the ſide of the pots, as alſo to looſen the earth from the outſide of the ball with your hands, ſome of which ſhould be taken off, that the roots may the eaſier find paſſage into the freſh earth; then you muſt water them well, and place the pots in a ſituation where they may be defended from ſtrong winds; and at this time you may trim the plants, in order to reduce them to a regular figure; and if they are inclinable to make crooked ſtems, you ſhould thruſt down a ſlender ſtraight ſtick cloſe by them, to which their ſtems ſhould be faſtened, ſo as to bring them upright.

If care be taken to train them thus while they are young, the ſtems afterwards when they have acquired ſtrength, will continue ſtraight without any ſupport, and their branches may be pruned, ſo as to form either balls or pyramids, which for ſuch plants as are preſerved in the green-houſe, and require to be kept in ſmall compaſs, is the beſt method to have them handſome; but then theſe thereed plants will not produce any flowers, for which reaſon that ſort with double flowers ſhould not be clipped, becauſe the chief beauty of that conſiſts in its flowers; but it will be neceſſary to ſuffer a plant or two of each kind to grow rude, for the uſe of their branches in noſegays, &c. for it will greatly deface thoſe which have been conſtantly ſheered to cut off their branches.

As theſe plants advance in ſtature, they ſhould annually be removed into larger pots, according to the ſize of their roots; but you muſt be careful not to put them into pots too large, which will cauſe them to ſhoot weak, and many times prove the deſtruction of them; therefore when they are taken out of the former pots, the earth about their roots ſhould be pared off, and that within ſide the ball muſt be gently looſened, that the roots may not be too cloſely confined; and then place them into the ſame pots again, provided they are not too ſmall, filling up the ſides and bottom of them with freſh rich earth, and giving them plenty of water to ſettle the earth to their roots; which ſhould be frequently repeated, for they require to be often watered both in winter and ſummer, but in hot weather they muſt have it in plenty.

The beſt ſeaſon for ſhifting theſe plants is either in april or auguſt, for if it be done much ſooner in the ſpring, the plants are then in a ſlow growing ſtate, and ſo not capable to ſtrike out freſh roots again very ſoon; and if it be done later in autumn, the cold weather coming on will prevent their taking root; nor is it adviſeable to do it in the great heat of ſummer, becauſe they will require to be very often watered, and alſo to be placed in the ſhade, otherwiſe they will be liable to droop for a conſiderable time; and that being the ſeaſon when theſe plants ſhould be placed amongſt other exotics, to adorn the ſeveral parts of the garden, theſe plants, being then removed, ſhould not be expoſed until they have taken root again, which, at that time (if the ſeaſon be hot and dry) will be three weeks or a month.

In october, when the nights begin to be froſty, you ſhould remove the plants into the green-houſe; but if the weather proves favourable in autumn (as it often happens) they may remain abroad until the beginning of november; for if they are carried into the green-houſe too ſoon, and the autumn ſhould prove warm, they will make freſh ſhoots at that ſeaſon, which will be weak, and often grow mouldy in winter, if the weather ſhould be ſo ſevere as to require the windows to be kept cloſely ſhut, whereby they will be greatly defaced; for which reaſon they ſhould always be kept as long abroad as the ſeaſon will permit, and removed out again in the ſpring before they ſhoot out; and during the winter ſeaſon that they are in the green-houſe, they ſhould have as much free air as poſſible when the weather is mild.

The Common broad-leaved, broad-leaved Dutch, and Portugal Myrtles may be planted, abroad in warm ſituations, and upon a dry ſoil, where they endure the cold of our winter very well, with only being covered in very hard froſts with mats, and the ſurface of the ground about their roots covered with a little mulch to prevent the froſt from entering the ground; but in Cornwall and Devonſhire, where the winters are more favourable than in moſt other parts of England, there are large hedges of Myrtle which have been planted ſeveral years, and are very thriving and vigorous, ſome of which are upwards of ſix feet high; and I believe, if the double flowering kind were planted abroad, it would endure the cold as well as any of the other ſorts, it being a native of the ſouthern parts of France. This, and the Orange-leaved, are the moſt difficult to take root from cuttings; but if they are planted towards the latter end of june, making choice of only ſuch ſhoots as are tender, and the pots are plunged into an old bed of tanner's bark which has loſt moſt of its heat, and the glaſſes ſhaded every day, they will take root extremely well. The Orange-leaved, and thoſe with variegated leaves, are ſomewhat tenderer than the ordinary ſorts, and ſhould be houſed a little ſooner in autumn, and placed farther from the windows of the green-houſe.

2d. This plant is with difficulty propagated, which occaſions its preſent ſcarcity, for as it does not produce ripe ſeeds in Europe, it can only be increaſed by layers or cuttings. By the former method the layers are commonly two years before they take root, and the cuttings frequently fail, though the latter is preferred,

when performed at a proper ſeaſon and in a right method; the beſt time to plant the cuttings is in may: in the choice of them, it ſhould be the ſhoots of the former year, with a ſmall piece of the two years wood at bottom; theſe ſhould be planted in ſmall pots, filled with ſoft loamy earth, for ſmall pots are to be preferred to large ones for this purpoſe, and they ſhould be plunged into a very moderate hot-bed of tanners bark; and if the pots are each covered with ſmall bell or hand-glaſſes, ſuch as have been uſed for blowing Carnations to exclude the air, it will be of great ſervice to promote the cuttings putting out roots, though they are covered with the glaſſes of the hot-bed above them; the cuttings ſhould be ſhaded from the ſun in the heat of the day, and gently refreſhed with water, as the earth in the pots is found to dry, but they ſhould by no means have too much wet: thoſe cuttings which ſucceed, will have taken root by july, when they ſhould be gradually inured to bear the open air, into which it will be proper to remove them about the middle of that month, that they may be ſtrengthened before winter, but it will not be proper to tranſplant the cuttings till ſpring; the pots muſt be removed into a temperate ſtove in autumn, and during the winter the cuttings muſt be gently refreſhed with water. In the ſpring they ſhould be carefully taken up, and each planted in a ſmall pot filled with light earth from a kitchen-garden, and plunged into a moderate hot-bed to forward their taking freſh root; then they ſhould be gradually hardened, and in july placed in the open air in a ſheltered ſituation, where they may remain till the end of ſeptember, and then be removed into the ſtove.

This plant will not live through the winter in England in a green-houſe, but if it is placed in a moderate degree of warmth, it will flower well in winter; and in july, auguſt and ſeptember the plants ſhould be placed abroad in a ſheltered ſituation.

[The other tender Myrtles from the Eaſt and Weſt Indies may be treated in the ſame manner.]

36. This tree is propagated by ſeeds, which in the natural place of its growth are conveyed, and ſown by birds, to a great diſtance; and, it is very probable, the ſeeds paſſing through them, are rendered fitter for vegetation, than thoſe which are immediately gathered from the tree; for I have received great quantities of the berries which were perfectly ripe and freſh, great part of which I ſowed in different ways, and communicated ſome of them to ſeveral other curious perſons, who did the ſame, but none of them have yet ſucceeded; and upon informing my friend Mr. Williams of this, he told me that a friend of his, whoſe plantation was on the ſouth ſide of Jamaica, deſired him to ſave a large quantity of the ripe berries for him to ſow on his plantation, which he accordingly did, but his friend forgot to ſend for them till near two years after; during which time, they had lain in a large heap, and had fermented, and, on ſowing thoſe berries, the plants came up with the firſt rains in great abundance; ſo that it may be of great ſervice to theſe ſeeds, either to paſs through animal bodies, or to be fermented before they are ſown.

The plants cannot be preſerved in England unleſs they are placed in a ſtove during the winter ſeaſon, but they will thrive in a moderate degree of warmth: they ſhould be planted in a ſoft light ſoil, and in winter muſt have but little water. In the ſummer they ſhould have a large ſhare of air, and in july, if the ſeaſon proves warm, they may be placed in the open air, in a warm ſheltered ſituation; but upon the approach of cold nights, they muſt be removed into the ſtove again. The expoſing of theſe plants to the open air for one month only, will be of great ſervice to clean their leaves from inſects or filth, which they are ſubject to contract, by remaining long in the ſtove: but if the ſeaſon ſhould prove very wet or cold, it will not be ſafe to truſt theſe plants long abroad; therefore their leaves ſhould be now and then waſhed with a ſponge to clean them, which will not only render them more ſightly, but alſo promote their growth.

This tree is pretty difficult to propagate in England, where the ſeeds do not ripen: the only method in which this has been done, is by laying down the young branches, ſlitting them at a joint in the ſame manner as is practiſed in making layers of Carnations. If this is carefully performed, and the layers are regularly but gently watered, they will put out roots in one year; then they may be carefully ſeparated from the old plants, and each planted in a ſmall pot filled with light earth, and plunged into the tan-bed, either in the ſtove or under a frame, being careful to ſhade them until they have taken new root, after which they may be treated as the older plants. This plant, being an Evergreen, makes a fine appearance in the ſtove at all ſeaſons of the year; and the leaves having ſuch an agreeable fragrancy when rubbed, renders them as worthy of a place in the ſtove, as any other tender exotic plant which is preſerved for ornament.

As theſe plants do not riſe ſo readily from ſeeds in England, the beſt way to obtain them is to get ſome perſon of ſkill in America, to take up a number of young plants, and plant them cloſe in boxes of earth, ſetting them in the ſhade till they have taken new root; then remove them into an open ſituation where they may have time to eſtabliſh their roots before they are ſhipped for England; and in their paſſage they muſt be guarded from the ſpray of the ſea, and ſalt water, and ſhould have very little water given them; for moſt of the plants which are ſent to England, are killed in their paſſage by having too much wet. If theſe directions are obſerved, the plants may be brought in good health to England, provided they come over any time in the ſummer, that they may have time to get freſh root before the cold ſeaſon begins; and when once they are well eſtabliſhed in their roots here, they may be preſerved many years in vigour; but I have not ſeen many of the plants in flower here as yet.

[MYRTUS. See *Calyptranthes*, *Eugenia*, *Melaleuca*, *Myrica*.

MYSTAX. See *Hagenia*.

MYXA. See *Cordia* and *Rumphia*.]

N.

[NABEA. See *Rhamnus*.

NACIBEA. See *Mauritia*.

NAGAM. See *Heritiera*.

NAGA-MU-VALLI See *Banhinia*.

NAGASSARIUM. See *Mesua*.

NAGELA and NAGIL. See *Myrica*.

NAGHAS. See *Mesua*.

NAJAS. (*A water plant, from* Naias, *nympha of the ſprings; from* ναω, *fluo.*)

Lin. gen. n. 1096. *Reich. n.* 1198. *Schreb. n.* 1488. *Juſſ.* 19. Fluvialis. *Vaill. act. par.* 1719. *t.* 1. *f.* 2. *Mich.* 8.

Claſſ. 22. 1. Dioecia Monandria.

Nat. order of *Inundatæ*. *Naiades*, Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* one-leafed, truncate at the baſe, cylindric, attenuated above; at the mouth with two oppoſite reflex ſegments.

COR. one-petalled, equal: *tube* the length of the calyx; *border* five-parted, with oblong revolute ſegments.

STAM. *Filaments* none. *Anthers* oblong, erect.

* *Female.*

CAL. none.

COR. none.

PIST. *Germ* ovate, ending in an attenuated *Style*. *Stigmas* ſimple, permanent.

PER. *Capſule* ovate, one-celled.

SEEDS ovate-oblong.

ESSENTIAL CHARACTER.

MALE. *Cal.* cylindric, bifid. *Cor.* four-cleft. *Filament* none.

FEM. *Cal.* none. *Cor.* none. *Pift.* one. *Capf.* ovate, one-celled.

SPECIES.

1. Najas marina.
   Lin. fpec. 1441. *Reich.* 4. 220. *hort. cliff.* 437. *fl. fuec. n.* 877. *Gouan monfp.* 500. *Pallas it.* 1. 369. *Hall. helv. n.* 556.
   N. major & minor. *Allion. pedem. n.* 2105 & 2106.
   Fluvialis vulgaris latifolia. *Vaill. act.* 1719. *p.* 17. *t.* 1. *f.* 2.
   F. latifolia (& anguftifolia) fructu monofpermo. *Mich. gen.* 11. *t.* 8. *f* 1, 2.
   F. pifana, fol. denticulatis. *Bauh. hift.* 3. 579.
   Potamogeton fluviatile, Sargazo fimile, lucens, fol. margine dentatis. *Pluk. phyt. t.* 216. *f.* 4. *Raii fuppl.* 121.
   β. Fluvialis fpecies, anguſto brevique folio, undequaque fpinis infeſta. *Raii fuppl.* 132.
   γ. F. fpec. fol. anguſto, ad margines denticulis fpinoſis inciſo, flagellum Chriſti dicta. *Raii fuppl.* 121.

DESCRIPTION, *&c.*

Stem wide, having triangular fpines fcattered over it. Leaves firm narrow with very fimilar toothed fpines on each fide. Flowers folitary from the axils of the leaves, male and female near each other: the males drooping on a fhort petiole; the females feſſile erect [a].

According to Juſſieu, it has three whorled fheathing leaves, the flowers axillary feſſile, the filament in the male flowers long, with a four-valved anther, which is the four-cleft corolla of Linnæus; in the female flowers two ſtigmas, and one nut or four feeds.

Native of the ſea coaſt of Europe; in the canal between Piſa and Leghorn; and in the Rhine near Baſle.

NAI-CORANA. See *Dolichos.*

NAKED LADIES. See *Colchicum.*

NALUGU. See *Arolla.*

NAMA, (*of Pliny.* Νᾶμα *of Theophraſtus: fluentum, later, a ſtream or ſpring of water.*)
   Lin. gen. n. 317. *Reich. n.* 346. *Schreb. n.* 444. *Gærtn. t.* 44. *Juſſ.* 134.
   Claſſ. 5. 2. Pentandria Digynia.
   Nat. order of *Succulentæ. Convolvuli*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted, permanent: *fegments* lanceolate, acute, ſtraight, ſomewhat ſpreading.

COR. one-petalled, wheel-falver-ſhaped: *tube* ſhort: *border* five-parted: *fegments* ovate, obtuſe, the length of the calyx.

STAM. *Filaments* five, filiform, ovate at the baſe, inſerted into the middle of the tube of the corolla, alternate with and ſhorter than the ſegments. *Anthers* oblong, bifid at the baſe, revolute, incumbent.

PIST. *Germ* ovate, ſuperior. *Style* two, capillary, erect, the length of the ſtamens. *Stigmas* capitate.

PER. *Capſule* ovate-oblong, blunt, compreſſed, grooved on each ſide, two-celled, two-valved, ſhorter than the calyx.

SEEDS numerous, very ſmall, faſtened to a flat receptacle in the middle of the partition.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* five-parted. *Capſ.* one-celled, two-valved.

SPECIES.

1. Nama jamaicenſis.
   Lin. fpec. 327. *Reich.* 1. 633. *Brown. jam.* 185. *t.* 18. *f.* 2. (good). *Swartz obſ.* 309.

DESCRIPTION, *&c.*

Root ſimple, thready. Stem herbaceous, from two inches to half a foot in length, ſubdivided, procumbent, pubeſcent, tender, three-winged from the decurrent petioles. Branchlets from the axils of the leaves procumbent. Leaves oppoſite, wedge-ſhaped at the baſe, ovate-roundiſh, entire, pubeſcent. Petioles decurrent at the ſides, the wings converging to the ſide oppoſite to the petiole. Flowers axillary, two to four, in cluſters, ſmall, white, on ſhort peduncles. Calycine ſegments linear, erect, ſomewhat hirſute. Tube of the corolla narrower at the baſe, a little longer than the calyx: ſegments of the border roundiſh, erect, convex, incumbent not ſpreading. Filaments from the baſe of the corolla, wider at bottom, awl-ſhaped. Anthers roundiſh. Germ oblong, conical. Styles contiguous. Stigmas blunt. Capſule oblong, blunt, four-cornered, acuminate, one-celled, two valved; containing many, minute, roundiſh, brown ſeeds [b].

According to Gærtner, the capſule is roundiſh (teretiuſcula) marked with a groove on each ſide, two-celled, two-valved, the valves when ripe becoming bifid: partition contrary to the valves, formed by their margins bent in. Receptacle compoſed of two membranaceous linear acuminate lamiæ, placed in the axis of the capſule and at the meeting of the partitions, free, and ſupporting the ſeeds in a double row in each cell. Seeds ſubglobular, ſmall, ſcrobiculate or ſtriated lattice-wiſe.

Browne ſays, that this little plant ſpreads about the root, and ſeldom grows above five or ſix inches in length; that the whole of it is ſomewhat hairy, with the ſtalk and branches margined.

It is an annual plant, native of Jamaica, in cultivated grounds, and ruins of rocks [c].

NAMA ZEYLANICA. See *Hydrolea.*

NANDINA. (*From the Japoneſe vernacular name* Nandin.)
   Lin. gen. Schreb. n. 596. *Thunb. nov. gen.* 14. *flor. jap.* 9. *Juſſ.* 429. *Gærtn. t.* 92.
   Claſſ. 6. 1. Hexandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* many-leaved, imbricate in ſix rows: *ſcales* about ſix in each row, ovate, acute, ſmooth, caducous.

COR. *Petals* ſix, oblong, concave, acute, longer than the calyx, caducous.

STAM. *Filaments* ſix, very ſhort. *Anthers* oblong, erect, the length of the corolla.

PIST. *Germ* ovate, ſmooth, ſuperior. *Style* three-cornered, very ſhort. *Stigma* three-cornered.

PER. *Berry* juiceleſs, globular, ſmooth.

SEEDS two, hemiſpherical ſmooth.

ESSENTIAL CHARACTER.

Cal. many-leaved, imbricate. *Cor.* ſix-petalled.

SPECIES.

1. Nandina domeſtica.
   Lin. ſyſt. 344. *Thunb. jap.* 147. *Gærtn. fruct.* 2. 69. *Kæmpf. ic. ſelect. t.* 13. 14.
   Nandsjoki, vulgo Natten vel Nandin. *Kæmpf. amoen.* 5. 776.

DESCRIPTION, *&c.*

Root perennial. Stems ſeveral, ſhrubby, upright, looſe, branched at top, a fathom in height, the thickneſs of a finger or thumb. Branches covered with the ſheaths of the leaves, flexuoſe, leafy at top. Leaves ſuperdecompound, ternate. Leaflets ſubſeſſile, ovate, ſetaceous-acuminate, quite entire with a reflex margin, ſmooth. Petioles grooved, ſmooth. Flowers terminating, panicled. Panicle ſuperdecompound. Peduncles and pedicels angular [d]. Berry ſuperior, the ſize of a Pea, coriaceous, terminated by the ſhort ſtyle and the headed three-lobed ſtigma, red on the outſide turning to a ruſeſcent bay colour, covered with a white membrane within and one-celled. Seeds two, meniſcoid or concavo-convex, round, marked on one edge with a depreſſed ſtreak, running from the baſe to the tip, aſh-coloured or ruſeſcent. Sometimes only one ſeed comes to perfection, and then the other adheres to its baſe like a withered ſcale, the perfect ſeed retaining its meniſcoid form: but ſometimes the ſeeds have an excavation on each ſide [e].

Native of Japan, where it is generally cultivated in their gardens, flowering in may and june [f].

NAPÆA. (Νᾶπαι *nymphs of the woods, from* νάπος *or* νᾶπος, *fallus.*)
   Lin. gen. n. 838. *Reich. n.* 1244. *Juſſ.* 273. *Gærtn. t.* 136. *Clayton.* Sida. *Cavan. diſſ.* 1. *Schreb. gen. n.* 1129.

[a] Haller. [b] Swartz. [c] Idem. [d] Thunberg. [e] Gærtner. [f] Thunberg.

Claſſ. 22. 13. Dioecia Monadelphia. ſ. 16. 6. Monadelphia Polyandria.

Nat. order of *Columniferæ*. *Malvaceæ*. Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* bell-ſhaped, five-cleft, round, permanent.

COR. *Petals* five, oblong, concave, patulous, convex with oblong claws.

STAM. *Filaments* very many, capillary, of a middling length, connected in a column. *Anthers* roundiſh, compreſſed.

PIST. *Germ* conical, minute. *Style* cylindric, ten-cleft, capillary. *Stigmas* none.

PER. abortient.

* *Female* on a diſtinct individual.

CAL. and COR. as in the male.

STAM. *Filaments* as in the male, but ſhorter. *Anthers* ſmall, effete.

PIST. *Germ* conical. *Style* as in the male, longer than the ſtamens. *Stigmas* blunt.

PER. *Capſules* ten, converging into an ovate form, ſharpiſh, awnleſs.

SEEDS ſolitary, kidney-form.

ESSENTIAL CHARACTER.

Cal. five-cleft. *Pet.* five.

MALE. *Stam.* monadelphous, very many, ſertile. *Styles* ſeveral, barren.

FEM. *Stam.* monadelphous, very many, barren. *Styles* ſeveral, longer than the ſtamens. *Capſ.* orbicular, depreſſed, ten-celled. *Seeds* ſolitary.

SPECIES.

1. Napæa lævis. *Smooth Napæa.*
   Lin. ſyſt. 896. *Reich.* 4. 282. *amoen.* 3. 18. *Fabric. helmſt.* 281.
   N. hermaphrodita. *Lin. ſpec.* 965. *Mill. dict. n.* 2. *Kniph. cent.* 8. *n.* 73.
   Sida fol. palmatis, lacinis lanceolato-attenuatis. *Lin. hort. cliff.* 346. *utr.* 198.
   Malva virginiana, Ricini folio. *Herm. lugdb.* 22. *t.* 23.
   Peduncles naked ſmooth and even, leaves lobed ſmooth.
2. Napæa ſcabra. *Rough Napæa.*
   Lin. ſyſt. 896. *Reich.* 4. 282.
   N. dioica. *Lin. ſpec.* 965. *amoen.* 3. 18. *Mill. dict. n.* 1. *Gærtn. fruct.* 2. 259. *Gron. virg.* 102. *Fabric. helmſt.* 282.
   Abutilon fol. profunde diſſecto, pedunculis multifloris, mas & femina. *Ehret. pict. t.* 7. 8. *Trew. nov. act. nat. cur.* 1. 437. *t.* 10. *f.* 1, 2. *Buniſ. virg.* 1928. (Althæa).
   Peduncles involucred angular, leaves palmate rugged.

DESCRIPTIONS, *&c.*

1. Root perennial, frequently creeping. Stems ſmooth, about four feet high. Leaves alternate, upon pretty long ſlender foot-ſtalks, deeply cut into three lobes, which end in acute points, and are regularly ſerrate; thoſe on the lower part of the ſtem are near four inches long, and almoſt as much in breadth, but they diminiſh gradually to the top of the ſtem. At the baſe of the leaf comes out the peduncle, about three inches long, dividing at top into three ſmaller, each ſuſtaining one white flower, ſmaller than in the ſecond ſort, with a longer column of ſtamens, the anthers ſtanding out beyond the corolla.

[Linneus ſays, that the leaves are cordate, five-lobed, acuminate, flat; and that the peduncles have three or four flowers.]

2. Root perennial, compoſed of many thick fleſhy fibres, ſtriking deep into the ground, and connected at the top into a large head, from which come out many rough hairy leaves, near a foot diameter each way, deeply cut into ſix or ſeven lobes, irregularly indented on their edges, each lobe having a ſtrong midrib, all meeting at the foot-ſtalk, which is large and long, ariſing immediately from the root. Flower-ſtalks ſeven or eight feet high, dividing into ſmaller branches, having one leaf at each joint, of the ſame form as thoſe below, but diminiſhing in ſize towards the top, where they ſeldom have more than three lobes, which are divided to the foot-ſtalk. Towards the upper part of the ſtalk comes out from the ſide at each joint a long peduncle, branching out towards the top, and ſuſtaining ſeveral white flowers, which are tubulous at bottom where the ſegments of the petal are connected, but ſpread open above, and are divided into five obtuſe ſegments. The male plants are barren; but in the female plants the flowers are ſucceeded by [ten capſules, placed in a ring, ſemicircular, finiſhing at top in a recurved dagger-point, compreſſed wedge-ſhaped, convex on the back, with a raiſed line along the middle, flat at the ſides and ſubcrenulate towards the dorſal margin, one-celled, valveleſs, or ſometimes but ſeldom opening by two valves. Common receptacle central, pyramidal, grooved and finiſhing in a dagger-point: proper none or very ſhort. Seeds ſolitary, kidney-form, triangular-compreſſed, brown, very obſcurely ſtriated. Integument triple; the outmoſt very thin, the middle cartilaginous; the inmoſt membranaceous[a].

The female flowers have ſtamens, but the anthers are very ſmall, effete and barren. The leaves are ſubpeltate, but open to the very petiole and wrinkled; they have from two to ſeven lobes. Flowers in heads. Fruit orbicular, depreſſed, conſiſting of eight or ten joints[b].

Schreber, following Cavanilles, has united theſe plants to Sida, to which they are very nearly allied. But we may thus, as has been before remarked, thruſt all the plants of every natural order into one genus. Beſides the circumſtance of having fertile and barren hermaphrodite flowers on diſtinct individuals, the petals are not oblique, the pedicel is not jointed, and the calyx is wider at the baſe[c]. Gærtner remarks, that Napæa differs from Sida in having more than one capſule, and a manifeſt common receptacle; from Abutilon in having only one ſeed in each capſule, and that not clearly valved.]

Both theſe plants grow naturally in Virginia and other parts of North America. From their bark a ſort of hemp might be procured, ſuch as many of the malvaceous tribe afford. They flower from july to ſeptember, the ſeeds ripen in autumn, and then the ſtalks decay.

[Mr. Miller cultivated them in 1759[a].]

PROPAGATION AND CULTURE.

Theſe plants are eaſily propagated by ſeeds, ſown on a bed of common earth in the ſpring. Keep them clear from weeds till autumn, and then tranſplant them where they are to remain. They delight in a rich moiſt ſoil, in which they will grow very luxuriantly, and muſt be allowed room. The firſt ſort may alſo be increaſed by parting the roots in autumn. They are not plants of any great beauty.

[NAPECA. See *Rhamnus.*

NAPELLUS. See *Aconitum.*

NAPO-BRASSICA. See *Braſſica.*

NAPUS. See *Braſſica.*]

NARCISSO-LEUCOIUM. See *Leucoium.*

NARCISSUS, *(of Pliny, &c. Narciſſus of Theophraſtus and Dioſcorides. The youth Narciſſus was fabled by the poets to be metamorphoſed into this flower: but it is commonly derived from ναρκαω, being endued, as is ſuppoſed, with a narcotic quality.*]

Lin. gen. n. 403. *Reich. n.* 436. *Schreb. n.* 550. *Tourn. t.* 185. *Juſſ.* 55.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Spathaceæ*. *Narciſſi*. Juſſ.

GENERIC CHARACTER.

CAL. *Spathe* oblong, obtuſe, compreſſed, opening on the flat ſide, ſhrivelling.

COR. *Petals* ſix, ovate, acuminate, flat, equal, inſerted into the tube of the nectary externally above the baſe.

Nectary one-leafed, cylindric-funnel-form, colored on the border.

STAM. *Filaments* ſix, awl-ſhaped, fixed to the tube of the nectary, ſhorter than the nectary. *Anthers* oblongiſh.

PIST. *Germ* roundiſh, obtuſely three-ſided, inferior. *Style* filiform, longer than the ſtamens. *Stigma* bifid, concave, obtuſe.

PER. *Capſule* roundiſh, obtuſely three-cornered, three-celled, three-valved.

SEEDS many, globular, appendicled.

[a] Gærtner. [b] Linn. ſpec. [c] Juſſ. gen. [a] Hort. kew.

ESSENTIAL CHARACTER.

Pet. fix, equal. *Nect.* funnel-form, one-leafed. *Stam.* within the nectary.

SPECIES.

1. Narciſſus poeticus. *Poetic or White Narciſſus.*
Lin. ſpec. 414. *Reich.* 2. 17. *hort. cliff.* 134. *upſ.* 74. *Engl. bot.* 275. *Wither. arr. ed.* 3. 331. *Hall. helv. n.* 1250. *Scop. carn. n.* 394. *Villars dauph.* 2. 248. *Knorr.* 1. *t.* N. 4. *Knipb. cent.* 7. *n.* 62.
N. anguſtifolius. *Narrow-leaved Narciſſus.*
Curt. magaz. 193.
N. albus circulo purpureo. *Bauh. pin.* 48.
N. medio purpureus. *Dod. pempt.* 223. 1. *Bauh. hiſt.* 2. 600. *Dalech.* 1517. *Ger. emac.* 123. 1. *Raii hiſt.* 1133.—præcox. *Ger.* 108. 2. præcocior. 109. 3. præciſſimus. 109. 4.—præcox. *Park. parad.* 76. *t.* 75. *f.* 3.
β. N. medio purpureus multiplex. *Bauh. pin.* 54.
Double White Narciſſus.
N. medio purp. flore pleno. *Ger. emac.* 124. 5.
Spathe one-flowered, nectary wheel-ſhaped very ſhort ſcarioſe crenulate.
2. Narciſſus biflorus. *Two-flowered Narciſſus,* or *pale Daffodil.*
Engl. bot. 276. *Withet. arr. ed.* 3. 332. *Curt. magaz.* 197.
N. poeticus. *Hudſ. angl.* 141.
N. medio luteus. *Mill. dict. n.* 4. *Dod. pempt.* 223. 2. *Ger.* 110. 6. *emac.* 124. 7.—vulgaris. *Park. parad.* 74. *t.* 75. *f.* 1. *Raii hiſt.* 1135. *ſyn.* 371.
N. pallidus circulo luteo. *Bauh. pin.* 51.
N. albidus medio luteus cum aliquot floribus. *Bauh. hiſt.* 2. 604. 1.
β. N. tenuior. *Curt. magaz.* 379.
Spathe two-flowered, nectary wheel-ſhaped very ſhort ſcarioſe crenulate, leaves acute on the keel, the edges turned inwards.
3. Narciſſus Pſeudo-Narciſſus. *Common Daffodil.*
Lin. ſpec. 414. *Reich.* 2. 17. *hort. cliff.* 134. *upſ.* 74. *Hudſ. angl.* 141. *Withet. arr. ed.* 3. 332. *Engl. bot.* 17. *Relh. cant. n.* 262. *Sibth. oxon. n.* 329. *Hall. helv. n.* 1252. *Scop. carn. n.* 395. *Lœvs herborn. n.* 243. *Villars dauph.* 2. 248. *Krock. ſileſ. n.* 500.
N. ſylveſtris pallidus, calice luteo. *Bauh. pin.* 52. *Raii hiſt.* 1131. *ſyn.* 371. *Petiv. brit. t.* 67. *f.* 9.
N. luteus ſylveſtris. *Dod. pempt.* 227. 1.
N. luteus. *Trag.* 757.
Pſeudonarciſſus anglicus. *Ger.* 115. 2. *emac.* 133. 2. —vulgaris. *Park. parad.* 100.
Bulbocodium vulgatius. *Bauh. hiſt.* 2. 592. 2.
β. N. ſylveſtris multiplex calice carens. *Bauh. pin.* 54.
Common Double Daffodil.
γ. N. incomparabilis. *Peerleſs Daffodil.*
Mill. dict. n. 3. *Curt. magaz.* 121. *Park. parad.* 68. 1, 2.
Spathe one-flowered, nectary bell-ſhaped erect curled equalling the ovate petals.
[4. Narciſſus bicolor. *Two-coloured Narciſſus.*
Lin. ſpec. 415. *Reich.* 2. 18. *Gouan illuſtr.* 22. *Krock. ſileſ. n.* 501.
N. albus calice flavo alter. *Bauh. pin.* 52. *Raii hiſt.* 1032. 10. *Rudb. elyſ. t.* 70. *f.* 7.
N. alb. oblongo calice luteo præcox minor. *Park. parad.* 73. 1.
β. N. major. *Great Daffodil.*
Curt. magaz. 51.
N. major totus luteus calyce prælongo. *Bauh. pin.* 52. *Raii hiſt.* 1130. 2.
Narciſſi ſilveſtris alia icon. *Dod. pempt.* 227. 2.
Pſeudonarciſſus aureus hiſpanicus maximus. *Park. parad.* 99. *t.* 101. *f.* 1.
Spathe one-flowered, nectary bell-ſhaped with the margin ſpreading curled equalling the petals.
5. Narciſſus minor. *Leaſt Daffodil.*
Lin. ſpec. 415. *Reich.* 2. 18. *Curt. magaz.* 6.
N. parvus totus luteus. *Bauh. pin.* 53. *Rudb. elyſ.* 2. 72. *f.* 11.
N. ſylveſtris pallidus minimus. *Barr. ic.* 976.
Pſeudonarciſſus minor hiſpanicus. *Cluſ. hiſt.* 165. 3.—minimus. *Park. parad.* 105. 3. *Ger. emac.* 133. 4.

Bulbocodium minus. *Bauh. hiſt.* 2. 597. *Raii hiſt.* 1131.
Spathe one-flowered, nectary obcanical erect curled ſix-cleft equalling the lanceolate petals.
6. Narciſſus moſchatus. *Muſk Narciſſus.*
Lin. ſpec. 415. *Reich.* 2. 18.
N. totus albus, nutante flore, longa tuba. *Barr. ic.* 945. 946. 954. 953. 921. 922.
N. albus, calice flavo, moſcari odore. *Bauh. pin.* 52. *Rudb. elyſ.* 2. 69. *f.* 6. & 73. *f.* 15. 16.
N. flavus tubo rotundo. *Bauh. pin.* 52. *Rudb. elyſ.* 2. *p.* 68. *f.* 3. 4.
Spathe one-flowered, nectary cylindric truncate ſubrepand equalling the oblong petals.
7. Narciſſus triandrus. *Ruſh-leaved Narciſſus,* or *reflexed Daffodil.*
Lin. ſpec. 416. *Reich.* 2. 19. *Curt. magaz.* 48.
N. juncifolius, albo flore reflexo. *Cluſ. app. alt. Park. parad.* 92. 2. *t.* 93. *f.* 2.
N. albus oblongo calice. *Bauh. pin.* 53. *Rudb. elyſ.* 2. *p.* 72. *f.* 12. *Raii hiſt.* 1132.
Pſeudonarciſſus albo flore. *Ger. emac.* 134. *f.* 5.
Spathe one or two-flowered, flowers drooping, petals reflexed, three of the ſtamens longer.
8. Narciſſus orientalis. *Oriental Narciſſus.*
Lin. ſyſt. 317. *Reich.* 2. 19. *mant.* 62.
N. niveus calyce flavo odoris fragrantiſſimi. *Rudb. elyſ.* 2. *p.* 52. *f.* 2. *Bauh. pin.* 50.
N. latifolius ſimplex medio luteus. *Cluſ. hiſt.* 1. 154.
β. N. orientalis, calyce rotundo aureo luteo. *Rudb. elyſ.* 2. *p.* 54. *f.* 5. *Bauh. pin.* 50.
N. orient. medio croceus major. *Beſl. eyſt.*
γ. N. albus major odoratus. *Rudb. elyſ.* 2. *p.* 50 *f.* 1. *Bauh. pin.* 49.
N. latifolius major alter. *Cluſ hiſt.* 1. 155.
Spathe one or two-flowered, nectary bell-ſhaped trifid emarginate three times ſhorter than the petals.
9. Narciſſus trilobus.
Lin. ſpec. 417. *Reich.* 2. 19.
N. anguſtifolius pallidus, calyce flavo. *Bauh. pin.* 51. *Rudb. elyſ.* 2. *p.* 61. *f.* 3.
Spathe ſubmultiflorous, nectary bell-ſhaped ſubtrifid quite entire ſhorter by half than the petals.
10. Narciſſus odorus. *Sweet-ſcented Narciſſus,* or *Great Jonquil.*
Lin. ſpec. 416. *Reich.* 2. 19. *amoen.* 4. 311. *Curt. magaz.* 78.
N. polyanthos flore minore ſtellato toto luteo. *Rudb. elyſ.* 2. *p.* 60. *f.* 7.
N. anguſtifolius ſive juncifolius maximus amplo calice. *Park. parad.* 90. *t.* 89. *f.* 5.
Spathe one or two-flowered, nectary bell-ſhaped ſix-cleft even ſhorter by half than the petals, leaves ſemicylindric.
11. Narciſſus calathinus.
Lin. ſpec. 415. *Reich.* 2. 20.
N. anguſtifolius flavus magno caule. *Bauh. pin.* 51. *Rudb. elyſ.* 2. *p.* 60. *f.* 5.
N. IX. qui anguſtifolius 1. *Cluſ. hiſt.* 158.
Spathe many-flowered, nectary bell-ſhaped almoſt equalling the petals, leaves flat.
12. Narciſſus Tazetta. *Polyanthus Narciſſus.*
Lin. ſpec. 416. *Reich.* 2. 20. *hort. cliff.* 134. *Knorr. del.* 1. *t.* N. 3. *Tbunb. jap.* 131.
N. medio luteus copioſo flore odore gravi. *Bauh. pin* 50. *Rudb. elyſ.* 2. *p.* 57. *f.* 11.
N. luteus polyanthos luſitanicus. *Bauh. pin.* 50.
N. latifolius, flore prorſus albo 1. 2. *Cluſ. hiſt.* 1. 155
N. medio luteus polyanthos. *Ger.* 110. 7.—item, 8. 9. 10. *emac.* 124. 8. & 125. 9. 10.
N. narbonenſis vulgaris. *Park. parad.* 80. 2. *t.* 81. *f.* 3.—item, N. narb. f. medio luteus præcox. 80. 1. & N. narb. major amplo flore. 82. 3.
N. multos ferens flores medio-luteus narbonenſis. *Bauh. hiſt. Raii hiſt.* 1134.
Spathe many-flowered, nectary bell-ſhaped plaited truncate, three times ſhorter than the petals, leaves flat.
13. Narciſſus Bulbocodium. *Hoop-petticoat Narciſſus.*
Lin. ſpec. 417. *Reich.* 2. 20. *hort cliff.* 134. *Curt. magaz.* 88.
N. montanus alter flore fimbriato. *Bauh. pin.* 53. *Raii hiſt.* 1139. *Ger. emac.* 137. 7.

N. mon-

N. montanus juncifolius calice aureo. *Baub. pin.* 53. *Rudb. elyſ.* 2. *p.* 75. *f.* 5. 7.

Pſeudonarciſſus juncif. luteus minor. *Park. parad.* 106. *t.* 107 *f.* 7.

Spathe one flowered, nectary turbinate larger than the petals, genitals declining.

14. Narciſſus ſerotinus. *Late-flowering Narciſſus.* *Lin. ſpec.* 417. *Reich.* 2. 21. *Loeſl. it.* 19. *Cluſ. hiſt.* 1. 162.

N. albus autumnalis minimus. *Baub. pin.* 51. *Rudb. elyſ.* 2. *p.* 64. *f.* 8. *Raii hiſt.* 1138.

N. autumnalis minor. *Cluſ. hiſp.* 251. *t.* 252. *Ger.* 113. 15 *emac.* 131. 24.

Spathe one flowered, nectary ſix-parted very ſhort, leaves awl-ſhaped.

15. Narciſſus Jonquilla. *Common Jonquill.* *Lin. ſpec.* 417. *Reich.* 2. 21. *hort. cliff.* 134. *Sauv. monſp.* 19. *Curt. magaz.* 15.

N. juncifolius luteus minor. *Baub pin.* 51.—item, oblongo calice luteus major. *Baub. pin.* 51.

N. junc. minor & 2. *Cluſ. hiſp.* 1. 159. *Raii hiſt.* 1138.

N. juncifolius. *Ger.* 112. 11, 12. *emac.* 127. 15, 16.

β. Flore pleno. *Double Jonquill.*

Spathe many-flowered, nectary bell-ſhaped ſhort, leaves awl-ſhaped.

DESCRIPTIONS, *&c.*

1. The White Narciſſus has a ſmaller and rounder bulb than the common Daffodil. The leaves are longer, narrower and flatter. The ſtalk or ſcape does not riſe higher than the leaves, which are of a gray colour. At the top of the ſtalk comes out one flower from the ſpathe, nodding on one ſide. Corolla ſnow white, ſpreading open flat, the petals rounded at the points. The nectary or cup in the centre is very ſhort, and fringed on the border with a bright purple circle. The flowers have an agreeable odour, appear in may, and ſeldom produce ſeeds. The double white Narciſſus is a variety of this.

[The leaves are rounded on the keel, and reflected at the edge[1]. Villars remarks, that in moiſt mountain paſtures the roots come in bundles, producing a conſiderable packet of narrow erect leaves of an aſh-coloured green colour. The ſcape bears one flower, ſeldom two, hanging down, ſpreading, compoſed of ſix lanceolate petals ſeparate from each other, and having a little red (crimſon) circle in the middle, waved or fringed.

Curtis makes two varieties of this; the common one deſcribed above, which he calls *anguſtifolius*, flowering in april, and the *majalis*, flowering ſix weeks later.

It is a native of Italy, the South of France, Switzerland, and Carniola. Said alſo to be found wild in England on ſandy heaths, as at Shorne between Graveſend and Rocheſter: at Wood Baſtwick and other places in Norfolk[m].

It was cultivated here in 1570, as appears from Lobel[n].

From the deſcriptions of Theophraſtus, Dioſcorides and Pliny, there is little doubt of this ſpecies being the Narciſſus of thoſe authors and of the poets. The next ſpecies, if it be really diſtinct, was probably not conſidered as a ſeparate ſpecies by the ancients, ſince Ovid deſcribes his Narciſſus to have a yellow cup; whereas Dioſcorides makes it purple, and Pliny ſometimes one, ſometimes the other[o].

2. The pale Daffodil or Primroſe peerleſs, as it is called by our old authors, uſually produces two flowers, it frequently occurs however with one, more rarely with three, in a high ſtate of culture it probably may be found with more. When it has only one flower it may eaſily be miſtaken for one of the varieties of the preceding, which Mr. Curtis calls *majalis*; but it may be thus diſtinguiſhed from it: the petals are of a yelloviſh hue, or rather a pale cream colour; the nectary is wholly yellow, not having the orange or crimſon rim; and it flowers at leaſt three weeks earlier; the top alſo of the flowering ſtem in this, very ſoon after it emerges from the ground, bends down and becomes elbowed; whereas in the *majalis* it continues upright till within a ſhort time of the flowers expanding[p].

Native of ſeveral parts of Europe. Gerarde ſays that it grows wild in fields and by the ſides of woods in the weſt of England. Cluſius alſo reports that he had been credibly informed of its being a native of England. Ray had ſometimes obſerved it wild, but ſuſpected that it might have originally come out of gardens. James Sherard, M. D. found it near Hornſey-church; Mr. Blackſtone in ſeveral places near Harefield; Mr. Vernon at Bellow-hill near Whitchurch, Cheſhire; Mr. Wood near Halifax. It flowers towards the end of april.

β. Mr. Curtis has figured a Narciſſus under the name of M. tenuior, which ſeems to be ſcarcely a diſtinct ſpecies, though it has only one flower on the ſcape. The root is the ſize of a ſmall nutmeg, of a pale brown colour. Leaves about a ſpan long, very narrow, at their baſe ſcarcely a quarter of an inch wide, tapering gradually to a point, which is ſomewhat obtuſe, the outer ſide is convex and ſomewhat fluted, the inner concave, not glaucous. Stalk ſomewhat longer than the leaves, round, ſlightly flattened, eſpecially on its upper part, ſupporting on its ſummit one flower, of a fragrance leſs powerful than that of the Jonquill, and more ſo than that of *odorus*. Spathe membranous, length of the pedunicle, which is about an inch long. Flower, when fully blown, ſtanding horizontally; tube greenith, nearly cylindrical, ſomewhat longer than the pedunicle; border flat, divided into ſix ſegments, of a pale yellow or ſulphur colour, ovate, three alternate ſegments larger, each terminating in a ſhort dagger-point. Nectary yellow, in form like that of N. biflorus, plaited, the margin, as the flower declines becoming brown. Anthers of the three longer ſtamens viſible in the mouth of it.

Mr. Curtis firſt obſerved this Narciſſus in the month of may 1794, in a ſingle, but moſtly in a double ſtate, in the garden of Mr. James Maddock, florift at Walworth, who obtained it from Holland. It appears to have been long cultivated by the Dutch, and from its hardineſs is probably of European origin. It is inferior in ſize and beauty to many others; but as a ſpecies Mr. Curtis thinks it very diſtinct.] Mr. Miller alſo has a variety, which he names *N. albus*, n. 5. the petals, he ſays, are whiter and reflexed; the border of the cup is gold-coloured.

3. Common Engliſh Daffodil has a large bulbous root, from which come out five or ſix flat leaves, about a foot long, and an inch broad, of a grayiſh colour, and a little hollow in the middle like the keel of a boat. The ſtalk riſes a foot and half high, having two ſharp longitudinal angles; at the top comes out one nodding flower, incloſed in a thin ſpathe. The corolla is of one petal, being connected at the baſe, but cut almoſt to the bottom into ſix ſpreading parts; in the middle is a bell-ſhaped nectary, called by gardeners the cup, which is equal in length to the petal and ſtands erect. The petal is of a pale brimſtone or ſtraw colour, and the nectary is of a full yellow. Seeds roundiſh, black.

[The ſcape is a little longer than the leaves. Petals ovate-lanceolate, the three outer longer and narrower than the three inner. The rim of the nectary is a little plaited and ſnipt. Germ three-ſided. Seeds kidney-form, rough[s].

Native of many parts of Europe; Spain, Italy, Germany, Switzerland, France, England, in paſtures, woods and hedges; flowering in march. Near Charlton, Woolwich and Erith in Kent; in Norfolk; Whitwell near Caton, and Whittleſford in Cambridgeſhire; Noke woods in Oxfordſhire; about Halifax very abundantly; in Lancaſhire; Hanley Caſtle in Worceſterſhire; Malely in Shropſhire; about Sutton Coſield, and beyond Erdington on the road from Birmingham to Sutton, it covers almoſt a whole field.]

Varieties are

1. With white petals and a pale yellow cup,
2. With yellow petals and a golden cup.

[1] Engl. bot. [m] Withering and Engl. bot. [n] Hort. kew. [o] Virg. Georg. 4. 122. ed. Mart. note. [p] Curtis. [s] Haller, Krocker, Withering.

3. With a double flower.
4. With three or four cups within each other.
5. Tradescant's Daffodil.
[6. Peerless Daffodil.

Parkinson has many varieties, as

1. Pseudonarcissus anglicus flore pleno, or Gerarde's double Daffodil; he having first discovered it in a poor woman's garden in the west of England: it is said to be natural in the Isle of Wight[1]. This circumstance is not mentioned in Gerarde's herbal. He there says that he received the double yellow Daffodill from Robinus of Paris.
2. Pseudonarcissus aureus maximus flore pleno, f. roseus Tradescanti, or John Tradescant's great Rose Daffodill. The same with n. 5. above. This Prince of Daffodils, says Parkinson, belongeth primarily to John Tradescant, as the first founder thereof, and may well be entituled the Glory of Daffodils. The flower is very much spread open, consisting of smaller and shorter leaves than the next, but more in number, thicker and rounder set together, making it seem as great and double as any Provence Rose, and intermixt with divers yellow and pale leaves, as if it were in rows one under another. It abideth long in flower, and spreadeth to be the broadest in compass of any of the Daffodils[2].
3. Pseudonarcissus aureus anglicus maximus, or Wilmer's great double Daffodil. This differs from the common sort (n. 1.) only in the largeness of the leaves and flowers, and the stateliness of growth. The stalk is two feet high, the flower great and fair, each leaf of it twice as large and broad as the former, diversely intermixt with a row of paler and of deeper yellow leaves, both growing deeper by standing. This we had from Vincent Sion, born in Flanders, dwelling on the Bank side, an industrious and worthy lover of fair flowers, who cherished it in his garden for many years until the year 1620, when it flowered, and he shewed it to Mr. John de Franqueville, of whom he supposed he received it; who finding it to be a kind never known to us before, caused him to respect it the more, as it is well worthy. And George Wilmer, of Stratford Bow, Esq. having likewise received it of him, as myself did also, would needs appropriate it to himself, and call it by his own name, which since hath so continued[3].
4. Narcissus latifolius omnium maximus amplo calice flavo, five Nompareille. The great Nonesuch or Incomparable Daffodill. Stalk two feet high at the least. Flower large, single, consisting of six very pale yellow large leaves, almost round at the point, with a large cup in the middle somewhat yellower, the bottom whereof is narrow and round, rising wider to the mouth, which is very large and open, unevenly cut in or indented about the edges; this cup doth well resemble the chalice, that in former days with us, and beyond the seas is still used to hold the Sacramental Wine. The flower hath sometimes ten or twelve leaves, and a cup much larger.

Narcissus omnium maximus flore & calice flavo. The great yellow Incomparable Daffodill. This differs neither in form, nor bigness of leaf or flower from the former; but in the colour of the circling leaves of the flower, which are of the same yellow colour with the cup. This sometimes brings two flowers upon a stalk distinct, and sometimes two flowers almost together, as if they were but one[4].]

Mr. Miller considers this as a species distinct from our common Daffodil; from which it differs in having longer leaves, of a darker green, and higher flower-stalks; the segments of the petal also are rounder, and spread open flatter; the cup is about half the length of the petal, and is edged with a gold-coloured fringe. It flowers in april; and varies more than any other.

The roots, the first year, produced very double flowers; the six outer segments longer than the others and white, the middle very full of shorter petals, some white others yellow, collected into a globular figure. Some of these roots, the following year, produced flowers less double, with no white petals, but the largest petals sulphur-coloured, and the others yellow. From this they afterwards degenerated to half-double flowers; and at last to single flowers, with a cup half the length of the petal, in which manner they continued to flower many years: we may conclude therefore that the last was the natural state of the flower. [In this state Mr. Curtis has figured it as a distinct species. He says, that the petals are usually pale yellow, and the nectary inclining to orange, which towards the brim is more brilliant in some than in others. In its double state it is well known to gardeners by the name of Butter and Egg Narcissus; and of this there are two varieties, one with colours like the single one above-mentioned, the other with petals of a pale sulphur colour, almost white, and the nectary bright orange, which is named in the Dutch catalogues *Orange Phœnix*, is the most ornamental among the several varieties, and has flowers so large as frequently to require support. If the bulbs be not taken up yearly, they will degenerate as Mr. Miller represents.] He received roots of it from Spain and Portugal.

[Parkinson enumerates other varieties, as

5. Narcissus maximus griseus calice flavo. The peerless gray Daffodill: which has the six outer leaves of the flower of a glistering whitish gray colour, and the cup yellow, longer than that of the preceding.
6. Narcissus latifolius, flavo flore, amplo calice. The lesser yellow Nonpareille or the Lady Matteoffes Daffodill, by which name it was known in the Low Countries, Clusius having received it from her.—The leaves of this are shorter and narrower, the stalk not so high, the flower smaller, the cup and petals both pale yellow, yet more yellow than in the former, the cup smaller, and neither so small in the bottom, nor so large at the edges, nor so crumpled at the brims[5].

But of these varieties enough.

4. This resembles the Common Daffodil, but the petals are white, the nectary is dark yellow and larger, with a spreading, waved, notched border[6]. Gouan says it is easily distinguished by its leaves scarce a palm in length and half an inch in breadth; by its large flower, with cordate-ovate petals, imbricate at the base, and sulphur-coloured; and by the nectary having a reflex mouth, twelve-cleft or thereabouts, the lobes also being toothed and curled: the scape is the length of the leaves, or a little shorter, and thick.

Native of the South of Europe, flowering in april and may. Cultivated in 1629 by Parkinson[7].

β. This is the largest of the genus, and bears the most magnificent flowers: though it has long been known in this country, it is confined to the gardens of the curious. It approaches in its general appearance very near to the Common Daffodil, but it is a much taller plant, and has its leaves more twisted, as well as more glaucous: the flower, but especially the nectary, is much larger, and the petals are more spreading. It answers to the *bicolor* of Linnæus in every respect but colour, which is always a fine deep yellow. It varies with double flowers. It is a native of Spain, and flowers with us in april. Parkinson calls it the great yellow Spanish bastard Daffodill[8].

5. The Little Daffodil is nearly related to the Common sort, but is three times smaller in all its parts: the scape is scarcely striated: the spathe is greenish: the flowers more nodding: the petals distinct at the base, lanceolate, straight, not oblique or ovate: margin of the nectary six-cleft, waved, curled[9].

Though the flowers are not so large as those of the other species, yet when the roots are planted in a cluster, they make a very pretty show, and have this advantage, that they flower somewhat earlier than any of the others[10].

Native of Spain. Cultivated in 1629, according to Parkinson[11].

6. Nectary cylindric, with the mouth obscurely repand, neither toothed nor curled.—Native of Spain.

[1] Park. parad. 103. [2] 102. n. 1. [3] 102. n. 2. & 104. [4] Parad. p. 68. 1. 2. [5] Parad. p. 69. [6] Linn. spec. [7] Hort. kew. [8] Curtis. [9] Linn. spec. [10] Curtis. [11] Hort. kew.

7. This is of the same size with N. poeticus, but the leaves are narrower by half and channelled. Spathe one-flowered. The whole corolla snow-white. Petals ovate-oblong. Nectary bell-shaped, shorter by half than the corolla, with the margin straight, and unequally crenulate. Stamens three, seldom six. Anthers dark yellow, shorter than the nectary [a].

The N. triandrus of our nurseries near London is pale yellow, Mr. Curtis's figure has two flowers from a spathe, there are constantly six stamens, three reaching no farther than the mouth of the tube [b].

Parkinson's figure has three flowers from a spathe. He describes it as having three, four or more snow white flowers, standing upon long green footstalks, every flower hanging down his head, and turning up his six narrow and long leaves, even to the very footstalk again: from the middle of the flower hangeth down a long round cup, as white as the leaves, within which are contained three small white chives tipt with yellow, and a small long pointell, thrusting out beyond the brims of the cup.

Parkinson has described several others with reflexed petals, probably varieties of this. One wholly of a gold colour, both cup and petals. A second yellow with a white cup. A third white with a yellow cup [c].

Linnæus makes it native of the Pyrenees, in which he is followed by Mr. Curtis: according to the Kew catalogue, it is from Portugal. Clusius says that a French herbarist, named Nicolas le Quet or Quilt, who searched the Pyrenees and Spain every year, introduced it in 1599. It was cultivated in England in 1629, as appears from Parkinson [d]. It seems afterwards to have been lost, and to have been re-introduced lately [e].

8. This is a broad-leaved species, having the appearance of N. Tazetta. Corolla white. Nectary erect, half or one-third of the length of the petals, trifid, yellow with the lobes emarginate [f]. Of this there are several varieties.

Native of the Levant. Cultivated in 1758 by Mr. Miller. It flowers in may [g].

9. This resembles N. Jonquilla, but the nectary is cylindric, more than half the length of the petals, not cutted, but obscurely three-lobed.—Native of the South of Europe [h].

10. Flower deep yellow, three times as large as that of N. Tazetta, sometimes one only from a spathe, sometimes more: nectary not fringed, but divided at the mouth into six blunt lobes [i].

Parkinson says, it bears two or three very fair large flowers, with a large and more open cup, than any other of the Rush Daffodils, both of a fair yellow colour, yet the cup a little deeper, and a little crumpled about the edges.

This species, which, as its name implies, possesses more fragrance than many of the others, is a native of the South of Europe, flowers in april, and varies with double flowers. Mr. Miller takes no notice of it, except merely as a variety of N. Jonquilla [k]. He cultivated it in 1758. It flowers in april and may [l].

11. This resembles N. Tazetta very much, but the petals are a little larger and sharper: the nectary is the same length with the petals [m].

Leaves two or three, a foot or more in length. Stem slender, strong, a foot in length. Flowers two or three from a spathe, very elegant, large and loose: petals yellow: cup half an inch long, situated at the edge, of a deeper yellow colour. It has the odour of the Jonquil [n].

Clusius first observed this in flower in april 1593, in the garden of Theodoric Clutius or Cluyts, prefect of the Academic Garden at Leyden: both Cluyts and Cornelius van Hille, a minister at Rotterdam, gave him bulbs of it.—Native of the South of Europe and the Levant.

12. Bulbs large, roundish. Leaves three or four, long, narrow, plane. Scape or flower-stalk upright, broadish; angular, concave, from ten or twelve to eighteen inches in height. Flowers six or seven to ten from one spathe, very fragrant, clustered, white or yellow.

Native of Spain and Portugal, the South of France, Italy and Japan; Mr. Miller adds the islands of the Archipelago, and Parkinson the neighbourhood of Constantinople. Clusius observed it at the end of january 1565 in Spain and Portugal, and at the beginning of february at Gibraltar. Ray found it in Italy between Leriei and Massa and between Massa and Lucca, in april: also about Montpelier in february and march.]

There is a greater variety of the Polyanthus Narcissus than of all the other species; for the flowers being very ornamental and coming early in the spring, the florists in Holland, Flanders and France have taken great pains in cultivating and improving them.

The principal varieties are these:

1. Petals yellow, with orange, yellow, or sulphur-coloured cups or nectaries.
2. Petals white, with orange, yellow or sulphur-coloured cups or nectaries.
3. Petals white, with white cups or nectaries.
4. Double flowers of the different varieties.

[The Dutch and London Catalogues contain about an hundred subvarieties under these heads, with pompous names, which are too subject to the light breath of fashion and caprice to be enumerated here.]

The varieties with white petals and white cups are not so much esteemed as the others; there are however two or three with large bunches of small white flowers, which are valuable for their agreeable odour, and for flowering later than most of the others. There is also one with very double flowers, the outer petals white, those in the middle some white, others orange-coloured. This has a very agreeable scent, flowers early, and is generally called the Cyprus Narcissus. It is the most beautiful of all the varieties, when blown in glasses in a room.

[Gerarde describes and figures this variety under the name of Narcissus albus polyanthos, or double white Daffodil of Constantinople, whence he says it was sent into England unto the right honorable the Lord Treasurer among other bulbed flowers.]

13. Bulbs small. Leaves very narrow, having some resemblance to those of the Rush, but a little compressed, with a longitudinal furrow on one side, they are seldom more than eight or nine inches long. Flower-stalk slender, taper, about six inches long: petal scarce half an inch long, cut into six acute segments; the nectary or cup is more than two inches long, very broad at the brim, lessening gradually to the base, formed somewhat like the old farthingale or bell-hoop petticoat worn by the ladies. It is a native of Portugal, whence Mr. Miller received the roots. [but it was also cultivated in the time of Parkinson [o], though now amid the multitude of novelties that flow in upon us from every quarter it is not common in our flower-borders. Mr. Curtis informs us that he has seen it grow abundantly in some gardens in Hampshire. It flowers in april or may.]

14. Bulb small. Leaves few, narrow. Stalk jointed, nine inches high. Corolla white, cut into six narrow segments: cup yellow. It flowers late in the autumn. Native of Spain, Italy and Barbary. Cultivated by Mr. Miller before 1759.

15. The Jonquil from the narrowness of its leaves, like those of Rushes, has its name, and is called by old authors *Narcissus juncifolius*: there are two or three of them usually on a plant, and they are angular, fleshy and almost round. Scape round, hollow, producing at top from three to five flowers from a spathe, sometimes no more than two, very fragrant petals orbiculate or mucronate, both they and the cup yellow. Bulb small, white, covered with dark membranes [p]. Native of Spain. Cultivated by Gerarde in 1597. It flowers in april and may, and varies with double flowers [q].]

PROPAGATION AND CULTURE.

1 to 7, &c. All the hardy sorts of Daffodil and Narcissus may be planted in large borders of the flower garden, where being intermixed with other bulbs they

[a] Linn. spec. [b] Hort. kew. [c] Curt. magaz. [d] Hort. kew. [e] Linn. spec. [f] Hort. kew. [g] Curt. magaz. [h] Linn. spec. [i] Idem. [k] Curtis. [l] Hort. kew. [m] Linn. spec. [n] Clusius. [o] Hort. kew. [p] Clusius. [q] Hort. kew.

afford

afford an agreeable variety. They will thrive in almoſt any ſoil or ſituation, and even under the ſhade of trees, where they will produce annually in the ſpring great quantities of flowers for ſeveral years together without tranſplanting, and make a good appearance before the trees come out in leaf.

[They increaſe abundantly by offsets. The double ſorts ſhould be taken up yearly, to prevent their becoming ſingle.]

12. I ſhall firſt treat of the method for raiſing the fine ſorts of Polyanthus Narciſſus from ſeeds, which is the way to obtain new varieties.

The not practiſing this has occaſioned our ſending abroad annually for great quantities of flower-roots, which have been kept up to a high price, on account of the great demand for them in England; whereas if we were as induſtrious to propagate them as our neighbours, we might ſoon vie with them, if not outdo them, in moſt ſorts of flowers, as may be ſeen, by the vaſt variety of Carnations, Auriculas, Ranunculas, &c. which have been produced from ſeeds in England, and exceed moſt of thoſe kinds in any part of Europe.

You muſt be very careful in ſaving your ſeeds, to gather none but from ſuch flowers as have good properties, and particularly from ſuch only as have many flowers upon a ſtalk, that flower tall, and have beautiful cups to their flowers; from ſuch you may expect to have good flowers produced; but if you ſow ordinary ſeed, it is only putting yourſelf to trouble and expenſe to no purpoſe, ſince from ſuch ſeeds there can be no hopes of procuring any valuable flowers.

Having provided yourſelf with good ſeeds, you muſt procure either ſome ſhallow caſes or flat pans, made on purpoſe for the raiſing of ſeedlings, which ſhould have holes in their bottoms, to let the moiſture paſs off; theſe muſt be filled with freſh, light, ſandy earth about the beginning of auguſt (that being the ſeaſon for ſowing the ſeeds of moſt bulbous-rooted flowers;) the earth in theſe muſt be levelled very even; then ſow the ſeeds thereon pretty thick, covering them over with fine ſifted light earth about half an inch thick, and place the caſes or pans in a ſituation where they may have only the morning ſun till about ten o'clock, where they ſhould remain until the beginning of october, when they muſt be removed into a warmer ſituation, placing them upon bricks, that the air may freely paſs under the caſes, which will preſerve them from being too moiſt.

They ſhould alſo be expoſed to the full ſun, but ſcreened from the north and eaſt winds; and if the froſt ſhould be ſevere, they muſt be covered, otherwiſe there will be danger of their being deſtroyed; in this ſituation they may remain until the beginning of april, by which time the plants will be up, when you muſt carefully clear them from weeds: and if the ſeaſon ſhould prove dry, they muſt be frequently watered: the caſes ſhould alſo now be removed into their former ſhady poſition, or ſhaded in the middle of the day, for the heat of the noon-day ſun will be too great for the young plants.

The latter end of june, when the leaves of the plants are decayed, you ſhould take off the upper ſurface of the earth in the caſes (which by that time will have contracted a moſſineſs, and, if ſuffered to remain, will greatly injure the young roots) obſerving not to take it ſo deep as to touch the roots; then ſift ſome freſh light earth over the ſurface, about half an inch thick, which will greatly ſtrengthen the roots: the ſame ſhould alſo be repeated in october, when the caſes are moved again into the ſun.

During the ſummer ſeaſon, if the weather ſhould prove very wet, and the earth in the caſe appear very moiſt, you muſt remove them into the ſun till the earth be dry again; for if the roots receive much wet during the time they are inactive, it very often rots them; therefore you muſt never give them any water after their leaves are decayed, but only place them in the ſhade, as was before directed.

Thus you ſhould manage them the two firſt ſeaſons, till their leaves are decayed; but the ſecond ſummer after ſowing, you ſhould carefully take up the roots; which may be done, by ſifting the earth in the caſes through a fine ſieve, whereby the roots will be eaſily ſeparated from the earth; then having prepared a bed or two of good freſh light earth, in proportion to the quantity of your roots, you ſhould plant them therein, at about three inches diſtance every way, and about three inches deep in the ground.

Theſe beds ſhould be raiſed above the level of the ground, in proportion to the moiſture of the ſoil, which if dry, three inches will be enough; but if it be wet, they muſt be raiſed ſix or eight inches high, and laid a little rounding, to ſhoot off the wet.

If theſe beds are made in july, which is the beſt time to tranſplant the roots, the weeds will ſoon appear very thick; therefore you ſhould gently hoe the ſurface of the ground to deſtroy them, being very careful not to cut ſo deep as to touch any of the roots; and this ſhould be repeated as often as may be found neceſſary, by the growth of the weeds, obſerving always to do it in dry weather, that they may be effectually deſtroyed; and toward the latter end of october, after having entirely cleared the beds from weeds, you ſhould ſift a little rich light earth over them, about an inch thick; the goodneſs of which will be waſhed down to the roots by the winter's rain, which will greatly encourage their ſhooting in the ſpring.

If the cold ſhould be very ſevere in winter, you ſhould cover the beds either with old tan or ſea-coal aſhes, or in want of theſe with Peaſe-haulm, or ſome ſuch light covering, to prevent the froſt from penetrating the ground to the roots, which might greatly injure them while they are ſo young.

In the ſpring, when the plants begin to appear above ground, you muſt gently ſtir the ſurface of the ground, clearing it from weeds, &c. in doing of which, you ſhould be very careful not to injure the plants; and if the ſeaſon ſhould prove dry, you ſhould now and then gently refreſh them with water, which will ſtrengthen the roots.

When their leaves are decayed, you ſhould clear the beds from weeds, and ſift a little earth over them (as was before directed) which muſt alſo be repeated in october, in like manner; but the roots ſhould not remain longer in theſe beds than two years, by which time they will have grown ſo large as to require more room; therefore they ſhould be taken up as ſoon as their leaves are decayed, and planted into freſh beds, which ſhould be dug deep, and a little very rotten dung buried in the bottom, for the fibres of the roots to ſtrike into. Then the roots ſhould be planted at ſix inches diſtance, and the ſame depth in the ground.

In the autumn, before the froſt comes on, if ſome rotten tan is laid over the beds, it will keep out the froſt, and greatly encourage the roots; and if the winter ſhould prove ſevere, it will be proper to lay a greater thickneſs of tan over the beds, and alſo in the alleys, to keep out froſt, or to cover them over with ſtraw, or peaſe-haulm, otherwiſe they may be all deſtroyed by the cold. In the ſpring theſe coverings ſhould be removed, as ſoon as the danger of hard froſt is over, and the beds muſt be kept clean from weeds the following ſummer: at Michaelmas they ſhould have ſome freſh earth laid over the beds, and covered again with tan, and ſo every year continued till the roots flower, which is generally in five years from ſeed, when you ſhould mark all ſuch as promiſe well, which ſhould be taken up as ſoon as their leaves decay, and planted at a greater diſtance in new prepared beds; but thoſe which do not flower, or thoſe you do not greatly eſteem, ſhould be permitted to remain in the ſame bed; therefore, in taking up thoſe roots which you marked, you muſt be careful not to diſturb the roots of thoſe left, and alſo to level the earth again, and ſift ſome freſh earth over the beds (as before) to encourage the roots; for it often happens in the ſeedlings of theſe flowers, that at their firſt time of blowing, their flowers ſeldom appear half ſo beautiful as they do the ſecond year; for which reaſon none of them ſhould be rejected until they have flowered two or three times, that ſo you may be aſſured of their worth.

Thus having laid down directions for the ſowing and managing theſe roots, until they are ſtrong enough to flower,

flower, I ſhall proceed to give ſome inſtructions for planting and managing the roots afterwards, ſo as to cauſe them to produce large fair flowers.

All the ſorts of Narciſſus which produce many flowers upon a ſtalk, ſhould have a ſituation defended from cold and ſtrong winds, otherwiſe they will be ſubject to be injured by the cold in winter, and their ſtems broken down when in flower; for notwithſtanding their ſtalks are generally pretty ſtrong, yet the number of flowers upon each renders their heads weighty, eſpecially after rain, which lodges in the flowers, and, if ſucceeded by ſtrong winds, very often deſtroys their beauty, if they are expoſed thereto; ſo that a border under a hedge, which is open to the ſouth-eaſt, is preferable to any other poſition for theſe flowers.

The morning ſun riſing upon them will dry off the moiſture which had lodged upon them the preceding night, and cauſe them to expand fairer than when they are planted in a ſhady ſituation; and if they are too much expoſed to the afternoon ſun, they will be hurried out of their beauty very ſoon; and the ſtrong winds uſually coming from the weſt and ſouth-weſt points, they will be expoſed to the fury of them, which frequently is very injurious to them.

Having made choice of a proper ſituation, you muſt then proceed to prepare the earth neceſſary to plant them in; for if the natural ſoil of the place be very ſtrong or poor, it will be proper to make the border of new earth, removing the former ſoil away about three feet deep. The beſt earth for theſe flowers is a freſh, light, hazel loam, mixed with a little very rotten neats dung: this ſhould be well mixed together, and often turned over, in order to ſweeten it; then having removed away the old earth to the fore-mentioned depth, you ſhould put a layer of rotten dung or tan in the bottom, about four or five inches thick, upon which you muſt lay ſome of the prepared earth about eighteen or twenty inches thick, making it exactly level; then having marked out by line the exact diſtances at which the roots are to be planted (which ſhould not be leſs than ſix or eight inches ſquare) you muſt place the roots accordingly, obſerving to ſet them upright; then you muſt cover them over with the before-mentioned earth about eight inches deep, being very careful in doing it, not to diſplace the roots; when this is done, you muſt make the ſurface of the border even, and make up the ſide ſtraight, which will appear handſome.

The beſt time for planting theſe roots is in the end of auguſt, or beginning of ſeptember; for if they are kept too long out of the ground, it will cauſe their flowers to be weak. You ſhould alſo obſerve the nature of the ſoil where they are planted, and whether the ſituation be wet or dry, according to which you ſhould adapt the freſh earth, and order the beds; for if the ſoil be very ſtrong and the ſituation moiſt, you ſhould then make choice of a light earth, and raiſe the beds ſix or eight inches, or a foot, above the level of the ground, otherwiſe the roots will be in danger of periſhing by too much wet; but if the ſituation be dry and the ſoil naturally light, you ſhould then allow the earth to be a little ſtronger, and the beds ſhould not be raiſed above three or four inches high; for if they are made too high, the roots will ſuffer very much, if the ſpring ſhould prove dry, nor would the flowers be near ſo fair. As alſo in very ſevere winters, theſe beds which are raiſed much above the level of the ground, will be more expoſed to the cold than thoſe which are lower, unleſs the alleys are filled up with rotten tan or litter.

During the ſummer, the only culture theſe flowers require is, to keep them free from weeds; and when their leaves are entirely decayed, they ſhould be raked off, and the beds made clean: but by no means cut off their leaves till they are quite decayed, as it is by ſome practiſed, for that greatly weakens the roots.

Towards the middle of october, if the weeds have grown upon the beds, you ſhould in a dry day gently hoe the ſurface of the ground to deſtroy them, obſerving to take it over ſmooth again; and before the froſts come on, the beds ſhould be covered over two inches thick with rotten tan, to keep out the froſt: after which they will require no farther care till the ſpring, when their leaves will appear above ground; at which time you ſhould gently ſtir the ſurface of the earth with a ſmall trowel, being very careful not to injure the leaves of the plants, and rake it ſmooth with your hands, clearing off all weeds, &c. which, if ſuffered to remain at that ſeaſon, will ſoon grow ſo faſt as to appear unſightly, and will exhauſt the nouriſhment from the earth. With this management theſe roots will flower very ſtrong, ſome of which will appear in march, and the others in april, which, if ſuffered to remain, will continue in beauty a full month, and are, at that ſeaſon, very great ornaments to a flower-garden.

After the flowers are paſt, and the leaves decayed, you ſhould ſtir the ſurface of the ground, to prevent the weeds from growing; and if at the ſame time you lay a little very rotten dung over the ſurface of the beds, the rain will waſh down the ſalts thereof, which will greatly encourage the roots the ſucceeding year.

During the ſummer ſeaſon they will require no farther care, but to keep them clear from weeds till october, when the ſurface of the beds ſhould be again ſtirred, raking off all weeds, &c. and laying ſome good freſh earth over the beds about an inch deep, which will make good the loſs ſuſtained by weeding, &c. and in the ſpring you muſt manage as was directed for the preceding year.

Theſe roots ſhould not be tranſplanted oftener than every third year, if they are expected to flower ſtrong and make a great increaſe; becauſe the firſt year after removing, they never flower ſo ſtrong as they do the ſecond and third; nor will the roots increaſe ſo faſt, when they are often tranſplanted, but if you let them remain longer than three years unremoved, the number of offſets which by that time will be produced, will weaken the large bulbs, and cauſe them to produce very weak flowers; therefore at the time of tranſplanting them, all the ſmall offſets ſhould be taken off, and planted in a nurſery-bed by themſelves, but the large bulbs may be planted again for flowering. If you plant them in the ſame bed where they grew before, you muſt take out all the earth two feet deep, and fill it up again with freſh, in the manner before directed, which will be equal to removing them into another place: this is the conſtant practice of the gardeners in Holland, who have but little room to change their roots, therefore they every year remove the earth of their beds, and put in freſh, ſo that the ſame place is conſtantly occupied by the like flowers. But thoſe people take up their roots every year, for as they cultivate them for ſale, the rounder their roots are, the more valuable they will be: the way to have them ſo is, to take their offſets from them annually; for when their roots are left two or three years unremoved, the offſets will have grown large, and theſe preſſing againſt each other, will cauſe their ſides to be flatted; ſo that where the roots are propagated for ſale, they ſhould be annually taken up as ſoon as their leaves decay, and the large bulbs may be kept out of the ground till the middle or end of october, but the offſets ſhould be planted the beginning of ſeptember or ſooner, that they may get ſtrength, ſo as to become blowing roots the following year: but where they are deſigned for ornament, they ſhould not be removed oftener than every third year, for then the roots will be in large bunches, and a number of ſtalks with flowers coming from each bunch, they will make a much better appearance than where a ſingle ſtalk riſes from each root, which will be the caſe when the roots are annually removed.

[Perſons who are nice in theſe flowers, ſhelter them by an awning during the time of flowering to keep off ſun, rain and wind, as is practiſed with Auriculas, Carnations and other very handſome delicate flowers, to preſerve the beauty of the bloom, and to continue it longer. The Polyanthus-Narciſſus may be blown in glaſſes in rooms during the winter and early in the ſpring, from october to march.]

10, 11, 15. The Jonquils ſhould be planted in beds

or borders, separate from other roots, because these require to be transplanted at least every year, otherwise their roots are apt to grow long and slender, and seldom flower well after; which is also the case, if they are continued many years in the same soil; wherefore the roots should be often removed from one part of the garden to another, or at least, the earth should be often renewed, which is the most probable method to preserve their flowers in perfection.

The soil in which these flowers succeed best, is an hazel loam, neither too light nor over stiff; it must be fresh, and free from roots of trees or noxious weeds, but should not be dunged; for it is very remarkable, that where the ground is made rich, they seldom continue good very long, but are subject to shoot downwards, and form long slender roots.

These flowers are greatly esteemed by many people for their strong sweet scent, though there be very few ladies that can bear the smell of them, especially if confined in a room.

[Where the smell of the Jonquils can be endured, they are blown with success in glasses, as well as the Polyanthus Narcissus. The glasses should be filled up to the bottom of the bulb with fresh soft water: place them in a light warm room, near windows which have the benefit of the sun; and keep up the water to the same height, by putting in a fresh supply every fortnight or three weeks. These and other flowers may also be brought forward in a warm room in pots set in pans of water; or still more effectually in stoves or hot-beds, by which means a succession of these flowers may be obtained during the winter and spring till they appear in the natural ground.

NARCISSUS. See *Amaryllis, Antherícum, Ferraria, Hæmanthus, Leucóium, Pancrátium.*

NARD. See *Andropogon Nardus.*

Nardo Celtícæ simílis. See *Valeriana.*

NARDUS, (*of Pliny, Native of Theophrastus and Dioscorides. Said to be of Hebrew derivation.*)

Lin. gen. n. 69. *Reich. n.* 75. *Schreb. n.* 97. *Juss.* 33.

Class. 3. 1. Triandria Monogynia.

Nat. order of *Gramina, Graminea* or *Grasses.*

GENERIC CHARACTER.

CAL. none.

COR. two-valved: *outer valve* lanceolate-linear, long, mucronate, embracing the smaller with its belly: *inner* smaller, linear, mucronate.

Nectary none.

STAM. *Filaments* three, capillary, shorter than the corolla. *Anthers* oblong.

PIST. *Germ* oblong. *Style* one, filiform, long, pubescent. *Stigma* simple.

PER. none: the corolla grows to the seed, and does not open.

SEED one, straight, linear-oblong, acuminate at both ends, narrower at top.

ESSENTIAL CHARACTER.

Cal. none. *Cor.* two-valved.

SPECIES.

1. Nardus stricta. *Common Mat-grass.*
Lin. spec. 77. *fil.* 102. *Reich.* 1. 144. *Willd.* 314. *fl. Lapp. n.* 40. *suec. n.* 52. *hort. cliff.* 42. *Hudf. angl.* 22. *Wither. arr. ed.* 3. 71. *Engl. bot.* 290. *Fl. ruff.* 27. *Lighf. scot.* 90. *Relh. cant. n.* 40. *Sibth. oxon. n.* 101. *Hall. helv. n.* 1410. *Scop. carn. n.* 67. *Pollich pal. n.* 53. *Leers herborn. n.* 38. *t.* 1. *f.* 7. *Jacqu. vind.* 10. *Roth. germ.* 1. *p.* 25. 2. *p.* 65. *Hoffm. germ.* 19. *Krock. sile. n.* 83. *Neck. gallob.* 29. *Ger. prov.* 74. *Villars dauph.* 2. 57. *Schreb. gram.* 65. *t.* 7. *Fl. dan.* 1022.

Gramen sparteum junciſolium. *Bauh. pin.* 5. *Scheuch. gram.* 90. *t.* 2. *f.* 10. *Raii hiſt.* 1260. *Inſ.* 393.

Gr. spart. capillaceo folio minus. *Bauh. prodr.* 11. *theat.* 70. *Mor. hiſt.* 3. 217. *ſ.* 8. *t.* 7. *f.* 8.

Gr. holiaceum minimum, fol. junceis, panicula unam partem ſpectante. *Moris* 4. *ic.* 31.

Spartum parvum. *Lob. ic.* 90. 1. *Bauh. hiſt.* 2. 513. 2. *Ger. emac.* 1631. 3. *Park. theat.* 1199. 5, 6, 7.

β. Gr. spart. baſilienſe, capillaceo folio majus. *Bauh. pin.* 60. *prodr.* 29.

Spike briſtle-ſhaped, ſtraight, pointing one way.

2. Nardus aristata. *Awned Mat-grass.*
Lin. ſpec. 78. *ſyſt.* 102. *ſuec.* 1. 145. *Willd.* 315. *Villars dauph.* 2. 58. *Allion. pedem. n.* 2130.

N. incurva. *Gouan hort.* 33. *flor.* 114.

Gramen exile arundinaceum minimum, acumine reflexo. *Boce. muſ.* 2. 74. *t.* 57. *Schreb. gram.* 11.

Gr. juncеum nodoſum min. capillare. *Barr. rar.* 106. *t.* 117. *f.* 1.

Calyxes awned.

3. Nardus indica. *Indian Mat-grass.*
Lin. ſyſt. 102. *Willd.* 315. *ſuppl.* 105.

Spike briſtle-ſhaped pointing one way, a little curved inwards.

4. Nardus ciliaris. *Ciliated Mat-grass.*
Lin. ſpec. 78. *Reich.* 1. 145. *Willd.* 315.

Spike curved in ciliate.

DESCRIPTIONS, *&c.*

1. Root perennial. Culms from a span to a foot in height, slender, stiff, roughish, having one, two or three joints near the base, with a short leaf to each, and thence naked to the spike. Root-leaves numerous, longer, narrow, a little rough. Spike two or three inches long, consisting of about twenty spikelets dispersed thinly along the rachis. Florets yellowish white or purple, pubescent, alternate, sessile. Rachis or spike-stalk convex on one side, hollowed on the other, with rough alternate teeth on the edges for the insertion of the florets, and continued above them to a short bristly point [a].

This grass is easily distinguished by the slenderness and rushy stiffness of the stalks and leaves; and by the florets being thinly dispersed along the spike, mostly in pairs, pointing all the same way, and having each only one style. It flowers from may or june to august: Ray says from the end of april; and that it holds its spike till winter.—Native of most parts of Europe, in woody moist barren meadows; with us chiefly on or about bogs or heaths.

Being stiff, hard and short, Linneus observes that it eludes the stroke of the scythe, or takes off its edge, for which reasons it is disliked by the mowers. In England it rarely comes under the scythe.

Linneus also informs us that crows frequently stock it up, for the sake of the larva of some Tipula, which they find at the root. He says that goats and horses eat it, but that cows and sheep are not fond of it. With us it does not seem to be applied to any use.

Gerard remarks that the corolla is sometimes three-valved, the outer valve being shorter and performing the office of a calyx.

2. Root biennial. This is a very small species. The leaves curve back and roll up like hair, dry away and disappear in part. The spike makes about one-third of the culm: it is curved back at the end, which discovers the little awns of the florets, for they are so small that they are not seen without attention and practice. The florets come in pairs in a very small scale, which serves them for a calyx, and which might rank this grass with the Loliums. The florets are very slightly pedunclcd, two-valved, and terminated by a little awn.—Native of the South of Europe, in sandy barren soils.

3. This grass is the length of a finger, branched a little, and smooth. Leaves flat, shorter than the culm, alternate, remote. Spike imbricate, very narrow towards the flowers.—Found by Koenig, in Tranquebar in the East Indies [b].

4. Leaves flat. Culm a span high. Spike halved, or having only on one side, alternate erect florets, from twelve to fifteen in number; the outer valve ovate-oblong, awnless, ciliate along the edge with numerous rugged scales. Proper calyx none, but on one side of the florets a bristle, shorter than the glume [c].—Native of the East Indies.

Nardus gangitis & thomæa. See *Rottboellia.*

NARDUS. See *Ægilops, Agrostis, Cavalia, Valeriana.*

[a] Pollich, Leers, Fl. ruff. [b] Linn. suppl. [c] Linn. spec.

NARINAM-POULLI. See *Hibiscus.*
NARTHECIUM. See *Anthericum.*
NARU-KILO. See *Pontederia.*
NARUM-PANEL. See *Uvaria.*
NARU-NINDI. See *Cerbera.*
NASTURTIUM. See *Arabis, Cardamine, Cochlearia, Heliophila, Iberis, Lepidium, Myagrum, Panax, Sisymbrium, Thlaspi, Vella.*
NATI-SCHANIBU. See *Eugenia.*
NATSIATAM. See *Menispermum.*
NATRIX. See *Ononis.*

NAUCLEA.

Lin. gen. n. 223. *Reich. n.* 239. *Schreb. n.* 295. *Gærtn. t.* 30. *Juss.* 209.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Aggregatæ. Rubiaceæ*, Juss.

GENERIC CHARACTER.

CAL. *common* none. *Receptacle common* globular, subvilose, covered all over with florets.

Perianth proper one-leafed, oblong, incrusting the germ: *mouth* contracted, entire.

COR. *proper* one-petalled, funnel-form, placed on the mouth of the perianth. *Tube* filiform, longer. *Border* short, five-parted: *segments* ovate, blunt, recurved.

STAM. *Filaments* five, very short, in the throat of the corolla. *Anthers* ovate, the length of the tube.

PIST. *Germ* inferior, oblong. *Style* capillary, erect, longer than the corolla. *Stigma* obovate.

PER. *Capsule* incrusted with the calyx, turbinate, attenuated below, blunt at the top, two-grained, two-celled: *grains* fastened by a thread at the top.

SEEDS several, small, ovate, compressed a little, membranaceous-margined, attenuated into a bristle-shaped tail, fastened to the suture, *G.*

ESSENTIAL CHARACTER.

Cor. funnel-form. *Seed* one, inferior, two-celled. *Receptacle common* globular.

SPECIES.

1. Nauclea orientalis.
Lin. spec. 243. *Reich.* 1. 473. *Gærtn. fruct.* 1. 151. *Lour. cochinch.* 141. *Fl. zeyl. n.* 53. *spec. ed.* 1. 95. (Cephalanthus).
Platanocephalos citri foliis bijugis, capite majore. *Vaill. act. par.* 1722. *p.* 259.
Bancalus. *Rumph. amb.* 3. 84. *t.* 55. *f.* 1 ?
Leaves ovate obtuse, peduncles terminating solitary.
2. Nauclea parvifolia.
Roxb. corom. 40. *t.* 52.
Leaves oval, peduncles terminating solitary or in threes.
3. Nauclea cordifolia.
Roxb. corom. 40. *t.* 53.
Leaves broad-cordate, peduncles axillary two to four.
4. Nauclea purpurea.
Roxb. corom. 41. *t.* 54.
Leaves oblong pointed, peduncles terminating solitary or in threes.

DESCRIPTIONS, *&c.*

1. This is a large tree, with a straight trunk, and spreading branches. Leaves quite entire, large, smooth, petioled, opposite, with thick, parallel, curved nerves. Flower on a long peduncle, composed of very many yellow florets gathered into a ball two inches in diameter. Proper perianth fleshy, unequally many-cleft. Corolla usually five-cleft, with as many stamens. Style very long, conglobate every way into a large hoary head, by their united force concealing the golden florets. Stigma entire, turbinate, acuminate. Fruit a berry compounded of the fleshy perianths of the florets, coalescing irregularly into a globular, lacunose body [a].

Gærtner describes it as a Capsule, inferior, small, turbinate, corticate, crowned with a callous ring the remains of the fallen flower, smooth, two-grained: rind coriaceous, opened at top by the gaping grains; which are cartilaginous, hard, whitish, convex on one side, slightly concave on the other, one-celled, opening elastically two ways at top. Receptacle triple: first, of the fructification globular; secondly, of the fruit filiform, between the grains, and inserted into their upper part, as in umbellate plants; thirdly, of the seed, a prominent nerve of the gaping future of the grains, by which the seeds hang. Seeds in each grain about sixteen, small, ovate, compressed a little, or somewhat angular, membranaceous-margined, attenuated at top into a bristle-shaped tail, ruiescent.

Native of the East Indies, Cochinchina, and the Society isles.

The wood is yellow, solid, beautiful and fit for all works within doors; exposed to air and wet it rots quickly [b].

2. Trunk straight, with a brownish-gray, cracked bark. Branches opposite, numerous, spreading, forming a large, oval, shady head. Leaves opposite, decussated, entire, smooth. Petiole channelled. Stipules large, oblong, obtuse, glutinous, falling. Peduncles single or three; when three, the middle one is shortest, near the apex jointed, and bracted, each supporting a single globular naked head of florets. Bractes two, opposite, near the extremity of the peduncle, oval, falling. Flowers small, light yellow. Receptacle chaffy: chaffs wedge-form, hairy at their insertions. Calyx very minute, entire. Divisions of the corolla pointed, spreading. Filaments inserted just within the mouth of the tube: anthers erect, oblong, pointed above. Style nearly twice the length of the corolla: stigma large resting on the style. Capsules turbinate, covered with a scabrous crust or bark, which splits irregularly when the seeds are ripe: within is the proper two-celled capsule, each consisting of one valve, opening round the apex, and down on the inside. Seeds several, very minute, oblong, tailed, inverse, imbricated round the outside of their receptacles with the insertion downwards.

This grows to a large tree, and is a native of almost every part of the coast of Coromandel, but chiefly among the mountains, flowering during the cold season. It is called Bota-cadamie by the Telingas.

The wood is of a light chestnut colour, firm and close grained. It is used for various purposes, where it can be kept dry; but if exposed to wet it soon rots.

3. Trunk erect. Bark like that of the preceding. Branches very numerous, horizontal, forming a very large shady head. Leaves opposite, decussated, pointed, entire, above pretty smooth, below downy, particularly when young, and beautifully netted with small veins; from four to twelve inches each way. Petiole round, a little downy, from two to three inches long. Stipules as in the preceding. Peduncles round, downy, the same length with the petioles, near the apex jointed and bracted, each supporting a single globular head. Bractes oval, falling. Flowers as in the preceding. Divisions of the calyx, and stigma clubbed. Capsule wedge-form. Seeds about six in each cell, surrounding their receptacle, oblong, not imbricated: membrane winged at the extremities; lower pointed: upper two-forked.

This also grows to a large tree, and is a native of the mountainous parts of the same coast. It flowers during the wet season, and the seeds are ripe about april.

The wood is exceedingly beautiful, its colour like that of the Box-tree but much lighter, and at the same time very close grained; it is to be had of a large size, from one to two feet or more in diameter; is used for almost every purpose where it can be kept dry, and answers very well for furniture, being pretty, light, and durable.

Daduga of the Telingas.

4. Trunk irregular, with a scabrous ash-coloured bark. Branches opposite, decussated. Leaves opposite, decussated, short-petioled, quite entire, very smooth and shining both above and below, from four to nine inches long. Stipules as in the two former. Peduncles as in *N. parvifolia.* Flowers larger than in either of the former, purple. Calyx as in *N. cordifolia.* Corolla, stamens, pistil and style as in the former. Stigma globular. Capsule turbinate, wants the outer covering, two-celled; the cells two-valved on the out

[a] Loureiro.

[b] Idem.

or convex fide; on the inſide there is only the receptacle of the fruit, which is broad. Seeds numerous, moſt minute, imbricated, with their inſertions upwards.

It is a ſmall tree: a native of the moiſt valleys among the Circar mountains, flowering in april or the beginning of the hot ſeaſon.—Bagada of the Telingas[a].

NAVELWORT. See *Cotyledon* and *Cynoglossum*.

NAVEW. See *Braſſica*.

NECKERA. (*So named from Natalis Joſeph De Necker, author of* Deliciæ Gallo-Belgicæ, *&c.*)

Lin. gen. Schreb. n. 1658. *Hedw. fund.* 2. 93.

Hypni ſpec. *Linn.*

Claſſ. 24. 3. Cryptogamia Muſci.

GENERIC CHARACTER.

CAPS. oblong. *Periſtome* double: *outer* with ſixteen ſharp teeth; *inner* with ſixteen diſtinct cilias, alternate with the teeth of the outer.

MALES gemmaceous on diſtinct plants.

SPECIES.

Neckera heteromalla of Hedwig is Hypnum heteromallum of Gmelin: Sphagnum arboreum of Hudſon: and Fontinalis ſecunda of Withering.

Neckera pennata of Hedwig, is Hypnum pennatum of Gmelin, and Fontinalis pennata of Withering.

Neckera pumila of Hedwig, is Hypnum pumilum and Dickſoni of Gmelin, and Hypnum pennatum of Withering, and Dickſon[a].

NECTANDRA. See *Gnidia*, *Poroſtema*, *Struthiola*.

NECTARINE. See *Amygdalus*.

NECTRIS. (*Νηκτρις, natatrix, a floating plant; from νεω, to ſwim.*)

Lin. gen. Schreb. n. 610. Cabomba. *Aubl.* 124. *Juſſ.* 47.

Claſſ. 6. 2. Hexandria Digynia.

Nat. order of *Tripetaloideæ*. *Juncі*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ſix-parted; the three outer ſegments ovate, acute, coloured within; the three inner, alternate with theſe, ovate, blunt, ſmaller, coloured on both ſides.

COR. none.

STAM. *Filaments* ſix, capillary, inſerted into the baſe of the calycine ſegments. *Anthers* ovate.

PIST. *Germs* two, ſuperior, oblong. *Styles* ſhort. *Stigmas* blunt.

PER. *Capſules* two, ovate, ſomewhat fleſhy, crowned with the permanent ſtyles, one-celled.

SEEDS numerous, very ſmall.

ESSENTIAL CHARACTER.

Cal. one-leafed, ſix-parted, coloured. *Cor.* none. *Styles* permanent. *Capſ.* two, ſuperior, ovate, one-celled, many-ſeeded.

SPECIES.

1. Nectris aquatica.

Lin. ſyſt. ed. Gmel. 580.

Cabomba aquatica. *Aubl. guian.* 321. *t.* 124.

DESCRIPTION, *&c.*

This plant grows in ponds, lakes, and rivers that have not a rapid current, puſhing out long, branched, knotted, ſiſtulous ſtems, with a pair of leaves at each joint. Theſe leaves are divided into five branches, and each of theſe into three others, and ſo on three times, finiſhing by two; theſe diviſions are very fine: the top leaves float on the water; theſe are alternate, entire, oval, peltate, on a long petiole, like thoſe of Hydrocotyle. The flowers come out from the axils of theſe on a long peduncle: ſometimes there is a flower from the axil of one of the upper cut leaves. The three outer leaves of the calyx are green on the outſide, and yellow within; the three inner are entirely yellow.—Native of Guiana and the iſland of Cayenne[a].

NEDEL-AMBEL. See *Mosyanthes*.

NEGUNDO. See *Vitex*.

NEINSCHENA. See *Arum*.

NELAM-MARI. See *Hedyſarum*.

NELAM-PARENDA. See *Viola*.

NELI-POLI. See *Acorrhoa*.

NELI-PU. See *Utricularia*.

NELI-TALI. See *Æſchynomene*.

NELITRIS. See *Phelium*.

NELLA TENDALE-COTTI. See *Crotalaria*.

NELLI-CAMARUM. } See *Phyllanthus*.
NELLIKA. }

NELUMBO. See *Nymphæa*.

NEMIA. See *Manulea*.

NEOTTIA. See *Ophryt*.

NEPENTHES (*of Pliny.* Νηπενθες *of Hippocrates. From the negative νη, and πενθος, luctus. Serene, void of grief.*)

Lin. gen. n. 1019. *Reich. n.* 1107. *Schreb. n.* 1560. *Juſſ.* 444. *Gærtn. t.* 83.

Claſſ. 22. 14. Dioecia Syngeneſia.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* one-leafed corisaceous, coloured within, ſpreading, four-parted: *ſegments* roundiſh, minutely toothletted, almoſt equal.

COR. none.

STAM. *Filament* one, columnar, cylindric, erect, a little ſhorter than the calyx. *Anthers* many (fifteen to ſeventeen), one-celled, connected into a convex peltate head, concave at the centre, round the upper part of the filament; three of them at the top; tranſverſe.

* *Female*, on a diſtinct plant.

CAL. as in the Male, permanent.

COR. none.

PIST. *Germ* ovate, four-grooved, ſuperior, the length of the calyx. *Style* none. *Stigma* large, peltate, four-lobed, hollowed out into four excavations, permanent.

PER. *Capſule* oblong, columnar, truncate, crowned with the permanent ſtigma, quadrangular; the ſides grooved: four-celled, four-valved, gaping at the angles: partitions contrary.

SEEDS numerous, oval, incloſed in long, membranaceous, angular arils, acuminate at both ends, faſtened obliquely to the inner angle of each cell in a double row.

ESSENTIAL CHARACTER.

Cal. four-parted. *Cor.* none.

MALE. *Filam.* one, with many *Anthers* connected into a peltate head.

FEM. *Style* none. *Stigma* large, peltate, four-lobed. *Capſ.* four-celled, with many arilled *Seeds*.

SPECIES.

1. Nepenthes diſtillatoria.*

Lin. ſpec. 1354. *Reich. n.* 45. *hort. cliff.* 431. *ſ. zeyl. n.* 321. *Gærtn. fruct.* 2. 18. *Pluk. phyt. t.* 237. *f.* 3. (Uricaria). *Rumph. amb.* 5. 121. *t.* 59. *f.* 2. (Cantharifera). *Burm. zeyl.* 42. *t.* 17. (Bandura).

Planta mirabilis diſtillatoria. *Grimm. in ephem. nat. cur. an.* 1. *dec.* 2. *p.* 363. *t.* 363.

Bandura Cingalenſium Gentianæ indicæ ſpecies. *P. alnman. Rai hiſt.* 721.

DESCRIPTION, *&c.*

This elegant plant riſes with a fungoſe, thick, round ſtalk. Leaves alternate, ſeſſile, wide, oblong, ſmooth, with a very ſtrong nerve running along the middle, ending in a long tendril, generally twiſted, to which hangs a receptacle, or long, cylindrical, membranaceous, ſmooth, hollow bag, which on being preſſed yields a ſweet, limpid, pleaſant, refreſhing liquor, in ſuch quantity that ſix or eight of them are ſufficient to ſlake the thirſt of a man.

Flowers in a ſpike on long peduncles[a]. Calyx inferior, permanent; leaflets ovate, acuminate. Anthers four, fixed to the germ. Capſule ſuperior, oblong, ſwelling in the middle, narrowed to both ends, crowned with a depreſſed quadrangular diſk formed of the four ſeſſile ſtigmas, four-cornered, four-valved: the valves have a depreſſed line on the outſide, and a longitudinal ſeptum within. Seeds very numerous linear-oblong, narrowed to both ends, dirty ſtraw-colour, faſtened all round in a ſuberect poſition to the partition[a].

Native of the iſland of Ceylon. Linneus placed it in the claſs Gynandria; he doubted however about the ſex, and thought it might be dioecous, as it proves to be.]

[a] Roxb. coron. [a] See Wither. arr. ed. 3. p. 789. 790. 852.
* Aublet. [a] Linn. zeyl. & Burm. zeyl. [a] Gærtner.

NEPETA (*of Pliny: from* Nepa, *being ſuppoſed to be efficacious againſt the bite of the ſcorpion. Linnæus derives it from the name of a town in Italy, between Rome and Viterbo.*)

Lin. gen. n. 710. *Reich. n.* 768. *Schreb. n.* 964. *Juſſ.* 113. Cataria. *Tournef. t.* 95.

Claſs. 14. 1. Didynamia Gymnoſpermia.

Nat. order of *Verticillatæ. Labiatæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, cylindric: *mouth* five-toothed, acute, erect: *upper* toothlets longer; *lower* more ſpreading.

COR. one-petalled, ringent: *tube* cylindric, curved inwards: *border* gaping: *opening* ſpreading, cordate, ending in two reflex blunt very ſhort ſegments: *upper lip* erect, roundiſh, emarginate; *lower* roundiſh, concave, larger, entire, crenulate.

STAM. *Filaments* four, awl-ſhaped, beneath the upper lip, approximating, two of them ſhorter. *Authers* incumbent.

PIST. *Germ* four-cleft. *Style* filiform, length and ſituation of the ſtamens. *Stigma* bifid, acute.

PER. none. *Calyx* ſtraight, containing the ſeeds in its boſom.

SEEDS four, ſubovate.

OBS. *If the ſegments of the throat be numbered with the lower lip, it will be three-parted.*

ESSENTIAL CHARACTER.

Cor. lower lip with an intermediate ſegment, crenate; throat reflex at the edge. *Stam.* approximating.

SPECIES.

1. Nepeta Cataria. *Common Catmint.*
Lin. ſpec. 796. *ſyſt.* 529. *Reich.* 3. 30. *hort. cliff.* 310. *upſ.* 163. *fl. ſuec. n.* 514. *mat. med.* 126. *Hudſ. angl.* 249. *Withet. arr. ed.* 3. 519. *Engl. bot.* 137. *Ligtf. ſcot.* 304. *Relh. cant. n.* 420. *Sibth. oxon. n.* 514. *Scop. carn. n.* 743. *Neck. gallob.* 249. *Pollich pal. n.* 549. *Crantz. auſtr.* 271. *Fl. dan. t.* 580. *Krock. ſilef. n.* 906. *Villars dauph.* 2. 365. *Allion. pedem. n.* 131. *Gron. virg.* 65. 89. *Knipb. cent.* 4. *n.* 53. *Blackw. t.* 455. *Sabb. hort.* 3. *t.* 80. *Riv. mon.* 52.
Cataria foliis cordatis, verticillis ſpicatis. *Haſſ. hiſt. n.* 246.
Mentha cataria. *Baub. hiſt.* 3. 2. 225. *Lob. obſ.* 276. 1. *ic.* 1. 511. 1. *Raii hiſt.* 548.—vulgaris & major. *Baub. pin.* 228.
Cataria herba. *Dod. pempt.* 99.
C. vulgaris major. *Tournef. inſt.* 202.
Mentha felina ſeu Cattaria. *Ger.* 554. 1. *emac.* 682. 1.
Nepeta major vulgaris. *Park. theat.* 38. *Raii ſyn.* 237. *Petiv. brit. t.* 32. *f.* 1.
Herba Gattaria. *Matth.* 719.
β. N. minor. *Mill. dict. n.* 2. *Raii hiſt.* 548.
Mentha Cataria minor. *Baub. pin.* 228.
Flowers in ſpikes, whorls ſubpedicelled, leaves petioled cordate tooth-ſerrate.

2. Nepeta anguſtifolia. *Narrow-leaved Catmint.*
Vahl ſymb. 1. 41.
N. arragonenſis. *Lamarck. encycl.*
Cataria tenuifolia. *Cluſ. hiſt.* 2. 33.
Corymbs pedicelled ſpiked, leaves lanceolate wrinkled tomentoſe bluntly ſerrate.

[3. Nepeta pannonica. *Hungarian Catmint.*
Lin. ſpec. 797. *Reich.* 3. 30. *Jacqu. auſtr.* 2. 18. *t.* 129. *Ait. hort. kew.* 2. 284. *Gmel. ſib.* 3. 239. *Allion. pedem. n.* 132. *Krock. ſilef. n.* 908.
N. pann. elation. *Mat. hiſt.* 3. 415. *f.* 11. *t.* 6. *f.* 6.
Mentha montana verticillata. *Baub. pin.* 227.
Menthaſtrum montanum 1. *Cluſ. hiſt.* 2. 32. *Ger. emac.* 685. *f.* 6. *Raii hiſt.* 549.
Cymes pedunculed many-flowered, leaves lanceolate-oblong cordate naked, lateral lobes of the corolla reflex.

4. Nepeta cærulea. *Blue-flowered Catmint.*
Ait. hort. kew. 2. 285.
Cymes pedunculed many-flowered rough-haired, leaves oblong cordate, villoſe ſubſeſſile, lateral lobes of the corolla reflex.]

5. Nepeta violacea. *Violet-coloured Catmint.*
Lin. ſpec. 797. *Reich.* 3. 31. *Scop. carn. n.* 744. *Pallas it.* 1. 154. *Sauv. monſp.* 151. *Barr. ic.* 601. *Bocc. muſ.* 2. 46. *t.* 36. *Allion. pedem. n.* 133.

Cymes pedunculed many-flowered hairy, leaves cordate ſubpetioled almoſt naked, lateral lobes of the corolla ſpreading.

[6. Nepeta ucranica.
Lin. ſpec. 797. *Reich.* 3. 31.
Flowers paniculed, leaves lanceolate ſerrate ſeſſile naked.

7. Nepeta incana. *Hoary Catmint.*
Lin. ſyſt. 529. *Thunb. jap.* 244.
Panicles axillary, leaves petioled ovate ſerrate tomentoſe.

8. Nepeta Nepetella. *Small Catmint.*
Lin. ſpec. 797. *Reich.* 3. 31. *Ait. hort. kew.* 2. 285. *Allion. pedem. n.* 134. *t.* 1. *f.* 1.
Cymes pedunculed, leaves cordate oblong-lanceolate deeply ſerrate tomentoſe.

9. Nepeta nuda. *Naked* or *Spaniſh Catmint.*
Lin. ſpec. 797. *ſyſt.* 529. *Reich.* 3. 32. *mant.* 416. *Jacqu. auſtr.* 1. 17. *t.* 24. *Allion. pedem. n.* 135. *Krock. ſilef. n.* 907. *Hall. helv. n.* 248. (Cataria).
Racemes whorled naked, leaves cordate-oblong ſeſſile ſerrate.]

10. Nepeta hirſuta. *Hairy Catmint.*
Lin. ſpec. 798. *Reich.* 3. 32. *hort. cliff.* 311. 3. *Lonr. cochinc.* 366. *ed. Willd.* 444.
Horminum ſpicatum, lavendulæ ſtore & odore. *Bocc. ſic.* 48. *t.* 25. *f.* 2.
Flowers ſeſſile whorl-ſpiked, whorls involved in rosp.

11. Nepeta italica. *Italian Catmint.*
Lin. ſpec. 798. *ſyſt.* 530. *Reich.* 3. 32. *Jacqu. hort.* 2. 51. *t.* 112.
Mentha Cataria minor alpina. *Baub. pin.* 228. *prodr.* 110. *Park. theat.* 38. *n.* 4. *Raii hiſt.* 549.
Flowers ſeſſile whorl-ſpiked, bractles lanceolate the length of the calyx, leaves petioled.

12. Nepeta tuberoſa. *Tuberous-rooted Catmint.*
Lin. ſpec. 798. *Reich.* 3. 33. *hort. cliff.* 311. 2. *Gouan. illuſtr.* 36. *Knipb. cent.* 9. *n.* 72.
Mentha tuberoſa radice. *Baub. pin.* 227.
Menthaſtrum tuber. rad. *Baub. hiſt.* 3. 227. *Raii hiſt.* 550.
Mentaſtrum tuber. *Cluſii. Park. theat.* 33. 9. *Ger. emac.* 685. *f.* 7.
Spikes terminating, bractles oblong acuminate nerve-lined coloured, leaves cordate pubeſcent, lateral lobes of the corolla reflex.

13. Nepeta Scordotis. *Cretan Catmint.*
Lin. ſpec. 798. *Reich.* 3. 33. *amoen.* 4. 317.
N. procumbens. *Mill. dict. n.* 11.
Scordium alterum linuginoſius verticillatum. *Baub. pin.* 248.
Scordotis. *Alp. exot.* 284. *t.* 283. *Cluſ. hiſt.* 2. 312.
Spikes terminating ſeſſile, bractles ſubcordate villoſe, leaves cordate blunt.

[14. Nepeta lanata. *Woolly Catmint.*
Jacqu. cliſ. 3. 21. *t.* 75. *Ait. hort. kew.* 2. 286.
Spikes terminating, bractles ovate nerve-wrinkled ſubſcarioſe, leaves oblong cordate, villoſe, lateral lobes of the corolla ſpreading.]

15. Nepeta virginica. *American Catmint.*
Lin. ſpec. 799. *Reich.* 3. 33. *hort. cliff.* 305. *Gron. virg.* 65. *Pluk. phyt. t.* 85. *f.* 2. *Mor. hiſt.* 3. 374. *ſ.* 11. *t.* 8. *f.* ult. (Clinopodium).
Heads terminating, ſtamens longer than the flower, leaves lanceolate.

[16. Nepeta malabarica. *Malabar Catmint.*
Lin. ſyſt. 530. *Reich.* 3. 33. *mant.* 566. *Mor. hiſt.* 3. 415.
Spike whorled, bractles ſubform, leaves lanceolate quite entire below.

17. Nepeta indica. *Indian Catmint.*
Lin. ſpec. 799. *ſyſt.* 530. *Reich.* 3. 34.
The ſame with Lavandula carnoſa.
Upper lip of the corolla quite entire very ſhort.

18. Nepeta multifida.
Lin. ſpec. 799. *ſyſt. ed.* 13. 442. *Reich.* 3. 34. *Amm. ruth.* 69. *Gmel. ſib.* 3. 242. *t.* 55. (Lavandula).
Betonica ſibirienſis. *Wolfb. hort.* 122. *n.* 20.
Flowers in ſpikes, leaves pinnatifid quite entire.

19. Nepeta botryoides.
Ait. hort. kew. 2. 287.
N. multifida. *Linn. ſuppl.* 273. *ſyſt.* 530. *Lamarck encycl.* 1. 713.

N. bipinnata.

N. bipinnata. *Carian. bisp.* 36. *n.* 55. *t.* 29.
Flowers in spikes, lateral lobes of the corolla somewhat spreading, leaves pinnatifid, segments linear almost equal.

20. Nepeta lavandulacea.
Lan. fisp. 530. *suppl.* 272.
Spike compact, leaves ovate gash-serrate marked with lines.]

DESCRIPTIONS, &c.

1. Common Nep or Catmint has a perennial root, from which arise many branching ſtalks, two feet high, [and more,] upright, pubeſcent. Leaves of a velvet-like ſoftneſs, wrinkled, aſh-coloured or hoary particularly underneath. Spikes compoſed of interrupted whorls terminate the ſtem, and come out in branches from the axils of the leaves. The flowers are ſubſeſſile, and ſeparated at the baſe by a ſmall lanceolate bractæ. Calyx downy with green ribs. Corolla white, with a tinge of red, and ſpotted with purple: tube nearly ſtraight; middle ſegment of the lower lip with ſix or ſeven (ſometimes more) equal teeth turned upwards, and ſet with a tuft of white briſtles at the baſe. Stamens rather longer than the upper lip. Seeds ovate three-ſided, blunt at both ends, crowned with a white ſtreak, dark brown and ſmooth when ripe [a]. The whole plant has a ſtrong ſcent between Mint and Pennyroyal. It is called Catmint, becauſe cats are very fond of it, eſpecially when it is withered, when they will roll themſelves on it, tear it to pieces, and chew it with great pleaſure. Ray obſerves, that plants which he tranſplanted from the fields into his garden were always deſtroyed by the cats, unleſs he proteſted them with thorns till they had taken good root and came into flower; but that they never meddled with plants raiſed from ſeed. Hence the old ſaying:

"If you ſet it,
"The cats will eat it;
"If you ſow it,
"The cats don't know it."

Mr. Miller has confirmed this by his own experience; having frequently ſet a plant from another part of the garden, within two feet of others which came up from ſeeds, when the former was torn in pieces and deſtroyed by the cats whilſt the latter remained unhurt. [The true reaſon of this difference is aſſigned by Ray: that the cat is fond of it in a languid withering ſtate, or when the peculiar ſcent of the plant is excited by being handled or bruiſed in gathering or tranſplanting.

Common Catmint is a native of moſt parts of Europe, on banks and hedges, chiefly in a calcareous ſoil. It flowers from july to ſeptember.

In German it is called *Nepte, Katzenneepte*, &c. In Dutch, *Kattekruid* or *Nept*. In Daniſh, *Katteurt* or *Siſeubrandt*. In Sweditſh, *Kattmynta*. In French, *Chataire, Cataire, herbe aux Chats*. In Italian, *Gattaria*. In Spaniſh, *Gatera*. In Portugueze *Neveda dos gates*. In Ruſſian, *Koſchitza michta*.

An infuſion of Catmint is deemed a ſpecific in chlorotic caſes. Two ounces of the expreſſed juice may be given for a doſe. Sheep are ſaid to eat it, but all other domeſtic quadrupeds to refuſe it[b]. Sheep might have been included in the number.]

β. The ſmaller Catmint, which Miller makes a diſtinct ſpecies, grows naturally in Italy and the South of France. The ſtalks are more ſlender, and their joints farther aſunder; the leaves are narrower, and the whole plant whiter: the ſpikes of flowers are divided into whorls, the lower two inches apart, others an inch, and the upper ones half an inch.

[2. Stem erect, a foot high, branched: the whole plant tomentoſe-hoary. Leaves petioled, blunt-iſh, half an inch long. Flowers corymbed. Corymbs pedicelled, oppoſite, cluſtered in a terminating, oblong, compact ſpike. Bractes ſtrait, linear. Calyx ſtriated, with lanceolate, acute teeth. It is by no means a variety of N. Cataria, nor does it change its appearance when cultivated in a garden. The leaves are ſharp at the baſe, all blunt at the tip: the calyxes are acute: whereas the leaves of N. Cataria are ſubcordate at the baſe; and the upper ones, as alſo the teeth of the calyx, are cuſpidate. N. anguſtifolia minor hiſpanica, *Barrel. ic.* 735. & *Boc. muſ.* 2. 75. *t.* 61. probably appertains to this, but the flowers are fewer and more remote in the figure.—Native of Arragon [c].]

Miller has a ſpecies under the ſame name, the ſtalks of which do not branch ſo much as the common ſort; they are ſlenderer and the joints farther aſunder; the leaves are ſmall, narrow, and almoſt heart-ſhaped, ſerrate, hoary, and on ſhort foot-ſtalks: the ſpikes of flowers are more broken or interrupted, and the whorls ſtand upon foot-ſtalks. It grows naturally in Italy.

He has another ſpecies which he calls N. paniculata, which grows naturally in Sicily, and riſes with a ſtrong ſtalk near three feet high, the lower joints are four or five inches aſunder. Leaves long, narrow, heart-ſhaped, deeply ſerrate, ſitting pretty cloſe to the ſtalk. Flowers in panicles, of a pale purpliſh colour.

[3. Root perennial, branched, woody, the ſize of a quill or more, brown on the outſide, knobbed at the end. Stems ſeveral, from three to four feet in height, grooved, ſmoothiſh, with oppoſite branches forming a panicle. Leaves oblong, blunt, ſcarcely cordate, bluntly ſerrate, ſmooth, the lower ones on longer petioles, the upper ones on very ſhort ones; they are ſucceſſively ſmaller as they approach the racemes, till they become ſo ſmall that the ends of the racemes ſeem to be leafleſs. Racemes axillary and oppoſite containing about twenty flowers. Bractes almoſt briſtle-ſhaped. Calyx ſomewhat villoſe and ſtriated. Corolla more or leſs red, in the cultivated plant very deep, and elegantly dotted: upper lip blunt, erect and bifid, with oblong flat ſegments; lower lip hairy on both ſides, with blue dots at the throat. Calyx of the fruit ovate. Seeds black. It is ſo nearly allied to N. nuda, as ſcarcely to be diſtinguiſhed when they are not in flower. The branches are not ſo rod-like in the nuda; the corollas in that are almoſt white, without ſpots, but the principal difference is in the lower lip, the middle ſegment of which in the nuda is flat with the ſides reverſed, but in this remarkably concave and hagging [d].

Native of Hungary, Auſtria, and Siberia. Cultivated in 1683, by Mr. James Sutherland. It flowers from auguſt to october.

4. Introduced in 1777, by Caſimir Gomez Ortega, M. D. We do not know of what country it is a native. It flowers in may and june [e].]

5. Stalks about two feet high, with a few ſlender branches coming out from the ſides. Leaves indented on their edges. Flowers in roundiſh whorls, pedunculed, blue. There is a variety of it with white flowers.

[According to Scopoli, the ſtem is the height of a man, ſmooth, glaucous at the angles. Racemelets axillary, twice and thrice dichotomous, with a naked flower interpoſed between each diviſion. Calyx rough-haired, ten-ſtreaked, ſubbilabiate. Helmet or upper lip of the corolla bifid, the ſegments rounded: lower lip dotted, pale: tube wider behind and ſerruginous. Filaments ſmooth. Fruiting calyx ovate, with converging, amethyſtine teeth. Seeds brown, convex on one ſide, angular on the other, appearing rough when examined by the microſcope, and having a white tranſverſe line at the baſe.

Native of Spain, Piedmont, Carniola, Siberia. It was cultivated in the botanic garden at Chelſea in 1723, and flowers from july to ſeptember [f].

6. Native of the Ukraine [g].

7. Stem herbaceous, roundiſh at bottom, decumbent, naked, bluntly four-cornered above, erect, tomentoſe, undivided, a ſpan or a little more in height. Leaves acute, tomentoſe on both ſides but whiter underneath, ſpreading, half an inch long, the upper ones gradually leſs. Petioles tomentoſe, a line in length. Panicles in the upper axils, oppoſite, trifid, ſaſtigiate. Peduncle a line in length: pedicels capillary. Stamens twice as long as the corolla. It differs from N. Nepetella in having the flowers in axillary panicles, and the leaves ovate-oblong, not cordate.—Native of Japan.

[a] Withering. Pollich. [b] Withering. [c] Vand. [d] Jacquin. [e] Hort. kew. [f] Idem. [g] Linn.

The Kew catalogue has a species under the same name, the native place of which is not known. It was introduced in 1778 by Mr. Thomas Blackie, and flowers in auguſt. The leaves are petioled oblong ſubcordate crenate tomentoſe; the flowers in cymes pedunculed and many together.

8. This is only one-third of the ſize of the common ſort. The leaves are very narrow, acutely ſinuate-toothed. Flowers looſely racemed, with about five flowers in the racemelets, and not thirty as in N. violacea. Calyxes naked. Bractes very narrow, ſpreading. Corollas, when recent, red, not white or blue. Anthers blue.

Native of the South of Europe [a]. Cultivated in 1758, by Mr. Miller. It flowers from july to ſeptember [b].

9. Stems two feet high, ſmooth, ſtrict, four-grooved, the older ones dark purple. Leaves like thoſe of Stachys paluſtris, blunt, veined, naked, rugged on both ſides. Racemes brachiate. Bractes linear. Flowers diſtinct. Corollas whitiſh-ruſeſcent, with the beard of the palate white, and the throat dotted with purple. According to Haller the flowers are blue and white [c].

Krocker deſcribes a plant under the name of *nuda*, but is doubtful whither he ſhould refer it, becauſe it has ſeveral characters of N. nuda, and ſeveral of ucranica, and that authors diſagree ſo much in their characters. He ſuſpects that theſe two may be one and the ſame plant, and is rather inclined to ſuppoſe that his may be the ucranica; the ſtem being four or five feet high; the leaves ſtrictly ſeſſile, rather lanceolate than cordate, bluntly ſerrate, not blunt at the end, but acuminate. Corolla pale blue, not white-ruſeſcent or dotted with red, but rather with white; and laſtly, the ſpikes being compoſed of rather long, oppoſite, many-flowered peduncles, placed in whorls, panicled, naked, without any bracte between them.

Native of the South of Europe. Cultivated by Mr. Miller in 1758. It flowers from june to auguſt [d].]

10. Stalks about two feet high, branching from the bottom. Leaves heart-ſhaped, obtuſe, little indented, on pretty long petioles. Stalks terminated by long ſpikes of flowers in whorls, ſeparate, ſeſſile, wrapped in a hoary down. Corolla white, appearing in july.—Native of Sicily.

[According to Loureiro, it is alſo a native of Cochinchina. He deſcribes the ſtem as one foot high, upright, hairy and pale. Leaves lanceolate, ſerrate, hirſute, ſeſſile. Flowers white, ſeſſile, in axillary whorls, with many hairs intermixed. Lower lip of the corolla wider, crenate, with the margin of the throat reflex. Stamens ſtraight approximating.]

11. The ſtalks of this ſeldom riſes more than a foot and half high, ſending out very few branches. The whorls of flowers which form the ſpike are diſtant from each other, and ſit cloſe to the ſtalk. Leaves ſhort, oval, heart-ſhaped. The plant is hoary and ſtrong ſcented.

[Leaves blunt, crenate. Bractes lanceolate, green except at the ſides where they are white, the length of the calyx, acuminate. Calyxes erect, equal. Corolla white.—Native of Italy [e]. Cultivated in 1739, by Mr. Miller. It flowers from june to auguſt [f].]

12. This has a thick knobbed root, from which come out one or two ſtalks, that often decline to the ground; they are about two feet and a half long, and ſend out two ſide branches oppoſite. Leaves oblong, crenate, ſeſſile, deep green. The upper part of the ſtalk, for more than a foot in length, has whorls of flowers, the lower ones two inches aſunder, but nearer all the way up: they ſit very cloſe to the ſtalks, and are guarded by ſmall bractes. The corolla is blue.

[Stems ſimple. Leaves cordate-oblong, wrinkled, bluntiſh, groſsly ſerrate, pubeſcent. Spike long, ſomewhat interrupted. Bractes numerous, erect, ovate, acute, nerved, coloured with red, pubeſcent at the edge, covering the calyxes. Flowers violet-coloured. There is a variety which is procumbent [g]; and that ſeems to be Mr. Miller's plant, for he ſays that it ſometimes has an erect ſtalk.

Native of Spain and Portugal. Cultivated in 1683, by Mr. James Sutherland. It flowers from june to auguſt [h].

13. Root large, from which proceed many tomentoſe leaves, like thoſe of White Horehound, ſpreading on the ground in a circle; from the middle of theſe riſe ſeveral ſtems, which are alſo very tomentoſe like White Horehound, and on the top of them are white flowers in a large thick ſpike. Seed black. The whole plant is larger and thicker than the common Scordium, for which they uſe it in Crete or Candia, where it grows abundantly on rocks, by way ſides, and on the borders of fields [i].

14. The root conſiſts of various fleſhy roundiſh or fuſiform tubers, the firſt year forming the root-leaves, and the ſecond many flowering-ſtems. Theſe are viſcid, ſet with long white villoſe hairs, in height one foot or eighteen inches, either entirely erect, or procumbent at the baſe. Leaves bluntiſh, crenate, wrinkled, viſcid, the lower petioled, the upper ſeſſile, all having a ſtrong ſmell. Spikes ſeſſile; the principal ones three or four inches long, thoſe on the branches ſcarcely an inch or an inch and half in length: they are compoſed of whorls, the lower ones ſometimes remote, the reſt cloſely approximated, hence reſembling a ſpike, and that the more, the nearer the upper leaves at the whorls approach to bractes: theſe are the length of the calyxes, purple at the edge, and are placed on a very ſhort common peduncle in the axil of the leaf. On each of theſe peduncles there are three, five, or ſeven flowers, each ſupported by its bracte. Calyxes ſtriated, hairy. Lips of the corolla ſlightly tinged with purple: throat pale dotted with purple and having a few villoſe hairs at the origin of the lower lip: the ſegments of the throat are not bent back: the upper lip is convex. Seeds brown, with a white hilum. The plant is more or leſs villoſe in different individuals and at different ages [k].

Its native place is not known. The ſeeds were ſent by Willich to Jacquin; and he introduced them at Kew in 1774. It flowers in may and june [l].]

15. Stems two feet high. Leaves hairy, ſomewhat like thoſe of Marjoram, but larger. Flowers in whorls, and terminating in a large roundiſh head. Stamens longer than the corolla, which is of a pale fleſh colour. [The lower lip of the corolla is ſerrate, but not concave [m].

Native of Virginia. Introduced 1788, by Thomas Walter, Eſq. It flowers in auguſt [n]. If N. virginica of Miller be the ſame, he cultivated it in 1759.

16. Stems erect, obtuſe-angled, tomentoſe. Leaves ovate-lanceolate, tomentoſe, ſerrate, quite entire towards the baſe, petioled. Whorls ſeveral, forming a ſort of interrupted ſpike, remote, with ſubform bractes, generally thicker at the tip, pubeſcent, two under each flower, the length of the calyxes. Calyx villoſe, five-toothed. Corolla pale violet: upper lip lanceolate, entire, concave with the edge rolled back, erect, blunt, ſhorter than the filaments: lower lip longer, wider, three-parted, the middle part larger, crenulate, bent down at the edge.—Native of Malabar: where it was found by Koenig [o].

17. The upper lip of the corolla is the ſhorteſt of all in this ſpecies, and entire. Stamens the length of the lower lip. Flowers in whorls. It is allied to the preceding, and a native of the Eaſt Indies. See Lavandula carnoſa.

18. Stem erect without branches. Lower leaves petioled, upper ſeſſile, not crenate, oblong, three-lobed, four-lobed or five-lobed; lobes alternate, oblong. Flowers very ſmall. Anthers two-parted.—Native of all Siberia beyond the river Jeniſea [p].

19. Stems ſeveral, erect, ſcarcely a foot high, decuſſately branched; branches oppoſite, erect. Leaves bipinnate; pinnules linear, blunt: petioles ſhorter, ſomewhat embracing, channelled. Spikes terminating,

[a] Linn. [b] Hort. kew. [c] Linn. mant. [d] Hort. kew. [e] Linn. [f] Hort. kew. [g] Bellon. obſ. Clus. [h] Jacqu. obſ. [i] Herb. kew. [k] Linn. [l] Hort. kew. [m] Linn. mant. [n] Linn. ſpec.

elongated, conical; in which are innumerable, minute, subsessile flowers, accompanied with bristle-shaped bractes, arched upwards. Calyx oblong, turbinate, striated; the two lower toothlets shorter than the upper ones. Corolla white, a little longer than the calyx: tube turbinate: border two-lipped; upper lip very short, scarcely emarginate, villose above; lower trifid, with the lateral segments blunt, not emarginate, the middle one hanging down, longer, two-lobed. Filaments short: anthers ovate, twin, concealed within the upper lip. Seeds oblong, ovate on the outside, flattish, somewhat keeled within and smooth.—Native of Siberia [1].

Cavanilles observed it in flower at Madrid. Introduced in 1779 by Messrs. Kennedy and Lee. It flowers in june and july [2].

20. Stem erect, brachiate, round, purple, with white hairs, a span or a foot in height. Leaves bluntish, deeply and bluntly serrate, like those of Veronica officinalis; the lower ones quite entire. Petioles almost the length of the leaves. Spike terminating, bluntish, ovate-oblong. Bractes close, ovate, acute, the length of the calyx. Flowers sessile. Calyx of a dusky blueish colour and hairy. Corolla violet-coloured, very large; upper lip acutely bifid, lower scarcely crenate. Two stamens the length of the upper lip, two beyond the throat. Anthers two-parted.—Native of Siberia [1].]

PROPAGATION AND CULTURE.

All these plants are hardy herbaceous perennials, except one or two that are biennials. If the seeds be permitted to fall, the plants will rise without trouble; or being sown either in spring or autumn, will come up, and require only to be thinned where they are too close, and kept clean from weeds. Upon a poor dry soil they will not grow too rank, but continue much longer and appear handsomer than in rich ground, where they grow too luxuriant, and have not so strong a scent.

[NEPETA. See *Hyssopogon*, *Dracocephalum*, *Hyssopus*, *Lavendula*, *Melissa*.

NEPETELLA. See *Nepeta*.

NEPHELIUM. (Νεφωδιον, *nubecula*.)

Lin. mant. 18. *gen. Reich. n.* 1151. *Schreb. n.* 1425. & *p.* 837. *Gærtn. t.* 140. *Juss.* 191.

Class. 21. 5. Monoecia Pentandria.

Nat. order of *Tricoccæ*. *Corymbiferæ*, Juss.

GENERIC CHARACTER.

* *Male* flowers in a spiked raceme.

CAL. *Perianth* one-leafed, bell-shaped, five-toothed.

COR. none.

STAM. *Filaments* five, awl-shaped, longer than the calyx. *Anthers* blunt, two-parted at the base.

* *Female* flowers in the same raceme.

CAL. *Perianth* one-leafed, bell-shaped, four-toothed with two opposite teeth more remote; shrivelling.

COR. none.

PIST. *Germs* two, superior, roundish, muricated, larger than the calyx. *Styles* two to each, filiform, recurved, springing up between the germs. *Stigmas* thickish, blunt.

PER. *Drupe* ovate, hairy, with a cartilaginous rind, and a watery pulp. (*Capsules* two, muricated, one-celled, one-seeded, *G.*)

SEED. *Nut* solitary.

ESSENTIAL CHARACTER.

MALE. *Cal.* five-toothed. *Cor.* none.

FEM. *Cal.* four-cleft. *Cor.* none. *Germs* two, with two styles to each. *Drupes* (Capsules, *G.*) two muricated, one-seeded.

SPECIES.

1. Nephelium lappaceum.

Lin. syst. 851. *Reich.* 4. 136. *mant.* 125. *Gærtn. fruct.* 2. 272.

DESCRIPTION, *&c.*

Leaves alternate, pinnate, two-paired, abrupt: leaflets obovate, the outer ones larger. Raceme consisting of a few spikelets, erect, shorter than the leaves [3]. The fruit, according to Gærtner, consists of two capsules, one of which however is generally abortive, coriaceous, thick, ovate, turgidly lenticular, muricated on the outside with awl-shaped, flexile bristles, within ferobicular-rugged, one-celled, opening at the inner edge. Seeds solitary, large, ovate, very slightly compressed, somewhat bertied [4].

Jussieu ranges this plant with Ambrosia and Xanthium; but the inverted situation of the embryo alone, says Gærtner, is sufficient to forbid this union, even if they agreed in all other circumstances. He thinks that it approaches nearer to the Chestnut, because it it has two styles to each capsule, and no albumen.

Native of the East Indies.

NEPTUNIA. See *Mimosa*.

NERIO AFFINIS. See *Biguonia* and *Carbera*.]

NERIUM (*of Pliny. Name of Dioscorides. Derivation uncertain. From* α *priv.* & νηρος *ante, q. inamabilis*; or απο του νειν *to flow, q. corpus minime fluidum reddat.* Raius.)

Lin. gen. n. 297. *Reich. n.* 323. *Schreb. n.* 420. *Tournef. t.* 374. *Juss.* 145. *Gærtn. t.* 117.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Contortæ*. *Apocineæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, acute, very small, permanent.

COR. one-petalled, funnel-form: *tube* cylindric, shorter than the border: *border* very large, five-parted; *segments* wide, blunt, oblique.

Nectary, a crown terminating the tube, short, lacerated into capillary segments.

STAM. *Filaments* five, awl-shaped, very short, in the tube of the corolla. *Anthers* sagittate, converging, terminated by a long thread.

PIST. *Germ* roundish, bifid. *Style* cylindric, the length of the tube. *Stigma* truncate, sitting on an orblet, fastened to the anthers.

PER. *Follicles* two, round, long, acuminate, erect, one-valved, opening longitudinally.

SEEDS numerous, oblong, crowned with down, placed imbricately.

ESSENTIAL CHARACTER.

Contorted. *Cor.* with the tube terminated by a lacerated crown. *Follicles* two, erect.

SPECIES.

1. Nerium Oleander. *Common Rosebay* or *Oleander*.

Lin. spec. 305. *fl.* 253. *Reich.* 1. 594. *hort. cliff.* 76. *upf.* 53. *ff. suppl. n.* 108. *Knorr del.* 2. N. 2. *Kniph. cent.* 6. *n.* 63. *Blackw. t.* 531. *Pluenck, ic.* 128. *Alliom. pedem. n.* 368.

N. floribus rubescentibus. *Bauh. pin.* 464.

N. f. Oleander. *Ger.* 1220. *emac.* 1406. 1. *Raii hist.* 1767.

N. f. Rhododendron flore rubro. *Bauh. hist.* 2. 141.

Oleander f. Laurus rosea. *Lob. ic.* 364. *Park. theat.* 1469. 1.

Rhododendrum. *Dod. pempt.* 851.

β. Flore albo. *White Rosebay* or *Oleander*.

N. flore albo. *Ger.* 1220. 2. *emac.* 1406. 2. *Park. theat.* 1470. 1.

γ. Flore pleno. *Double Rosebay* or *Oleander*.

Leaves linear-lanceolate in threes, transversely nerved underneath, calycine leaflets squarrose, nectaries flat three-cusped.

2. Nerium odorum. *Sweet-scented Rosebay* or *Oleander*.

Ait. hort. kew. 1. 297.

N. indicum. *Mill. dict. n.* 2.

N. Oleander. *Lour. cochinch.* 115.

N. ind. angustifolium, floribus odoratis simplicibus. *Herm. lugdb.* 447. *Raii hist.* 1768.

Oleander sinicus. *Rumph. amb. auct.* 2. 23. *t.* 16. *f.* 1.

Tsjovanna areli. *Rheed. mal.* 9. *p.* 1. *t.* 1.

Belutta-areli. *Rheed. mal.* 9. *p.* 3. *t.* 2.

β. N. latifolium. *Mill. dict. n.* 3.

N. ind. latif. flor. pleno. *Herm. lugdb.* 447. *t.* 449. *Raii hist.* 1768.

Leaves linear-lanceolate in threes, calycine leaflets erect, nectaries many-parted, segments filiform.

[3. Nerium salicinum. *Willow-leaved Rosebay* or *Oleander*.

Vahl symb. 2. 45. *Forsk. descr.* 205.

Leaves linear-lanceolate in threes nerveless.

[1] Cavanilles. [2] Hort. kew. [3] Linn. suppl. [4] Linn. mant. [4] Gærtner.

4. Nerium obesum.
Vahl symb. 2. 45. Forst. descr. 205.
Leaves oblong, lanceolate, scattered, callous underneath.

5. Nerium zeylanicum.
Lin. spec. 306. Reich. 1. 595. amoen. 4. 309. Gaertn. fruct. 2. 172.
Apocynum arborescens, Neriifore, minus. *Burm. zeyl. 23. t. 11. f. 2.*
Leaves lanceolate, opposite, branches straight.

6. Nerium divaricatum.
Lin. spec. 306. Reich. 1. 595. fl. zeyl. n. 109. Thunb. jap. 110. Leur. cochinch. 115.
Apocynum zeylanicum indicum frutescens, Neriifore candidissimo. *Herm. par. 40.*
N. indicum scandens, flore albo. *Burm. zeyl. 168. t. 78. f. 2.*
Leaves lanceolate-ovate, branches divaricating.

7. Nerium antidysentericum. *Oval-leaved Rosebay.*
Lin. spec. 306. Jacq. 253. Reich. 1. 595. fl. zeyl. n. 107. mat. med. 71. Planch, ic. t. 129. Leur. cochinch. 116.
N. indicum siliquis angustis erectis longissimis. *Burm. zeyl. 167. t. 77.*
Codagu-Pala *Rheed. mal. 1. 85. t. 47.*
Leaves oblong-ovate, panicles terminating.

8. Nerium coronarium. *Broad-leaved Rosebay.*
Hort. kew. 1. 297. Jacqu. collect. 1. 138, ic. 1. t. 52.
Jasminum zeylanicum folio oblongo, flore albo pleno odoratissimo. *Burm. zeyl. 129. t. 59.*
Nandi Iavanam major and minor. *Rheed. mal. 2. 105. t. 54, 55.*
Leaves elliptic, peduncles in pairs from the forks of the branches, two-flowered.

9. Nerium scandens. *Climbing Rosebay.*
Leur. cochinch. 116.
Stem climbing, peduncles terminating many-flowered, segments of the corolla very long.

DESCRIPTIONS, &c.

These are beautiful evergreen shrubs or trees, upright and branching. Leaves opposite, or by threes in a sort of whorl. Flowers in cluters or corymbs from the ends of the stem and branches.]

1. This rises with several stalks to the height of eight or ten feet. The branches come out by threes round the principal stalks, and have a smooth bark, which in that with red flowers is of a purplish colour, but in that with white flowers is of a light green. The leaves for the most part stand by threes round the stalks, upon very short foot-stalks, and point upwards; they are three or four inches long, and three quarters of an inch broad in the middle, of a dark green, very stiff, and end in acute points. The flowers come out at the end of the branches in large loose bunches, and are of a bright purple, or crimson colour, or of a dirty white. The seed-vessels are brown follicles, about four inches long. It flowers in july and august, and in warm seasons the flowers are succeeded by pods, but the seeds seldom ripen well in England.

In warm dry summers this plant makes a fine appearance, the flowers then opening in great plenty; but in cold moist seasons the flowers often decay without expanding, unless the plants are placed in a greenhouse or under a glass-case. That with white flowers is the most tender.

[Other varieties are the stripe-leaved; the broad-leaved double-flowered, the striped double-flowered, and different shades of red from purple to crimson or scarlet.

Jussieu remarks that Nerium Oleander is not milky.

Native of the Levant, Spain, Portugal, Italy, by the sides of streams, and near the sea coast. It abounds every where in the island of Candia or Crete by rivers and torrents, and there the variety with white flowers is chiefly found; in the mountains and plains about Antioch or Scanderoon it is found abundantly; in Sicily, by all the torrents descending from mount Etna; in many parts of Italy, as between Nice and Genoa, near mount Baldo, &c. but particularly in all the low grounds of Magna Graecia in the kingdom of Naples. Belon says that in Crete and on mount Athos the Rhododendron, which is this shrub, grows to a great size, insomuch that in Crete it is sometimes used for building timber. It has the name Rhododendron, from the similitude of its flowers in size and colour to a rose: Rhododaphne for the same reason, and because, as Gerarde expresses it, it makes a gallant shew, like the Bay-tree. Hence also our English name *Rose-Bay*; but it is now more commonly known by its officinal name, *Oleander*; which is also adopted into all the European languages, except the French, in which it is *Laurier* or *Laurier-Rose*, that is *Bay-Rose*. The Italians have adopted *Nerio* and *Rosalauro*, as well as *Oleandro*. It was cultivated by Gerarde in 1596.

The leaves of Oleander are acrid and poisonous, therefore certainly not proper to be used internally without great caution. Oil, in which the leaves are infused, is recommended in the itch and other cutaneous disorders, in preference to mercurial preparations, for children and delicate constitutions[a].]

2. This rises with shrubby stalks six or seven feet high, covered with a brown bark. Leaves stiff, from three to four inches long, and not more than a quarter of an inch broad, of a light green, and the edges reflexed; they are opposite, or alternate, or by threes round the branches. The flowers are produced in loose bunches at the end of the branches; they are of a pale red, and have an agreeable musky scent. It grows naturally in India.

[This has been confounded with the first species.— It was cultivated in 1758, by Mr. Miller, and flowers from june to august[b]. Probably the N. Oleander of Thunberg and Loureiro is this species. The latter however asserts that his plant has scarcely any smell.]

β. Leaves six inches long, and one inch broad in the middle, of a much thinner texture than those of the first, and their ends are generally reflexed; they are of a light green, and irregularly placed on the branches by pairs, alternately, or by threes. The flowers are produced in very large bunches at the end of the branches, upon long peduncles; they have three or four rows of petals one within another. They are much larger than those of the common sort, and smell like those of Hawthorn. The plain flowers are of a soft red or Peach colour; but in most they are beautifully variegated with a deeper red, and make a fine appearance. The usual time of flowering is in july and august, but in a warm stove it will continue in flower till michaelmas. The flowers being double, they are not succeeded by seeds.

All these are supposed to have a poisonous quality; the young branches, when cut or broken, have a milky juice or sap, and the larger branches, when burnt, emit a very disagreeable odour.

Mr. Miller says it grows naturally in both Indies, that it was first introduced into the British islands in America from the Spanish Main, and that it is called by the inhabitants of those islands South Sea Rose. The beauty and sweetness of the flowers engaged the inhabitants to cultivate the plants, and in many places to form hedges of them, but many of the cattle that browzed on them were killed, so that they are now only preserved in gardens, where they make a fine appearance great part of the year.

[N. odorum was cultivated by Mr. Miller in 1758[c].] He says that the double Indian Rosebay was not known here till the beginning of last century, [by which I suppose he intended the beginning of the present century. Dr. Patrick Browne says that the South Sea Rose is cultivated in most gardens in Jamaica; that it generally bears large double flowers, but that he has sometimes found them simple and fertile, with all the characters of the genus[c].

3. This is allied to N. Oleander, but differs in having the leaves blunt, somewhat veined underneath, but not with very abundant transverse nerves.

4. Trunk soft, resembling a bulb under ground, the size of a man's head. Branches the thickness of the little finger, the same substance with the trunk, attenuated above; when flowering woody and warted. Leaves at the ends of the branches, approximating, subpetioled,

[a] Allione. [b] Hort. kew. [c] Idem. [c] 181. 3.

subpetioled, often three inches long, mucronate, veinless; the younger ones soft on both sides. There are some rigid bristles in the axils of the leaves. Corymbs terminating, many-flowered. Flowers on short villose pedicels. Calyx scarcely two lines in length, pubescent, with lanceolate segments. Tube of the corolla narrowed at bottom for the space of two lines, then widening, an inch long, pubescent, with five villose longitudinal lines within: segments of the border rounded. Filaments in the narrower part of the tube. Anthers cohering with the stigma at top, yellow with a brown spot on the inside, ending at top in a hairy bristle the length of the corolla. Germs two, globular: style one, the length of the anthers: stigma capitate, two-toothed at top, five-toothed at the sides. Although the leaves are scattered, which is seldom the case in the Contortæ, yet the form of the anthers and their coalesion with the stigma prove it to be of this genus. By the corolla and naked throat it approaches to Echites, but the glands at the base of the germ are wanting; and since the anthers are tailed, it seems better to retain this plant among the Neriums, till we become acquainted with the fruit[1].

5. Stems round, very dark purple, smooth, erect, swelling at the joints. Leaves oblong, acuminate, resembling those of Myrtle, green on both sides. Flowers at the ends of the branches[2]. Germs two, superior, coadunate into a single style. Pericarp two coriaceous follicles, very finely striated on the outside, very smooth within, fusiform, one-celled, opening on the inner side. Seeds numerous, fusiform, somewhat wrinkled, ash-coloured, crinite. Hairs simple, white and silky, four times as long as the seed, fastened by the base on both sides to the sutures of the follicles, and hanging down so that the hairy vertex is turned towards the bottom of the pericarp[3].—Native of the East Indies.

6. Stem frutescent, round, decumbent or scandent, ferruginous. Branches alternate, divaricating, villose. Leaves opposite, ovate with a blunt point, quite entire with a reflex margin, parallel-nerved, paler underneath, smooth, an inch long, the last smaller. Petioles semicylindric, scarcely a line in length. Flowers in panicles at the ends of the branches. Panicle dichotomous and trichotomous. Peduncles and pedicels filiform, smooth. Calyx shorter than the tube of the corolla. Corolla white. Stigma capitate, truncate[4].

According to Loureiro it is a middle-sized tree; leaves waved, shining; flowers reddish yellow, with a reflex border, and the segments of the crown or nectary awl-shaped and short; anthers subsessile, sagittate, converging into a cone; style cylindric, thickish, sheathing another above it; stigma ovate; follicles round, long, almost united, erect.—Native of the East Indies, Japan, and Cochinchina.

7. This also is a middle-sized tree, with brachiate branches. Leaves opposite, flat, quite entire, smooth. Flowers herbaceous or greenish white, in short subterminating racemes. Segments of the crown oblong, alternately trifid and linear.

The wood of this and the preceding species is proper for the turner, and to make cabinets and other elegant furniture. It is very white and of a fine grain, like ivory, only much lighter. It mixes admirably with ebony. It is reputed to be a specific in the dysentery[5].

Native of the East Indies, Cochinchina, and some parts of the Russian empire.—Introduced in 1778, by Patrick Russell, M. D.[6]

Nerium tinctorium is a middle-sized tree, from the quality of its leaves called Nerium tinctorium, or Dyer's Rose-Bay, by Dr. Roxburgh. It comes nearest Nerium antidysentericum, the tree which yields the Coneesi bark, of our Materia Medica; Codago Pala of the Hortus Malabaricus, Pala Cadija of the Hindoos; they are both natives of the lower region of those mountains, which bound the Rajahmundry Circar on the north side, and are so much alike in most respects, the nectary excepted, that, without a perfect knowledge of both, the one may be mistaken for the other; and I have no doubt but the bark of this new Nerium might have been gathered and sold for Coneesi bark; which with the Hindoos is esteemed a specific in most complaints of the bowels, and perhaps deserves a better name, than it has hitherto acquired in Europe.

Description of Nerium tinctorium.—Trunk, very irregular in shape, when very old it is from one and a half to two feet in diameter, but when of that size, it is full of large rotten cavities; its height to the branches, when large, is from ten to fifteen feet; the bark of the old wood is scabrous, of the young pretty smooth and ash-coloured. Wood remarkably white, close-grained, very beautiful, coming near to Ivory in appearance. Branches irregularly disposed, being bent in various forms: branchlets opposite. Leaves numerous, opposite, on short foot-stalks, oval, pointed, pretty smooth, entire, pale green, when full grown from five to eight inches long, and from three to four broad. Flowers about an inch and half in diameter when expanded, perfectly white, fragrant, and disposed on lax globular panicles, at the extremity of the branches. A small oval bracte below each subdivision of the panicles. Calyx below the germ, divided into five equal, semiorbicular segments. Segments of the corolla linear, oblong, spreading. Nectary consists of many ramous white filaments crowning the mouth of the tube. Anthers rigid, united to one another laterally, forming a very firm conical cover for the stigma, their lower parts are covered with fine white hairs. Germs two, seemingly united. Stigma double, covered with transparent gluten, by which it adheres to the inside of the anthers. Pericarp two very long slender pendulous follicles, united at both ends; singly they are from twelve to twenty inches long, and about as thick as a common pencil.

This tree, as observed before, is a native of the lower regions of the mountains directly north from Coringa, in the Rajahmundry Circar; it contains a mild milky juice, chiefly the tender branches and young leaves, which flows out on being wounded.—Nerium antidysentericum contains a similar juice.

The natives make scarcely any use of this tree, except for fire-wood, and the more it is cut down, the more it increases, many shoots issuing from the old stumps. These, in one year, acquire the height of eight or ten feet, and are thick in proportion; it casts its leaves during the cold season, (perhaps it may not do so in a state of cultivation.) About the beginning of the hot season, march and april, the young leaves begin to make their appearance, together with the flowers, by the end of may, those that first began to be unfolded will have attained to their full size; about this time also it ceases flowering, and the seed vessels are fully formed, but the seeds are not ripe till january or february.

The colour the leaves sometimes acquired, in drying for the Hortus Siccus, first induced Dr. Roxburgh to think they were possessed of colouring matter, and the result of some experiments fully answered his expectations, although he has been often deceived by the same appearances in the leaves of other plants.

The method he took to extract the colour was, by collecting, promiscuously, the large and small leaves, while fresh; putting them on the fire in common unglazed earthen pots, with soft well water, and, when scalding hot, straining off the liquor, which had acquired a deep green colour, with something of the violet coloured scum that is observed on the common Indigo, not towards the end of the fermentation: with little agitation, this liquor began to granulate; to promote the granulation as well as the precipitation, he tried various liquors; viz. cold infusion of Jamblong bark (Jambolifera pedunculata of Linneus) which is that the Hindoos use universally on this part of the coast, to precipitate their Indigo; lime water; a lixivium of wood-ashes; a mixture of lime-water and lixivium of wood-ashes, and also a ley, made of equal parts of caustic vegetable alkali and quick-lime; these five he repeatedly tried, and as often found that lime-water and a lixivium of wood-ashes mixed together answered best; the fæcula was washed, filtrated and dried in the usual manner.

[1] Vahl. [2] Burm. zeyl. [3] Gærtner. [4] Thunberg. [5] Loureiro. [6] Hort. kew.

The quick and luxuriant growth of this tree, in its native *soil*, will be a great inducement to those who wish to cultivate it; which can require little or no trouble, and the soil that it is always found wild in, is the barren dry rocky hills, and lower region of mountains, which is totally unfit for every sort of agriculture. The lower parts of the steepy rocky mountains of Saint Helena, seem to be the very soil and situation it delights in; its size and quick growth will render it valuable there, if it be only for fire-wood; with that view Dr. Roxburgh sent a pretty large quantity of seeds to the Planter's Society on that island.

It may be said that we are already in possession of a sufficient number of good blues, consequently that it is unnecessary to attend to this new Indigo; to obviate this objection, it may be observed, that the common Indigo plant is only to be brought to perfection by nice, expensive, and labouring culture; is liable to many accidents, from changes of weather, and other causes that no human foresight can prevent: these are well known facts to every one that cultivates Indigo to any extent. This tree is not subject to these inconveniences; besides it requires not the smallest care, is found in the greatest abundance, growing wild in the most barren tracts that can possibly be imagined, and requires only to be cut down once every year, to make it produce a large supply of young shoots with very luxuriant leaves the following season; besides, the colour that this Indigo may give to cloth, &c. may be different from any other hitherto known, consequently, may prove of considerable benefit to a commercial nation like Great Britain.

Dr. Roxburgh's experiments do not yet enable him to determine, with precision, the proportion of pure colouring-matter these leaves yield, but he has reason to think it will be about one in two hundred, that is two hundred pounds of the fresh leaves, produce one pound of Indigo, which is rather more than the leaves of the common Indigo plant yield †.

8. This is an elegant branched shrub, four feet high, milky, with an ash-coloured bark. The younger branches are shining, green, compressed a little, opposite at the end. Leaves long, lanceolate, acute, quite entire, shining, on short petioles, opposite. Peduncles one-flowered, thickish, in pairs from the divisions of the branchlets and decussating with them. Flowers handsome but without scent; perianth green; tube of the corolla greenish yellow; border snow-white. It approaches to Gardenia, but seems rather to belong to this genus *.—Native of the East Indies. Cultivated in 1770 by Mr. James Gordon. It flowers most part of the summer *.

9. This is a large shrub with feandent branches. Leaves ovate-oblong, quite entire, subacuminate, smooth, opposite. Flowers large, with a white tube and a very red border. Calyx five-cornered, with fleshy, upright segments. Tube of the corolla cylindric at bottom, pitcher-shaped at top; segments of the border, subulate-linear, very long, reband. Nectary as in the other species. Anthers ending in a very long filiform tail. Germ superior, two-lobed. Style the length of the stamens. Stigmas two one over the other; the lower cylindric, the upper acute, parted, erect. Follicles horizontal, thick, blunt. Although the very long segments of the corolla cause this to be allied to Echites caudata, yet the throat having a nectary, whereas in Echites it is naked, and the Contortæ being best distinguished by their nectaries, it ranges most properly under this genus. The follicles being horizontal is no obstacle, when other circumstances agree.—Native of Cochinchina *.]

PROPAGATION AND CULTURE.

These plants are generally propagated by layers in this country, for although they will sometimes take root from cuttings, yet that being an uncertain method, the other is generally pursued; and as the plants are very apt to produce suckers, or shoots from their roots, those are best adapted for laying, for the old branches will not put out roots; when these are laid down, they should be slit at a joint, in the same manner as is practised in laying Carnations, which will greatly facilitate their taking root: if these branches are laid down in autumn, and are properly supplied with water, they will have taken root by that time twelvemonth, when they should be carefully raised up with a trowel; and if they have taken good root, they should be cut off from the old plant, and each planted in a separate small pot, filled with soft loamy earth; those of the common sort will require no other care, but to be placed in a shady situation, and gently watered as the season may require, till they have taken new root; but the two other species should be plunged into a very moderate hot-bed, to forward their taking root, observing to shade them from the sun in the heat of the day; after the common sort has taken new root, the plants may be placed in a sheltered situation with other hardy exotics, where they may remain till the end of october, when they should either be removed into the green-house, or placed under a hot-bed frame, where they may be protected from frost in winter, but enjoy the free air at all times when the weather is mild.

This sort is so hardy as to live abroad in mild winters, if planted in a warm situation; but as they are liable to be destroyed in severe frost, the best way is to keep the plants in pots, or if they are very large in tubs, that they be sheltered in winter, and in the summer removed abroad, placing them in a warm sheltered situation. In the winter they may be placed with Myrtles, and other of the hardier kinds of exotic plants, in a place where they may have as much free air as possible in mild weather, but screened from severe frost; for if these are kept too warm in winter, they will not flower strong, and when the air is excluded from them, the ends of their shoots will become mouldy; so that the hardier they are treated, provided they are not exposed to hard frosts, the better they will thrive.

The other two sorts require a different treatment, otherwise they will not make any appearance; therefore the young plants when they have taken new root, should be gradually inured to bear the open air, into which they should be removed in july, where they may remain till october, provided the weather continues mild; but during this time, they should be placed in a sheltered situation; and upon the first approach of frost, they should be removed into shelter, for if their leaves are injured by frost, they will change to a pale yellow, and will not recover their usual colour till the following autumn. These sorts may be preserved in a good green-house through the winter, and the plants will be stronger than those which are more tenderly treated; but in may, when the flower-buds begin to appear, the plants should be placed in an open glass-case, where they may be defended from the inclemency of the weather; but when it is warm weather, the air should at all times be admitted to them in plenty. With this management the flowers will expand, and continue long in beauty; and during that time, there are few plants which are equal to them, either to the eye or nose, for their scent is very like that of the flowers of the White Thorn; and the bunches of flowers will be very large, if the plants are strong.

[NERIUM. See *Echites*, *Plumeria*, *Rhododendron*.

NERTERIA. (*From νερτερος, inferus, because it lies under ground. Hence it was named* Nertera *by Solander. Dr. Smith changed it to* Nerteria.)

Smith is. ined. 2. *t.* 28.

Nertera. *Lin. gen. Schreb. n.* 229. *&c p.* 821. *Gærtn. t.* 26. Gomozia *Lin. gen. Schreb. n.* 230. *suppl.* 17. *Juss.* 198. Gomezia. *Mutis Mss.*

Class. 4. 2. Tetrandria Digynia.

GENERIC CHARACTER.

CAL. a superior, very small, undivided rim.

COR. one-petalled, funnel-form, superior: *tube* short, enlarging gradually: *border* four-cleft, with sharp segments bent back, and shorter than the tube.

STAM. *Filaments* four, equal, inserted into the base of the corolla, filiform. *Anthers* oblong, two-lobed, erect.

PIST.

† William Roxburgh, M. D. to Dalrymple's Orient. repos. n. 1.
* Jacquin. * Hort. kew. * Loureiro.

PIST. *Germ* inferior, oval, somewhat compressed, even. *Styles* two, filiform, slightly connate at the base, smooth. *Stigmas* acute, reflex, divaricating.

PER. *Berry* globular, umbilicate at top with a very small round scar, two-celled.

SEEDS solitary, roundish, acuminate at the base, flat on one side, convex on the other.

OBS. *This genus is allied to* Manettia.

ESSENTIAL CHARACTER.

Cor. funnel-form, four-cleft, superior. *Berry* two-celled. *Seeds* solitary.

SPECIES.

Nerteria depressa.
Smith ic. ined. 2. 28.

Nertera depressa. *Gærtn. fruct.* 124.

Gomozia granadensis. *Lin. fil.* 167. *suppl.* 129.

DESCRIPTION, *&c.*

Root fibrous, annual. Stems herbaceous, procumbent, rooting at the joints, branched, leafy, filiform, somewhat angular, smooth. Branchlets axillary, opposite, erect, one-flowered, short. Leaves opposite, petioled, orbiculate-cordate, bluntish, quite entire, even; stem-leaves spreading, branch-leaves erect-appressed. Petioles roundish, grooved above, almost the length of the leaves. Flowers solitary at the ends of the branchlets, sessile, pale. Bractes two, opposite, acute, very small. Berry succulent, very smooth, red, the size of a pea.

Found by Mutis very frequently in wet marshy places of New Granada[5]. It is also a native of New Zealand[6].

NETTLE. See *Urtica.*

——— Dead. See *Lamium.*

——— HEMP. See *Galeopsis.*

——— TREE. See *Celtis.*

NEUDORFFIA. See *Nolana.*

NEURADA. (*From* νευρα, *a nerve.*)
Lin. gen. n. 587. *Reich. n.* 640. *Schreb. n.* 799. *Juss.* 336. *Gærtn. t.* 32.

Class. 10. 5. Decandria Decagynia.

Nat. order of *Succulentæ, Rosaceæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, superior, very small.

COR. *Petals* five, equal, larger than the calyx.

STAM. *Filaments* ten, the length of the calyx. *Authers* simple.

PIST. *Germ* gibbous, inferior. *Styles* ten, the length of the stamens. *Stigmas* simple.

PER. *Capsule* orbiculate, depressed, convex underneath, defended all over with ascending prickles, ten-celled.

SEEDS solitary.

ESSENTIAL CHARACTER.

Cal. five-parted. *Pet.* five. *Caps.* inferior, ten-celled, ten-seeded, prickly.

SPECIES.

1. Neurada procumbens.
Lin. spec. 631. *fil.* 438. *Reich.* 2. 406. *hort. upf.* 117. *Forst. defer.* 90.

DESCRIPTION, *&c.*

This is an annual plant: the whole herb is white, with a nap like that of a cobweb. Cotyledons sagittate. Stems depressed, rigid, round, a palm high or more. Branches from each of the lower axils. Leaves alternate, petioled, ovate, plaited, sinuated as if gnawn, above less white or tomentose. Flowers axillary, subsessile[4]. The stem seems shrubby. Stem not five-cleft but manifoldly imbricate.—Native of Egypt, Arabia, and Numidia[3].

New Jersey Tea. See *Ceanothus.*

NHANDIROBA. See *Feuillea.*

NICANDRA. (*So named from Nicander, of Colophon, priest of Apollo, who lived about the time of Attalus. His Georgics are lost: this poem is commended by Cicero, and many fragments of it remain in Athenæus. He writ many other things, which are lost. There remain two poems of his with scholiasts and Separate, from which Dioscorides has taken much. These were printed at Venice in 1499, 1500, and 1523; at Cologne 1530; at Paris 1557; at Florence 1564; at Antwerp 1567; at Geneva 1606. There is a fine manuscript of Nicander at Vienna.* Haller.)
Lin. gen. Schreb. n. 714. Potalia. *Amb.* 151.

Class. 10. 1. Decandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, turbinate, thick, coloured, four-parted: *segments* wide concave, blunt; the two opposite outer ones larger, and the two internal ones less.

COR. one-petalled: *tube* very short: *border* deeply ten-cleft: *segments* oblong, imbricate, curved inwards at top, rigid.

Nellary, a short membranaceous ring, surrounding the base of the germ.

STAM. *Filaments* ten, very short, connected with the nectary, inserted into the receptacle. *Authers* linear, four-cornered, acute, erect, approximating.

PIST. *Germ* ovate. *Style* short. *Stigma* peltate, orbicular, six-rayed.

PER. *Berry* roundish, six-grooved, three-celled.

SEEDS very many, very small, angular.

ESSENTIAL CHARACTER.

Cal. turbinate, coloured, four-parted. *Cor.* one-petalled, ten-cleft. *Germ* encircled with a membranaceous ring. *Stigma* peltate, orbicular, six-rayed. *Berry* roundish, six-grooved, three-celled, many-seeded.

SPECIES.

Nicandra amara.
Lin. fil. ed. Gmel. 677.

Potalia amara. *Amb. guian.* 394. *t.* 151.

DESCRIPTION, *&c.*

Stem simple, straight, hard, woody, knotty, the thickness of a finger. Leaves simple, entire, smooth, narrow at the base, wide above, rounded, and pointed at the end, a foot and half long, and five inches wide, with a protuberant midrib underneath; they are opposite and decussated: petiole rounded, attached to a sheath that embraces the stem. Flowers terminating, on one, two or three peduncles, the base enveloped in a sheath. Each peduncle bears two or three little parcels of three, four or five opposite flowers, having also a little sheath at their base: each flower has its pedicel, with two scales at its origin. The calyx is of a golden colour. The corolla is white. The fruit is yellow, fleshy, the size of a cherry.

Native of Guiana, in the extensive forests; flowering in july and august, and fruiting in october. All parts of the plant are bitter: the leaves and tender twigs are used in venereal cases, and where there is suspicion of poison: in a large dose it is highly emetic *.

NICKER TREE. See *Guilandina.*]

NICOTIANA. (*This genus takes its name from Jean Nicot of Nismes in Languedoc, agent from the king of France to Portugal, who procured the seeds from a Dutchman, who had brought them from Florida, and sent them to France.*)
Lin. gen. n. 248. *Reich. n.* 365. *Schreb. n.* 334. *Tournef. t.* 41. *Juss.* 125. *Gærtn. t.* 55.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Luridæ. Solanoæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ovate, half-five-cleft, permanent.

COR. one-petalled, funnel-form: *tube* longer than the calyx: *border* somewhat spreading, half-five-cleft, in five folds.

STAM. *Filaments* five, awl-shaped, almost the length of the corolla, ascending. *Authers* oblong.

PIST. *Germ* ovate. *Style* filiform, the length of the corolla. *Stigma* capitate, emarginate.

PER. *Capsule* subovate, marked with a line on each side, two-celled, two-valved, opening at top. *Receptacles* half-ovate, dotted, fastened to the partition.

SEEDS numerous, kidney-form, wrinkled.

OBS. *The acuminate and blunt figure in this genus is various.*

[5] Smith. [6] Forster. [4] Lin. fil. [3] Forsk.

* Ashiet.

ESSENTIAL CHARACTER.

Cor. funnel-form, with a plaited border. *Stam.* inclined. *Capf.* two-valved, two-celled.

SPECIES.

1. Nicotiana fruticofa. *Shrubby Tobacco.*
Lin. fpec. 258. *Reich.* 1. 502. *Lour. cochinch.* 111. *Burm. ind.* 54. *Rumph. amb.* 7. *t.* 8. *f.* 40.
β. N. alba. *Mill. dict. n.* 5.
N. major latifolia, floribus albis, vafculo brevi. *Mart. cent.* 5.
Leaves lanceolate fubpetioled embracing, flowers acute, ftem frutefcent.

2. Nicotiana Tabacum. *Virginian Tobacco.*
Lin. fpec. 258. *Reich.* 1. 502. *mat. med.* 64. *Woodv. med. bot.* 162. *t.* 60. *hort. cliff.* 56. 1. *upf.* 45. *Blackw. t.* 146. *Kniph. cent.* 4. *t.* 55. *Ludw. eff. t.* 167. *Knorr. del.* 1. T. 11. *Sabb. hort.* 1. *t.* 89. *Plenck, ic.* 99. *Abbot. georg. t.* 33. *Gærtn. fruct.* 1. 264.
α. N. latifolia. *Mill. dict. n.* 1.
Oroonoko Tobacco.
β. N. Tabacum. *Mill. dict. n.* 2.
Broad-leaved Virginian or *Sweet-fcented Tobacco.*
N. major latifolia. *Baub. pin.* 169. *Mor. hift.* 2. 492. *f.* 5. *t.* 11. *f.* 1.
N. major. *Tabern.*—*f.* Tabacum majus. *Baub. hift.* 3. 629.
Tabacum latifolium. *Camer. & Beft. eyft.*
Tabacco latifolium. *Park. parad.* 363. *t.* 361. *f.* 8. *Raii hift.* 713.
Petum latifolium. *Cluf. exot.* 309.
Sana fancta. *Lob. adv.* 251. *ic.* 252.
Hyofcyamus peruvianus. *Ger.* 285. 1. *emac.* 357. 1.
Tornobonia. *Cæfalp.*
Blennochoes. *Remealm. fpec.* 37. *t.* 38.

3. N. anguftifolia. *Mill. dict. n.* 3. *fig. t.* 185. *f.* 1.
Narrow-leaved Virginian Tobacco.
N. major anguftifolia. *Baub. pin.* 169. *Beft. eyft. Mor. hift.* 492. 2. *f.* 2.
N. f. Tabacum fol. anguftiore. *Baub. hift.* 3. 629.
Tabacum anguftifolium. *Camer.*
T. alterum minus. *Dalech.*
T. f. herba fancta minor. *Lob. adv.* 251.
Tabacco anguftifolium. *Park. parad.* 363. *Raii hift.* 714.
Petum anguftifolium. *Cluf. exot.* 309.
Sanafancta Indorum. *Ger.* 285. 2. *emac.* 357. 2.
Leaves lanceolate-ovate feffile decurrent, flowers acute.

3. Nicotiana ruftica. *Common* or *Engliſh Tobacco.*
Lin. fpec. 258. *Reich.* 1. 503. *hort. cliff.* 56. 2. *upf.* 45. *Blackw. t.* 437. *Kniph. cent.* 3. *n.* 65. *Sabb. hort.* 1. *t.* 90. *Berg. phyt.* 2. 57. *Plenck, ic.* 100.
N. minor. *Baub. pin.* 170. *Beft. eyft. Mor. hift.* 493. 4. *f.* 4.
Tabaccum anglicum. *Park. theat.* 711. *t.* 712.
Hyofcyamus luteus. *Dod. pempt.* 450. *Camer. Ger.* 284. *emac.* 356.
Priapeia quibufdam Nicotiana minor. *Baub. hift.* 3. 630. *f.* 3. *Raii hift.* 715.
Pachyphylla. *Remealm. fpec.* 40.
β. N. rugofa. *Mill. dict. n.* 7.
N. minor, fol. rugofioribus amplioribus. *Vaillant.*
Leaves petioled ovate quite entire, flowers obtufe.

4. Nicotiana paniculata. *Panicled Tobacco.*
Lin. fpec. 259. *Reich.* 1. 503. *Kniph. cent.* 2. *n.* 48. *Feuill. peruv.* 1. 717. *t.* 10.
Leaves petioled cordate quite entire, flowers panicled blunt club-fhaped.

5. Nicotiana urens. *Stinging Tobacco.*
Lin. fpec. 259. *Reich.* 1. 503.
N. arborefcens fpinofiffima, flore exalbido. *Plum. fpec.* 3. *ic.* 211.
Leaves cordate crenate, racemes recurved, ſtem hiſpid ſtinging.

6. Nicotiana glutinofa. *Clammy-leaved Tobacco.*
Lin. fpec. 259. *Reich.* 1. 503. *Kniph. cent.* 10. *n.* 65.
N. militaris. *Act. holm.* 1753. *p.* 41. *t.* 2.
Leaves petioled cordate quite entire, flowers in racemes pointing one way and ringent.

7. Nicotiana puſilla.
Lin. fpec. 258. *Reich.* 1. 504.
N. humilis. *Mill. dict. n.* 10. *fig. t.* 185. *f.* 2.
N. humilis, primulæ veris folio. *Houſt. Mſs.*
Leaves oblong-ovate radical, flowers in racemes acute.

DESCRIPTIONS, *&c.*

[Theſe are herbaceous annual plants, except the firſt, which is fuffrutefcent or has a permanent baſe. Flowers in ſpikes or panicles at the ends of the ſtem and branches. Leaves quite entire, except in *urens*, the capſule of which opens in the ſame manner with that of Acanthus, whence Juſſieu conjectures that it may be of a different genus.]

1. This riſes with very branching ſtalks about five feet high. Lower leaves a foot and half long, broad at the baſe, where they half embrace the ſtalks, and about three inches broad in the middle, terminating in long acute points. The ſtalks divide into many ſmaller branches, terminated by looſe bunches of flowers of a bright purple colour, ſucceeded by acute-pointed ſeed-veſſels. The ſeeds were ſent to Mr. Miller for Brazil Tobacco.

[Linnæus obſerves, that it reſembles N. Tabacum ſo much, as to give room to ſuppoſe, that it is ſcarcely any thing more than a variety of it, with a permanent baſe. He ſets it down as a native of the Cape of Good Hope and of China. It is probably not indigenous of the former. In the latter and in Cochinchina it is cultivated every where; according to Loureiro, it has its proper vernacular names, and is regarded as indigenous.—It was cultivated here in 1699, by the Dutcheſs of Beaufort, according to the Kew catalogue. Sir George Staunton informs us that great quantities of Tobacco are planted in the low grounds of China, through which the embaſſy paſſed; and that there is no traditional account of its being introduced into that country, or into India, where it is likewiſe cultivated and uſed in vaſt abundance. In neither country are foreign uſages ſuddenly adopted. It is poſſible, that like the Gin-ſeng, it may be naturally found in particular ſpots, both in the old and new world[1].

Nieuhoff (in 1662) ſays, that the weed called *Tobako* by the Malayans and Javaneſe after the Portugueſe, grows in all parts of the Indies. We are not told whether the plant cultivated in the eaſt is ſhrubby or herbaceous; but Nieuhoff informs us, that about Batavia it grows to the height of eight feet, with leaves of eighteen inches long and eight broad: and Loureiro deſcribes the ſtem as four feet high, ſomewhat ſhrubby, thick, round, white, hairy, upright, branched. Leaves broad-lanceolate, quite entire, waved, wrinkled, ſoft, juicy, ſubſeſſile, half-embracing, alternate. Flowers whitiſh red, on upright, terminating racemes. Border of the corolla ſpreading, with the ſegments acute.]

β. This riſes about five feet high. The ſtalk does not branch ſo much as that of the former. The leaves are large and oval, about fifteen inches long and two broad in the middle, but diminiſh gradually in ſize to the top of the ſtalk, and with their baſe half embrace it. The flowers grow in cloſer bunches than thoſe of the former, and are white. They are ſucceeded by ſhort, oval, obtuſe ſeed-veſſels. It flowers and perfects ſeeds about the ſame time with the former. It grows naturally in the woods of the iſland of Tobago, whence the ſeeds were ſent to Mr. Philip Miller by Mr. Robert Millar.

2. [Virginian Tobacco has a large, long, annual root; an upright, ſtrong, round, hairy ſtalk, branching towards the top; leaves numerous, large, pointed, entire, veined, viſcid, pale green; bractes long, linear, pointed; flowers in looſe cluſters or panicles; calyx hairy, about half the length of the corolla, cut into five narrow ſegments; tube of the corolla hairy, gradually ſwelling towards the border, where it divides into five folding acute ſegments of a reddiſh colour[2]. Capſule ovate-conical, clothed with the calyx, ſmooth, with four depreſſed ſtreaks, two-celled, opening four ways at top; partition ſimple, contrary to the valves. Receptacle very large, fungous, ovate-acuminate, convex on one ſide, and flat on the other, or ſeuiform-concave, faſtened on both ſides to the partition. Seeds

[1] Embaſſy, 2. 154. [2] Woodville.

very numerous, ſmall, ovate, ſubreniform, with raiſed lines or nerves beautifully netted, of a yellowiſh bay colour[a].]

Mr. Miller has made three ſpecies of the Virginian Tobacco.

α. The great broad-leaved, which he ſays was formerly the moſt commonly ſown in England, and has been generally taken for the common broad-leaved Tobacco of Caſpar Bauhin and others, but is very different from it. The leaves are more than a foot and half long, and a foot broad, their ſurfaces very rough and glutinous, and their bales half embrace the ſtalk. In a rich moiſt ſoil the ſtalks are more than ten feet high, and the upper part divides into ſmaller branches, which are terminated by looſe bunches of flowers, ſtanding erect: they have pretty long tubes, and are of a pale purpliſh colour. It flowers in July and auguſt, and the ſeeds ripen in the autumn. This is the ſort which is commonly brought to market in pots, and by ſome is called Oroonoko Tobacco.

β. The ſtalks of this, which is the broad-leaved Tobacco of Caſpar Bauhin, ſeldom riſe more than five or ſix feet high, and divide into more branches. The leaves are about ten inches long, and three and a half broad, ſmooth, acute, ſeſſile; the flowers are rather larger, and of a brighter purple colour. It flowers and perfects ſeeds at the ſame time; and is called by ſome ſweet-ſcented Tobacco.

γ. Narrow-leaved Virginian Tobacco, riſes with an upright branching ſtalk, four or five feet high. The lower leaves are a foot long, and three or four inches broad: thoſe on the ſtalks are much narrower, leſſening to the top, and end in very acute points, ſitting cloſe to the ſtalks; they are very glutinous. The flowers grow in looſe bunches at the top of the ſtalks; they have long tubes, and are of a bright purple or red colour. They appear at the ſame time with the former, and their ſeeds ripen in the autumn.

Theſe are all natives of America. [Tobacco was cultivated in England before 1570, as appears from Lobel[t]. According to Linnæus it was known in Europe from 1560. Hernandez de Toledo is ſaid to have ſent it into Spain and Portugal, when Nicot being reſident in the latter from the moſt Chriſtian King Francis II. ſent it to Catherine de Medicis, as a plant of the new world, poſſeſſing extraordinary virtues. Geſner, in his Epiſtolæ medicinales, fol. 79. dated nov. 5. 1565, relates ſome trials which he made on it; and adds—"a Gallis Nicotianam vocari audio, nomine "legati cujuſdam qui Galliæ intulerit, ab aliis Pon-"tianam." He had then only learnt from Thevet that it was uſed in America for ſmoking.

Sir William Baker, in his Chronicle, (p. 400, ed. 9. 1696.) affirms that Tobacco was firſt brought into England from the Weſt Indies by Ralph Lane, in the 18th year of Queen Elizabeth, 1586. But this account muſt be underſtood of ſmoking the herb, or elſe it is inconſiſtent with the cultivation of it in 1570, as related by Lobel.

Hakluyt, in his Remembrances made in the year 1582, ſays, that "the ſeed of Tobacco hath been "brought hither out of the Weſt Indies, that it grow-"eth here, and with the herb many have been eaſed "of the rewmes, &c."

Tobacco it is well known is of a narcotic quality, which it generally diſcovers, even in ſmall quantity, when firſt applied. Even a ſmall quantity, ſnuffed up the noſe, will ſometimes produce giddineſs, ſtupor and vomiting; and when applied in different ways, in larger quantity, there are many inſtances of its more violent effects, even of its proving a mortal poiſon. In all theſe inſtances it operates in the manner of other narcotics: but along with its narcotic qualities it poſſeſſes alſo a ſtrongly ſtimulant power, perhaps with reſpect to the whole ſyſtem, but eſpecially with reſpect to the ſtomach and inteſtines, ſo as readily, even in no great doſes, to prove emetic and purgative.

The practices of taking Tobacco in ſnuff, by ſmoking and chewing, have now been common in Europe above two hundred years. Like other narcotics, the uſe of it may be introduced by degrees, ſo that its peculiar effects, even from large quantities, may ſcarcely appear: it has however its limits, ſo that in perſons who have been long in the habit of taking it, going only a little beyond the doſe to which they have been accuſtomed, very violent effects are ſometimes produced.

The effects of the different modes of thus uſing Tobacco depend chiefly upon its narcotic power, and certain circumſtances accidentally attending its application to the noſe and mouth. But on account of its ſtimulating quality, it is ſometimes employed, chiefly by the vulgar, to excite vomiting, but more commonly as a purgative in glyſters, or by throwing the ſmoke up the anus.

Externally an infuſion of Tobacco leaves has been uſed with advantage as a lotion for obſtinate ulcers; but many inſtances of its having been abſorbed and proving a violent poiſon, diſſuade from ſuch a practice, eſpecially as there are other medicines of as much efficacy, that may be employed with much more ſafety. Bergius recommends it for a fomentation in the paralyſmoſis. The ſmoke has been ſucceſsfully uſed in the way of injection, for obſtructions and inveterate conſtipations of the belly, ever ſince the time of Sydenham, and is alſo recommended in caſes of ſuſpended animation.

Reſpecting its poiſonous effects, in Ephem. nat. cur. (*dec. 2. ann.* 10. *obſ.* 131. *p.* 222.) we are told, that by the immoderate uſe of ſnuff, ſomnolency, and at length fatal apoplexy, was induced. Hellwig gives two inſtances of the ſame kind, occaſioned by ſmoking ſeventeen or eighteen pipes of Tobacco. Its effects by abſorption from external uſe may be ſeen in the ſame Ephemerides (*ann. 4. p. 46. & ann. 2. obſ. 108. p. 262.*) and in Alſton's Materia Medica. The oil of Tobacco applied to a wound, is ſaid by Redi to be as fatal as the poiſon of a viper. Albinus however did not find that this was the caſe with the animals on which he tried the experiment. This oil, given to pigeons, produced fatal effects, and was conſtantly attended with vomiting[u].]

3. The ſtalks of this ſeldom riſe more than three feet high. Leaves ſmooth, alternate, upon ſhort foot-ſtalks. Flowers in ſmall looſe bunches on the top of the ſtalks, of an herbaceous yellow colour, appearing in july, and ſucceeded by roundiſh capſules, ripening in the autumn.

This is commonly called Engliſh Tobacco from its having been the firſt introduced here, and being much more hardy than the other ſorts, inſomuch that it has become a weed in many places. It came however originally from America by the name of Petum.

[Sir Walter Raleigh, on his return from America, is ſaid to have firſt introduced the ſmoking of Tobacco into England. *In the houſe* wherein he lived at Iſlington, is his arms, with a Tobacco plant on the top of the ſhield[x]. Parkinſon ſays, that although this kind of Tobacco be not thought ſo ſtrong or ſweet for ſuch as take it by the pipe, yet he had known Sir Walter Raleigh, when he was priſoner in the Tower, make choice of this ſort, to make good Tobacco of, which he knew ſo rightly to cure, as they call it, that it was held almoſt as good as that which came from the Indies, and fully as good as any other made in England[y]. It was cultivated in 1731, by Mr. Miller[z].]

β. N. rugoſa of Miller riſes with a ſtrong ſtalk near four feet high; the leaves are ſhaped like thoſe of the preceding, but are greatly furrowed on their ſurface, and near twice the ſize, of a darker green, and on longer foot-ſtalks. The flowers are of the ſame ſhape, but larger.

[It is remarkable that *Tobacco* has prevailed over the original name *Petum* in all the European languages, with very little variation, and even in Tartary, Japan, &c.—Tobacco is derived from the iſland Tobago. Petume is the Braſilian name.—N. ruſtica is in German, *der Turkiſche Tobak, Baurentabak, Engliſcher,*

[a] Gartner. [t] Hort. kew.

[u] Cullen, Woodville, Fontana in phil. trand. vol. 70.
[x] Gent. mag. jan. 1791. *p.* 17. [y] Treat. 712.
[z] Hort. kew.

wilder

wilder or *kleiner Tabak*. In French, *la Nicotiane à feuille ronde & oblongue, petite Nicotiane, Tabac femelle, Faux Tabac, Tabac du Mexique*. In Spanish *Tabaco cimarron*. In Portuguese, *Velembe bastarde*.]

4. The ſtalk of the panicled Tobacco riſes more than three feet high, dividing upwards into many ſmaller panicled branches, which are round and a little hairy. Leaves about four inches long, and three broad, upon pretty long foot-ſtalks. Flowers in looſe panicles at the ends of the branches: tube about an inch long and club-ſhaped; brim ſlightly cut into nine obtuſe reflex ſegments; they are of a yellowiſh green colour, and are ſucceeded by roundiſh capſules.

[Linnæus remarks, that it differs from N. ruſtica in having a more tender, higher, panicled ſtalk; narrower corollas, with a very ſhort blunt border, and a long club-ſhaped tube; and acute calyxes and capſules. Native of Peru. Cultivated in 1739, by Mr. Miller[1]: who ſays that it was found in the valley of Lima by Pere Feuillée, in 1710, and that ſince that the ſeeds were ſent from Peru by the younger Juſſieu to Paris.

[5. Fruſtification in racemes directed one way and revolute, with bell-ſhaped corollas, and cordate leaves like thoſe of N. ruſtica, but crenate, and the whole tree prickly.—Native of South America[2].]

6. Stalk round, near four feet high, ſending out two or three branches from the lower part. Leaves large, heart-ſhaped and a little waved, very clammy, ſtanding upon long foot-ſtalks. Flowers in looſe ſpikes at the top of the ſtalk, of a dull purple colour: calyx unequally cut, one of the ſegments being twice the ſize of the others. The ſeeds were ſent from Peru with the former by the younger Juſſieu. [Cultivated by Mr. Miller in 1739. This and the preceding flower from July to September[3].

According to Linnæus, the leaves are more cordate and glutinous. The flowers in a few long racemes. Corolla almoſt of the following ſpecies, but more unequal and almoſt ringent, gaping at the throat. Stamens bent in towards the upper ſide. One ſegment of the calyx twice as large as the reſt.]

7. This has a pretty thick taper root, which ſtrikes deep in the ground, at the top of it come out ſix or ſeven leaves, ſpreading on the ground, about the ſize of thoſe of the common Primroſe, but of a deeper green. The ſtalk riſes about a foot high, branching into three or four diviſions, at each of which is placed one ſmall leaf. The branches are terminated by a looſe ſpike of flowers, which are ſmall, and of a yellowiſh green colour. This ſort was diſcovered by Dr. Houſtoun at La Vera Cruz, and he ſent the ſeeds to England.

PROPAGATION AND CULTURE.

All the ſorts except ruſtica (*n.* 3.) and paniculata (*n.* 4.) require the ſame culture, and are too tender to grow from ſeeds ſown in the full ground to any degree of perfection in this country, but muſt be raiſed on a hot-bed.

The ſeeds muſt be ſown upon a moderate hot-bed in march, and when the plants are come up fit to remove, they ſhould be tranſplanted into a new hot-bed of a moderate warmth, about four inches aſunder each way, obſerving to water and ſhade them until they have taken root; after which let them have air in proportion to the warmth of the ſeaſon, otherwiſe they will draw up very weak, and be thereby leſs capable of enduring the open air: water them frequently, but while they are very young, it ſhould not be given to them in too great quantities; though when they are pretty ſtrong, they will require to have it often, and in plenty.

In this bed the plants ſhould remain until the middle of may, by which time, if they have ſucceeded well, they will touch each other, therefore they ſhould be inured to bear the open air gradually; after which they muſt be taken up carefully, preſerving a large ball of earth to each root, and planted into a rich light ſoil, in rows four feet aſunder, and the plants three feet diſtance in the rows, obſerving to water them until they have taken root; after which they will require no farther care (but only to keep them clean from weeds) until the plants begin to ſhew their flower-ſtems; at which time cut off the tops of them, that their leaves may be the better nouriſhed, whereby they will be rendered larger, and of a thicker ſubſtance. In auguſt they will be full grown, when they ſhould be cut for uſe; for if they are permitted to ſtand longer, their under leaves will begin to decay. This is to be underſtood for ſuch plants as are propagated for uſe, but thoſe plants which are deſigned for ornament, ſhould be planted in the borders of the pleaſure-garden, and permitted to grow their full height, where they will continue flowering from july, till the froſt puts a ſtop to them.

The third and fourth ſorts are very hardy and may be propagated by ſowing their ſeeds in march, upon a bed of light earth, whence they may be tranſplanted into any part of the garden, and will thrive without farther care.

The three laſt, being ſomewhat more tender than the others, ſhould be ſown early in the ſpring on a hot-bed; when the plants come up, tranſplant them on another moderate hot-bed, water them duly, and give them a large ſhare of free air in warm weather; when the plants have obtained a good ſhare of ſtrength, tranſplant them into ſeparate pots, and plunge them into a moderate hot-bed, to bring them forward. About the middle of june ſome of the plants may be ſhaken out of the pots, and planted in beds of rich earth; but it will be proper to keep one or two plants in pots, to be placed in the ſtove, in caſe the ſeaſon ſhould prove bad, that they may ripen their ſeeds.

[In America, when a regular plantation of Tobacco is intended; the beds being prepared and well turned up with the hoe, the ſeed, on account of its ſmallneſs, is mixed with aſhes, and ſown upon them, a little before the rainy ſeaſon. The beds are raked, or trampled with the feet, to make the ſeed take the ſooner. The plants appear in two or three weeks. So ſoon as they have acquired four leaves, the ſtrongeſt are drawn up carefully, and planted in the field by a line, at the diſtance of about three feet from each plant. If no rain fall, they ſhould be watered two or three times. Every morning and evening the plants muſt be looked over, in order to deſtroy a worm which ſometimes invades the bud. When they are about four or five inches high they are to be cleaned from weeds and moulded up. As ſoon as they have eight or nine leaves, and are ready to put forth a ſtalk, the top is nipped off, in order to make the leaves longer and thicker. After this the buds which ſprout at the joints of the leaves are all plucked, and not a day is ſuffered to paſs without examining the leaves, to deſtroy a large caterpillar, which is ſometimes very deſtructive to them. When they are fit for cutting, which is known by the brittleneſs of the leaves, they are cut with a knife cloſe to the ground; and after lying ſome time, are carried to the drying ſhed or houſe, where the plants are hung up by pairs, upon lines, leaving a ſpace between, that they may not touch one another. In this ſtate they remain to ſweat and dry. When perfectly dry, the leaves are ſtripped from the ſtalks, and made into ſmall bundles, tied with one of the leaves. Theſe bundles are laid in heaps, and covered with blankets. Care is taken not to overheat them, for which reaſon the heaps are laid open to the air from time to time, and ſpread abroad. This operation is repeated till no more heat is perceived in the heaps, and the Tobacco is then ſtowed in caſks for exportation[4].

In China, where the uſe of Tobacco both in ſnuff and for ſmoking is very general, buildings are not thought neceſſary, as they are in the Weſt Indies for curing it; there being little apprehenſion of rain to injure the leaves when plucked. They are hung on cords to dry, without any ſhelter, upon the ſpot in which they grew. Each owner, with his family, takes care of his own produce. This indicates both the nature of the climate little ſubject to moiſture, and the general diviſion of property into minute parcels[5].

[1] Hort. kew. [2] Linn. ſpec. [3] Hort. kew. [4] Long, jam. 3. 719. [5] Staunton, Amb. to China, 2. 175.

Tobacco is cultivated in open fields in ſeveral parts of the Continent of Europe, and might doubtleſs be grown to advantage in England, if it were not prohibited by act of Parliament. This prohibition, which was made for the encouragement of our American colonies, ſtill continues, though the colonies are loſt. Small attempts at planting Tobacco have been made here from time to time, which promiſed ſucceſs. A plantation in the laſt century being found to thrive, Cromwell, probably at the requiſition of the Americans, is ſaid to have ſent a troop of horſe to trample it down.

NIDUS AVIS. See *Ophrys*.]

NIGELLA. (*q. Nigrella, from the blackneſs of the ſeeds.*)
Lin. gen. n. 685. *Reich. n.* 742. *Schreb. n.* 935. *Tournef. t.* 134. *Juſſ.* 233. *Gærtn. t.* 118.
Claſſ. 13. 5. Polyandria Pentagynia.
Nat. order of *Multiſiliquæ*. *Ranunculaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. none.
COR. *Petals* five, ovate, flat, blunt, ſpreading, more contracted at the baſe.
Nectaries eight, placed in a ring, very ſhort: each two-lipped: *outer lip* larger, lower, bifid, flat, convex, marked with two dots: *inner lip* ſhorter, narrower, from ovate ending in a line.
STAM. *Filaments* numerous, awl-ſhaped, ſhorter than the petals. *Anthers* compreſſed, blunt, erect.
PIST. *Germs* ſeveral (five to ten), oblong, convex, compreſſed, erect, ending in *Styles* which are awl-ſhaped, angular, very long but revolute, permanent. *Stigmas* longitudinal, adnate.
PER. *Capſules* as many, oblong, compreſſed, acuminate, connected on the inſide by the futurr, gaping on the inſide at top.
SEEDS very many, angular, rugged.
OBS. N. orientalis *has ten piſtils, ſtraight, longer than the corolla. Seeds membranaceous-margined.* N. hiſpanica *has alſo ten piſtils, equalling the corolla.*

ESSENTIAL CHARACTER.

Cal. none. *Pet.* five. *Nect.* five (or more) two-lipped, within the corolla. *Capſ.* as many, connected (or ſeparate, beaked, opening inwards, *G.*)

SPECIES.

* *With five ſtyles.*

1. Nigella damaſcena. *Common Fennel-flower.*
Lin. ſpec. 753. *Juſſ.* 306. *Reich. n.* 621. *mant.* 405. *hort. cliff.* 215. 1. *upſ.* 153. *Mill. fig. t.* 187. *f.* 2. *Curt. magaz.* 92. *Gærtn. fruct.* 2. 174. *Blackw. t.* 558. *Knipb. cent.* 10. *n.* 66. *Cranta. auſtr.* 133. *Villars dauph.* 3. 709. *Krock. ſilef. n.* 841. *Allion. pedem. n.* 1509.
α. N. anguſtifolia, flore majore ſimplici cæruleo. *Baub. pin.* 145. *Tournef. inſt.* 258. *Rai hiſt.* 1070.
N. ſylveſtris ſ. damaſcena inodora. *Park. theat.* 1376. 2. — romana ſativa flor. foliolis. *Park. theat.* 1375. 1. *Mor. hiſt. ſ.* 12. *t.* 18. *f.* 7.
Melanthium ſylveſtre. *Matth.* 529. *Lob. ic.* 741.
M. damaſcenum. *Dod. pempt.* 304. *Ger.* 925. 3. *emac.* 1084. 3.
M. capite & flore majore. *Baub. hiſt.* 3. 207.
β. N. flore majore pleno cæruleo. *Baub. pin.* 145. *Rai hiſt.* 1070. *Kwarr. del.* 1. *t.* 8. 21.
N. damaſcena, flore multiplici. *Park. parad.* 287.— multiplex cærulea. *t.* 285. *f.* 10.
N. romana ſativa, flore multiplici foliolo. *Mor. hiſt. ſ.* 12. *t.* 18. *f.* 8.
Melanthium capite & flore majore pleno. *Baub. hiſt.* 3. 208.
Great double Fennel-flower.
Flowers ſurrounded with a leafy involucre.
2. Nigella ſativa. *Small Fennel-flower.*
Lin. ſpec. 753. *Reich.* 2. 621. *hort. upſ.* 154. *mat. med.* 139. *Gærtn. fruct.* 2. 173. *Ludw. elect.* 84. *Knipb. cent.* 7. *n.* 63. *Krock. ſilef. n.* 843.
N. flore minore ſimplici candido. *Baub. pin.* 145. *Mor. hiſt. ſ.* 12. *t.* 18. *f.* 4. *Rai hiſt.* 1071.
N. romana 1. ſativa. *Park. theat.* 1375. 1.
Melanthium. *Dod. pempt.* 303. 1. *Ger.* 924. 1. *emac.* 1084. 1.—ſativum. *Camer. epit.* 551. *Bel. obſ.* 2. *t.* 10. *f.* 2.
M. calice & flore minore, ſemine nigro & luteo. *Baub. hiſt.*
β. N. flore minore pleno & albo. *Baub. pin.* 145. *Rai hiſt.* 1071. *Mor. hiſt. ſ.* 5.
N. flore albo multiplici. *Ger.* 925. 4. *emac.* 1085. 5.
N. citrina flore albo multiplici. *Park. parad.* 287. 3.
Melanthium capite minore, flore multiplicato. *Baub. hiſt.* 3. 208.
Piſtils five, capſules muricated roundiſh, leaves ſometimes hairy.
3. Nigella arvenſis. *Field Fennel-flower.*
Lin. ſpec. 753. *Reich.* 2. 621. *hort. cliff.* 215. 3. *Holl. helv. n.* 1194. *Scop. carn. n.* 657. *Pollich pal. n.* 514. *Krock. ſilef. n.* 842. *Villars dauph.* 3. 709. *Allion. pedem. n.* 1510. *Crantz. auſtr.* 132. *n.* 1. *Park. theat.* 1376. *n.* 3.
N. arvenſis cornuta. *Baub. pin.* 145. *Mor. hiſt. ſ.* 12. *t.* 18. *f.* 1. *Tournef. inſt.* 258.
Melanthium ſilveſtre. *Dod. pempt.* 303. *Ger.* 924. 2. *emac.* 1084. 2.—alterum. *Camer. epit.* 553. *Matth.* 797.—ſylv. ſ. arvenſe. *Baub. hiſt.* 3. 209. *f.* 2.
Piſtils five, petals entire, capſules turbinate.

* *With ten ſtyles.*

4. Nigella hiſpanica. *Spaniſh Fennel-flower.*
Lin. ſpec. 753. *Reich.* 2. 622. *hort. upſ.* 154. *Suuv. monſp.* 253.
N. latifolia, flore majore ſimplici cæruleo. *Baub. pin.* 145. *prodr.* 75.
N. hiſpanica flore ampl. *Ger. emac.* 1085. 6. *Rai hiſt.* 1071. *Mor. hiſt. ſ.* 12. *t.* 18. *f.* 9.—flore ſimplici. *Park. parad.* 287.
Piſtils ten equalling the corolla.
5. Nigella orientalis. *Yellow Fennel-flower.*
Lin. ſpec. 753. *Reich.* 2. 622. *hort. cliff.* 215. 2. *upſ.* 153. *Gærtn. fruct.* 2. 174. *Mill. fig.* 187. *f.* 1.
N. chalcedenſis lutea, corniculis longioribus. *Mor. hiſt.* 3. 516. *ſ.* 12. *t.* 18. *f.* 10. *Rai ſuppl.* 525.
Piſtils ten longer than the corolla.

DESCRIPTION, *&c.*

[Theſe are annual herbaceous plants, with pinnate or bipinnate leaves, and linear leaflets. Flowers terminating, in ſome ſpecies ſurrounded with a five-leaved calyx-like multifid involucre.]

1. This riſes with an upright branching ſtalk a foot and half high. Leaves much longer and finer than thoſe of arvenſis (n. 3.) Flowers large, pale blue, with a five-leaved involucre under each, longer than the flower. They are ſucceeded by larger ſwelling ſeed-veſſels, with five horns at the top. There is a variety with ſingle white flowers, and another with double flowers, which is frequently ſown in gardens, with other annuals for ornament.

[Gærtner deſcribes the capſule as ſimple, ſubglobular, ſubform-five-beaked, five-celled, inflated; that is, the cells being vertically, by means of a very thin, tranſparent, white membrane, divided into a larger empty chamber, and an inner ſmaller one with ſeeds in it. Seeds in each cell about twenty-four, ovate-acuminate, marked with a rib on one ſide, wrinkled, raiſed-dotted, black. Albumen fleſhy, thick, pale-water-coloured. Embryo yellowiſh. Cotyledons ſubfoliaceous. Radicle roundiſh, centripetal.

Native of the South of Europe, among corn. It was cultivated here in 1570, as appears from Lobel. It flowers from june to ſeptember*.

From the fine-cut leaves about the flower it has the names of Fennel-flower, Devil-in-a-buſh, and Love-in-a-miſt. Fennel-flower is become obſolete. Gerarde calls it Damaſke Nigella, from Melanthium damaſcenum of Dodoneus.]

2. This riſes to the ſame height as the preceding. The leaves are not ſo finely cut, and are a little hairy. At the top of each ſtalk is one flower, compoſed of five white petals, which are ſlightly cut at their end into three points; theſe are ſucceeded by oblong ſwelling

* Hort. kew.

seed-veſſels with five horns at the top, filled with ſmall pale-coloured ſeeds. [Gærtner deſcribes the capſule as ſimple, ovate, roundly five-cornered, five-beaked with the permanent filiform ſtyles, rugged with ſcattered callous dots, five-celled, opening at the top inwards. Seeds ovate, acuminate towards the navel, variouſly angular with ſmooth ſharp ribs and wrinkled between them, bay or brown, in a double longitudinal row faſtened to the angle or central margin of the partitions.

Krocker compares it with arvenſis, which it reſembles in ſome degree. The leaves are wider, ſomewhat hairy, green: the ſtem more branched, from a foot to two feet in length, and round: the petals white and ſmaller: the capſules longer, more ſlender at top: more bellying below: the ſeeds aromatic, more acrid, dark-coloured, having a pleaſant ſmell, three-ſided oblong, blunter at one end.

Formerly theſe ſeeds were much in uſe as carminative, ſtimulant and errhine; but this medicine is become deſervedly obſolete. They are ſtill uſed in ſome parts of Germany and Aſia in cookery, inſtead of ſpice, being a pleaſant aromatic [a].

Native of Candia and Egypt. Cultivated in 1658, in the botanic garden at Oxford. It flowers from june to ſeptember [b].

It varies with double flowers. Mr. Miller has two other ſpecies.] N. cretica (n. 4.), riſing with a branching ſtalk a foot high, with ſhorter and broader leaves. At the top of each branch is one flower, without any involucre. Petals oval. Piſtils longer than the petals. Capſule not much ſwollen, and having five ſlender horns at the top. Seeds light yellowiſh brown.—Native of Candia.

N. latifolia riſes with a branching ſtalk a foot high, with leaves like thoſe of Larkſpur. Petals large, oval, entire. It has ten piſtils ſhorter than the petals, and a great number of green ſtamens with blue anthers. The ſeed-veſſels are like thoſe of the preceding. This alſo is a native of Candia.

[This having ten piſtils may poſſibly be a variety of N. hiſpanica.

Gerarde ſays that N. ſativa is called in Engliſh *Gith* and *Nigella romana*; in Cambridgeſhire, *Biſhop's-wort*, and alſo *Saint Katherine's flower*.]

3. This riſes with ſlender ſtalks near a foot high, either ſingle or branching out at the bottom, and having a few very fine-cut leaves, ſomewhat like thoſe of Dill. Each branch is terminated by one ſtar-pointed flower, of a pale blue colour, without any leafy involucre. They are ſucceeded by capſules, having five ſhort horns, inclining different ways at the top, and are filled with rough black ſeeds. There is a variety with white flowers; and another with double flowers.

[In this the capſule is narrower below, contrary to what it is in the preceding. The germs and ſtyles vary in number from five to ſeven. The ſeeds are ſometimes uſed inſtead of thoſe of N. ſativa; but they are not ſo aromatic, nor have they the ſame pleaſant ſmell [c].

Native of Germany, France, Italy, Carniola, Switzerland. Cultivated here in 1713. It flowers from june to ſeptember [d].]

4. This riſes near a foot and half high. The lower leaves are finely cut; but thoſe on the ſtalks are cut into broader ſegments. The flowers are larger than thoſe of the other ſpecies, and of a fine blue colour, with green veins at the back. Nectaries of a ſea-green colour. The piſtils are of equal length with the petals: they with the ſtamens are of a deep purple or puce colour. The capſule has five horns, and is of a firmer texture than any of the other. It grows naturally in Spain and the South of France: and there is a variety of it with double flowers.

[It appears from Parkinſon, that it was cultivated here in 1629. It flowers from june to ſeptember [e].]

5. This riſes with a branching ſtalk a foot and half high; with pretty long leaves, finely divided. The flowers are produced at the end of the branches: the petals are yelloviſh; at the baſe of theſe are placed eight nectaries, between which ariſe a great number of ſtamens, with an unequal number of germs, from five to eight or nine, oblong and compreſſed. The capſules are joined together on their inner ſide, terminate in horns, open longitudinally, and contain many thin compreſſed ſeeds, having borders round them.—Mr. Miller has figured only five.

[Gærtner thus deſcribes them: Capſules compound of eight or ten leguminous partial capſules, connected below above the middle, free or diſtinct above, and moderately diverging, wrinkled and angular on one ſide, compreſſed and ſmooth on the other, ending in a compreſſed beak, and opening at the inner future. Seeds rounded, compreſſed, brown, ſurrounded by a wide membranaceous rim. Albumen much narrower than the margin, fleſhy, pale, inodorous. Embryo ſubcompreſſed, linear, milky. Cotyledons ſhort. Radicle relatively centripetal.

Native of Syria, as in corn fields about Aleppo. Cultivated in 1731, by Mr. Miller. It flowers from july to ſeptember [f].]

PROPAGATION AND CULTURE.

All theſe plants may be propagated by ſowing their ſeeds upon a bed of light earth, where they are to remain (for they ſeldom ſucceed well if tranſplanted;) therefore, in order to have them intermixed amongſt other annual flowers in the borders of the flower-garden, the ſeeds ſhould be ſown in patches at proper diſtances; and when the plants come up, you muſt pull up thoſe which grow too cloſe, leaving but three or four of them in each patch, obſerving alſo to keep them clear from weeds, which is all the culture they require. In july they will produce their flowers, and their ſeeds will ripen in auguſt, when they ſhould be gathered and dried; then rub out each ſort ſeparately, and preſerve them in a dry place.

The ſeaſon for ſowing theſe ſeeds is in march, but if you ſow ſome of them in auguſt, ſoon after they are ripe, upon a dry ſoil and in a warm ſituation, they will abide through the winter, and flower ſtrong the ſucceeding year; by ſowing the ſeeds at different times, they may be continued in beauty moſt part of the ſummer.

They are all annual plants, periſhing ſoon after they have perfected their ſeeds; which, if permitted to ſcatter upon the borders, will come up without any farther care.

The varieties with double flowers are chiefly ſown in flower gardens: thoſe with ſingle flowers are rarely admitted into any but botanic gardens. The third ſort, having leſs beauty than the others, is alſo ſeldom found in flower-gardens. The firſt and fourth are moſt commonly cultivated with us.

NIGELLA and NIGELLASTRUM. See *Garidella*.

NIGHTSHADE. See *Solanum*.

————, Deadly. See *Atropa*.

————, Enchanter's. See *Circæa*.

————, Malabar. See *Baſella*.

[NIGRINA. See *Coloranthus* and *Gerardia*.

NIL. See *Convolvulus* and *Indigofera*.

NIN-ANGANI. See *Gomphrena*.

NINSI. See *Panax*.

NIOTA-NIODEM-VALLI. See *Ceropegia*.

NIPA. (*The Malay name.*)

Rumph. Thunb. nov. gen. 90. *Lin. gen. Schreb.* n. 1698. *Juſſ.* 38.

Claſſ. 25. Appendix Palmæ. (Monoecia Monadelphia.)

Nat. order of *Palmæ* or *Palms*.

GENERIC CHARACTER.

* *Male* flowers lateral, below the females on ſame plant.

CAL. *Spathes* oblong, concave, acuminate, coriaceous: outer larger, inner gradually incloſing. *Perianth* proper none.

COR. *Petals* ſix, linear, equal, from ſpreading reflex.

[a] Krocker and Allioni. [b] Hort. kew. [c] Linn. Krock. Pollich. [d] Hort. kew. [e] Idem. [f] Hort. kew.

STAM. *Filament* one, filiform, erect, the length of the petals. *Anther* at the top of the filament perforated, twelve-grooved, oblong.

* *Females* terminating.

CAL. *Spathes* as in the Male.

COR. none.

PIST. *Germ* angular (often five-angled), obliquely truncate, ſmooth. *Style* and *Stigma* none; but in their ſtead a groove on each ſide.

PER. *Drupes* very many aggregate in a head, the ſize of the human head, angular; angles unequal, acute or blunt, attenuated below, blunted above and ſmooth.

ESSENTIAL CHARACTER.

MALE. *Spathe. Cor.* ſix-petalled.

FEM. *Spathe. Cor.* none. *Drupes* angular.

SPECIES.

1. Nipa fruticans.

Lin. ſyſt. 839. *Thunb. in act. ſtockh.* 1782. *p.* 231. *Rumph. amb.* 1. 72. *t.* 16.

DESCRIPTION, *&c.*

Trunk in the young palm none, but of ſome feet in height in an adult ſtate. Leaves pinnate: pinnas ſtriated, margined, acuminate, ſmooth. Flowers male and female on the ſame palm; but diſtinct on different peduncules. Males ſeveral, lateral, inferior, on dichotomous peduncules, in ſpikes. Females terminating, aggregate in a globular head, ſeſſile. Peduncles and pedicels panicled, dichotomous.—Native of Java and other iſlands in the Eaſt Indies; where the leaves are uſed for covering houſes and making mats. The fruit is eaten both raw and preſerved [b].

NIPPLEWORT. See *Lapſana.*

NIR-CARAMBU. See *Juſſiena.*

NIR-NOTSUT. See *Volkameria.*

NIR-PULLI. See *Indigofera* and *Tradeſcantia.*

NIRURI. See *Phyllanthus.*

NISSOLIA. (*So named by Jacquin, in honour of Guill. Niſſole, M. D. of Montpellier, who deſcribed plants in Mem. Par.* 1711, *&c. the plant ſo named by Tournefort, having proved to be a ſpecies of Lathyrus.*)

Lin. gen. n. 853. *Reich. n.* 923. *Schreb. n.* 1157. *Gærtn. t.* 145. *Juſſ.* 364.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, five-toothed: with the upper teeth deeper.

COR. papilionaceous.

Banner roundiſh, ſubemarginate, reflex, with the ſides reflex.

Wings oblong, blunt, erect, broader at top, ſpreading in front.

Keel cloſed, of the ſame form with the wings.

STAM. *Filaments* ten, united into a cylinder, cloven above. *Anthers* roundiſh.

PIST. *Germ* oblong, compreſſed. *Style* awl-ſhaped, aſcending at a right angle. *Stigma* capitate obtuſe.

PER. *Capſule* oblong, round, running out into a ligulate wing.

SEED uſually one, oblong, round, blunt.

ESSENTIAL CHARACTER.

Cal. five-toothed. *Capſ.* one-ſeeded, ending in a ligulate wing.

SPECIES.

1. Niſſolia arborea. *Tree Niſſolia.*

Lin. ſpec. 992. *ſyſt.* 641. *Reich.* 3. 393. *Jacqu. amer.* 199. *t.* 174. *f.* 48. *pict.* 198. *t.* 261. *f.* 60. *Stem arboreous erect.*

2. Niſſolia fruticoſa. *Shrubby Niſſolia.*

Lin. ſpec. 992. *ſyſt.* 641. *Reich.* 3. 393. *Jacqu. amer.* 198. *t.* 179. *f.* 44. *pict.* 97. *t.* 187. *hort.* 2. *t.* 167.

Stem ſhrubby twining.

DESCRIPTIONS, *&c.*

1. This is an inelegant tree, twelve feet high, the branches of which, being often weak and bending, require a ſupport. Leaves deciduous, pinnate or ternate, having two leaflets on a ſide or one only with an odd one, ovate, bluntly acuminate, quite entire, ſhining, thin, the end one largeſt, the inner ones ſmaller, oppoſite or alternate. Spikes compound and denſe, four inches long, terminating and axillary, from each bud before the leaves ſpring forth, and frequently alſo on the older branches. Flowers ſmall, ſeſſile, without ſcent, and almoſt without colour, numerous. Seed only one in the germ.—Native of Carthagena in New Spain every where in the woods, flowering in july and auguſt.

2. This is a thornleſs ſhrub, with numerous twining ſtems and branches climbing the trees to the height of fifteen feet. Leaves numerous, alternate, pinnate, ſubvilloſe, three or four inches long, having two leaflets on each ſide, and an odd one; theſe are ſubovate, quite entire, blunt iſh with a ſmall briſtle-ſhaped point, ſmooth, petioled, an inch and half long. Common peduncles ſhort, many-flowered, numerous, on the younger branchlets axillary, and at the ſame time at their extremities coming out from naked tubercles, making all together a leafy panicle, often a foot long, and handſome. Flowers peduncled, ſmall, yellow, inodorous.—Native of Carthagena in woods and copſices; flowering in ſeptember [a].

Jacquin would not oppoſe any one who ſhould make two diſtinct genera of theſe two ſpecies. Cultivated in 1766, by Robert James Lord Petre [a].]

NISSOLIA. See *Lathyrus.*

[NITI-TODDA-VALLI. See *Mimoſa.*

NITRARIA. (*So named by Schreber, who firſt found it in Siberia, near the nitre works, with other ſalt plants.*)

Lin. gen. n. 602. *Reich. n.* 658. *Schreb. n.* 823. *Act. petrop.* 7. 315. *t.* 10. *Gærtn. t.* 58. *Juſſ.* 316.

Claſſ. 11. 1. Dodecandria Monogynia.

Nat. order of *Ficoideæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-cleft, erect, very ſhort, permanent.

COR. *Petals* five, oblong, ſpreading, channelled, arched at top with an inflex dagger-point.

STAM. *Filaments* fifteen, awl-ſhaped, almoſt erect, the length of the corolla. *Anthers* roundiſh.

PIST. *Germ* ovate, ending in a thickiſh *Style*, longer than the ſtamens. *Stigma* ſimple.

PER. *Drupe* one-celled, ovate-oblong, acuminate.

SEED one, three-celled, ovate, acuminate.

OBS. *The germ, when immature, is three-celled. Nut ſcrobiculate, one-celled, ſix-valved at top. Style very ſhort, trifid.* G.

ESSENTIAL CHARACTER.

Cal. five-cleft. *Cor.* five-petalled, with the petals arched at top. *Stam.* fifteen or more. *Drupe* one-ſeeded.

SPECIES.

1. Nitraria Schoberi. *Thick-leaved Nitraria.*

Lin. ſpec. 638. *ſyſt.* 445. *Reich.* 2. 442. *Gærtn. fruct.* 279. *Act. nov. petrop.* 7. 315. *t.* 10. *Murr. prodr.* 191. *t.* 2. *Pallas it.* 1. *app.* 494. *n.* 110. 2. *p.* 478. *roſſ.* 1. 79. *t.* 50. *Lerche in nov. act. nat. cur. tom.* 5. *app. p.* 162.

Oſyris foliis obtuſis. *Lin. hort. upſ.* 295. *Gmel. ſib.* 237. *t.* 98.

Caſia fructu nigro. *Amm. ruth. n.* 256.

DESCRIPTION, *&c.*

There are two varieties of this ſhrub: one in the ſqualid nitro-ſaline parts of the deſert extending from the north of the Caſpian; ſcarcely beyond the fiftieth degree of latitude; with the ſtems almoſt upright, almoſt unarmed, and larger in all its parts. The other in the ſalt plains of Siberia, between the Irtis and Ob rivers, by the ſalt lakes near the Jeniſea, and in the regions beyond the lake Baikal; proſtrate, thorny, ſmaller and more tender in all its parts.

The firſt, or Caſpian variety, which is what Schober deſcribed, riſes with ſeveral ſtems that are an ell in height, ſuberect or ſupine, from a thick woody root, covered with a whitiſh gray bark, ſpineſcent at the end, as are alſo the branches, and briſtle. Branchlets alternate, chiefly directed one way, whiter, leafed alternately, dichotomous and floriferous at top. Leaves

[b] Thunberg.

[a] Jacquin. [a] Hort. kew.

in alternate buds, up to the flowers, ſeſſile in bundles, four or five together, fleſhy, ſucculent, oblong, attenuated at the baſe, quite entire, glaucous green. In the autumn, and in drying the plant, they very eaſily fall off, leaving a duſky ſpot at the place. They appear to be very ſmooth; but when examined by a glaſs they are found to have very fine proſtrate hairs ſcattered over them. The terminating cymes of the branchlets are dichotomous, naked, hairy, faſtigiate; the extremities bear three or four ſeſſile flowers, pointing the ſame way, and forming a ſort of ſpike. Perianth in the flower ſcarcely viſible, conſiſting of five thick toothlets ſurrounding the receptacle; in the fruit more evident, and ſomewhat bell-ſhaped. Petals white, ſpreading very much, concave, blunt and cowled at the end, with a ſlender toothlet turned towards the centre of the flower. Stamens twelve to fifteen, the length of the corolla: anthers oblong, yellow, bifid at the baſe. Germ conical, terminated by a ſeſſile, awnleſs, tripapillar ſtigma. The young fruit is conical, ſubacuminate with the ſtigma produced, with more frequent proſtrate hairs ſcattered over it than the other parts of the plant. Drupe when ripe conical-convex, ſucculent, dark red, when drier black and dying a dark blue, ſaltiſh, and never to be entirely dried. Nut conical, very ſharp, convex at the baſe, and having about a dozen little holes in it; at the top as it were ſix-valved, but with the valves united into one point, alternately very narrow and linear. Nucleus not three-celled, but ſimple, cylindric, continued to the very tip of the nut, yellow, ſweetiſh, covered with a yellow ſtriated aril. The cymes, when the fruit falls, continue and ſhrivel up, whence the ſhrub becomes in a manner thorny; and ſometimes when the branches of the cyme fall off, a genuine ſpine comes out.

The ſecond or Siberian variety, which Steller and Gmelin chiefly obſerved, from a woody root, frequently exhibits a large knob or tuber, ſometimes as big as the human head, warted and veined; from this twenty and more ſtems ſpread in a ring, they are proſtrate and even preſſed cloſe to the ground, a foot and half in length, with the branches moſt elegantly diſpoſed like a winged leaf. The ſtems are more ſlender than in the preceding, more elongated, ſtraighter, whitiſh gray, with the branches alternate, ſpreading very much, lying on the ground: from theſe branchlets grow upwards, on the older ones commonly ſpineſcent, and only leafy; but the younger branches have generally dichotomous flowering cymes. The leaves are much ſmaller than the Caſpian plant, very like them in form, or more ſucculent and ſalt. Cymes ſmaller, cloſer, and more hairy. Flower in all its parts ſmaller, but the calyx more evident. The incipient fruit as in the other; but the ripe drupe much ſmaller, ſtaining paper of a very dark blue. Nut by no means conical-acuminate, but ovate, and ſubtrigonal, which the Caſpian nut is not; it has however the ſix grooves approximating by pairs, and the little holes, which are ſometimes indeed ſcarcely viſible.

In the fat very ſalt lands by the lake Koræкofſkoi in Siberia, Profeſſor Pallas obſerved ſhrubs of Nitraria that were much ſtouter, with the ſtems almoſt equal to the Caſpian variety; the leaves wider, five from each bud, ſometimes entire, ſometimes variouſly cut. Not having an opportunity of obſerving it in flower, he could not determine what other differences there might be between this and the others.

Murray has given a full length deſcription of this rare ſhrub, but I have preferred the above from Pallas, becauſe it is poſterior to Murray's, and made from wild plants, not diſtorted and changed by culture.

Pallas informs us, that the berries, though ſaltiſh and inſipid, are eaten in the Caſpian deſert, but in that arid ſoil they are almoſt the only luxury. Camels feed on the twigs. The Ruſſians near the Caſpian call this ſhrub *Samoniecka*, and the Turcomans *Siegak*.

Both the varieties deſcribed above ſeem, from Chevalier Murray's account, to have been in the botanic garden at Gottingen; one of them flowered there, and Murray's deſcription was made from that plant. Linnæus had the ſhrub twenty years before it flowered in Sweden; and during ten years having in vain tried to make it flower in the garden at Upſala, he at length ſucceeded by watering the plant with ſalt water; it flowered however at Gottingen without this aſſiſtance. Murray expreſſes a ſurpriſe that it has not been uſed in its native ſoil for making Soda: but perhaps it does not grow in ſufficient quantity, or there may be an ample harveſt in that ſalt region, of plants that anſwer the ſame purpoſe.

NITU-TODDA. See *Mimoſa*.

NOELI-TALI. See *Autideſma*.

NOEL-VALLI. See *Dalbergia*.

NOEM. See *Cynoſurus coracanus*.]

NOLANA. (*So named by Linnæus from* Nola *a little bell, on account of the bell-ſhaped form of the corolla.*)

Lin. gen. n. 193. *Reich. n.* 206. *Schreb. n.* 254. *Gærtn. t.* 132. *Juſſ.* 132.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Aſperifoliæ*, or *Luridæ*. *Borragineæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, turbinate at the baſe, five-parted, five-cornered: *ſegments* cordate, acute, permanent.

COR. one-petalled, bell-ſhaped, plaited, ſpreading, ſomewhat five-lobed, twice as large as the calyx.

STAM. *Filaments* five, awl-ſhaped, erect, equal, ſhorter than the corolla. *Anthers* ſagittate.

PIST. *Germs* five, roundiſh. *Style* among the germs, cylindric, ſtraight, the length of the ſtamens. *Stigma* capitate.

PER. properly none. (*Drupes* five, decumbent, three or five-celled. *G.*)

SEEDS five, with a ſucculent rind, roundiſh, with the inner baſe naked, immerſed in the receptacle, two-celled and four-celled. (Solitary. *G.*)

ESSENTIAL CHARACTER.

Cor. bell-ſhaped. *Style* among the germs. *Seeds* five; berried, two-celled. (*Drupes* five, three or five-celled, with one ſeed in each cell. *G.*)

SPECIES.

1. Nolana proſtrata. *Trailing Nolana.*

Lin. ſpec. 202. *ſyſt.* 191. *Reich.* 1. 407. *mant.* 334. *Lin. fil. dec.* 1. 3. *t.* 2. *Gærtn. fruct.* 2. 242. *Sabb. hort.* 1. *t.* 4.

Atropa fol. geminatis, calycibus polycarpis, caule humiſuſo. *Gouan hort.* 82. *ic. Kniph. orig.* X. *n.* 13.

[Belladonna humiſuſa, flore violaceo, hiſpanica. *Royeni ap. Linn. dec.*

Walkeria. *Ehret. in act. angl.* 1764. *p.* 130. *t.* 10.

Zwingera. *Act. helv.* 5. 267. *t.* 1.

Neudorffia peruviana repens, flore cæruleo. *Adanſ. fam.* 219.

Teganium procumbens. *Schmid. acad.* 67. *t.* 18. *opt.*

DESCRIPTION, *&c.*

Root annual, ſimple, filiform, often three feet long, blackiſh. Stem a foot long, herbaceous, proſtrate, roundiſh, very ſmooth, with white dots ſcattered over it. Branches alternate, the lower ones the length of the ſtalk. Leaves alternate, two together, reflex, rhomb-ovate, quite entire, blunt, ſomewhat fleſhy, an inch long, ſomewhat papuloſe, even, flat, veined, unequal, alternately larger and ſmaller.] Miller remarks, that they come out ſingle at ſome joints, by pairs at others, and frequently three or four at the upper joints. [Petioles ancipital, ſcarcely ſhorter than the leaves, ſmooth, thoſe belonging to the upper leaves vaguely ciliate. Pedúncles lateral, ſolitary, ſpreading a little, an inch long, one-flowered, round, thicker at top, hairy. Flowers inferior. Corolla of a fine blue colour, with dark purple veins at the throat: calyx pale purple: filaments purple; anthers blackiſh-blue; piſtil white, with a black germ: receptacle red. The ſtem and petioles are green with purple ſpots. The leaves are dark green*.

Linnæus and others conſider this plant as having no pericarp, but five ſeeds covered with a juicy rind. Gærtner deſcribes them as drupes, decumbent in the baſin of the calyx, ſmall, fleſhy, ovate-acuminate, black, convex above, ſomewhat angular below, and

* Linn. dec.

punched

punched with umbilical pores. Rind thin, fleshy, dark-purple. Shell bony, excavated with three or five very polished cells, not opening. According to Linnæus they have from two to four cells: but Gærtner remarks, that the number of cells varies, three or four however being the most frequent number, and that he never saw six, except in Schmidel's figure.—Common receptacle in the fleshy bottom of the calyx, to which the drupes radiating from the centre and lying horizontally are fastened: proper none, except the little umbilical scars at the base of the drupe. Seeds solitary, rounded, beaked, lenticular-compressed, very minutely dotted, white[t].

Linnæus placed it among the *Asperifoliæ*, observing however that it has no less affinity to the *Luridæ*. Jussieu remarks, that it has the appearance of Convolvulus; the leaves alternate, and as in the *Solaneæ* geminate; with the flowers extraaxillary; and that it is allied to the *Borragineæ* by its five-capsuled fruit, but that in habit and flower it more resembles the *Solaneæ* and *Convolvuli*. Gærtner is decidedly of opinion that Nolana should range in the order of *Solanaceæ*.

The seeds of Nolana were sent to Linnæus by David van Royen, professor of Botany at Leyden, in the spring of the year 1761, under the name of Belladonna. Its native country was not known; but was conjectured to be Spain. It proves however to be Peru. Mr. Miller cultivated it in 1761[s]. He says that he received the seeds from Mr. Forskahl, one of the persons who were sent by the late King of Denmark, to make discoveries in the east; and thence concludes erroneously that it grows naturally in Egypt. It flowers in july, and the seeds ripen in september.

PROPAGATION AND CULTURE.

Sow the seeds on a hot-bed in march. When the plants are fit to remove, transplant them singly into small pots filled with light earth, and plunge them into a fresh hot-bed to bring the plants forward, otherwise they will not ripen their seeds in this country. When their flowers open in july, they should have a large share of air admitted to them, when the weather is warm, to prevent their flowers from falling away without producing seeds. With this management the plants will continue flowering till the early frosts destroy them, and ripe seeds will be produced in the beginning of september.

[NOLENGU. See *Impatiens*.]

NOLI TANGERE. See *Impatiens*.

[NONATELIA. See *Oribasia* and *Pychotria*.

NONE-SO-PRETTY. See *Saxifraga*.]

NONESUCH. See *Lychnis* [and *Trifolium*.

NORANTEA. See *Ascium*.

NOSE-BLEED. See *Achillea*.

NOSTOC. See *Tremella*.

NOTHRIA. See *Frankenia*.

NOVELLA. See *Cordia* and *Hibiscus*.

NUCI Metellæ congener. See *Datura*.

NUCIPERSICA. See *Amygdalus*.

NUCIPRUNIFERA. See *Sapindus*.

NUCULA. See *Bunium*.

NUGA and NUGÆ. See *Guilandina*.]

NUMMULARIA. See [*Anagallis*] *Linnæa* and *Lysimachia*.

[NURENI-KELENGU. See *Dioscorea*.

NUR-PONGELION. See *Bignonia*.]

NURSERY, or Nursery-garden, is a piece of land set apart for the raising and propagating all sorts of trees and plants to supply the gardens and plantations. Of this sort there are a great number in the different parts of this kingdom, but particularly in the neighbourhood of London, which are occupied by the gardeners, whose business it is to raise trees, plants, and flowers for sale; and in many of these there is at present a much greater variety of trees and plants cultivated, than can be found in any other part of Europe. In France, their Nurseries, (which are but few, when compared with those in England) are chiefly confined to the propagation of fruit-trees, whence they have the appellation of Pepinier. For there is scarce any of those gardens, where a person can be supplied with evergreens, flowering-shrubs, or forest-trees: and in Holland their Nurseries are principally for flowers; some few of them, indeed, propagate tender exotic plants. But Nurseries in the neighbourhood of London include all these, and hence most of the curious persons abroad are supplied with furniture for their gardens. But I do not propose in this place, to treat of these extensive Nurseries, or to give a description of them, therefore shall confine myself to treat of such Nurseries only as are absolutely necessary for all lovers of planting, to have upon the spot where they design to make their plantation. For if these are large, the expense of carrying a great number of trees, if the distance is great, will be no small article, beside the hazard of their growing; which, when the plants have been trained up in good land, and removed to an indifferent one, is very great. Therefore it is of the utmost consequence to every planter to begin by making a Nursery. But in this article I must beg leave to observe, that a Nursery should not be fixed to any particular spot: I mean by this, that it would be wrong to continue the raising of trees any number of years upon the same spot of ground, because hereby the ground will be so much exhausted by the trees, as to render it unfit for the same purpose. Therefore all good Nursery gardeners shift and change their land from time to time, for when they have drawn off the trees from a spot of ground, they plant kitchen herbs, or other things, upon the ground for a year or two; by which time, as also by dunging and trenching the land, it is recovered, and made fit to receive other trees. But this they are obliged to from necessity, being confined to the same land; which is not the case with those gentlemen, who have large extent of ground in the country. Therefore I would advise all such persons to make Nurseries upon the ground which is intended for planting, where a sufficient number of the trees may be left standing, after the others have been drawn out to plant in other places; which, for all large growing trees, but particularly such as are cultivated for timber, will be found by much the most advantageous method; for all those trees which come up from the seed, or which are transplanted very young into the places where they are designed to remain, will make a much greater progress, and become larger trees, than any of those which are transplanted at a greater age. Therefore the Nurseries should be thinned early, by removing all those trees which are intended for other plantations while they are young, because hereby the expense and trouble of staking, watering, &c. will be saved, and the trees will succeed much better. But in exposed situations, where these are Nurseries made, it will be necessary to permit the trees to stand much longer; that, by growing close together, they may shelter each other, and draw themselves up; and these should be thinned gradually, as the trees advance; for, by taking away too many at first, the cold will check the growth of the remaining trees. But then those trees which are taken out from these Nurseries, after a certain age, should not be depended on for planting; and it will be prudence rather to consign them for fuel, than to attempt to remove them large, whereby, in endeavouring to get them up with good roots, the roots of the standing trees will be often much injured.

What has been here proposed, must be understood for all large plantations in parks, woods, &c. but those Nurseries which are only intended for raising evergreens, flowering shrubs, or plants which are designed to embellish gardens, may be confined to one spot, because a small compass of ground will be sufficient for this purpose. Two or three acres of land employed this way, will be sufficient for the most extensive designs, and one acre will be full enough for those of moderate extent. And such a spot of ground may be always employed for sowing the seeds of foreign trees and plants, as also for raising many sorts of biennial and perennial flowers, to transplant into the borders of the pleasure garden, and for raising many kinds of bulbous-rooted flowers from seeds, whereby a variety of new sorts may be obtained annually, which will recompense for the trouble and expense,

[t] Gærtner. [s] Hort. kew.

penſe, and will moreover be an agreeable diverſion to all thoſe perſons who delight in the amuſements of gardening.

Such a Nurſery as this ſhould be conveniently ſituated for water; for where that is wanting, there muſt be an expenſe attending the carriage of water in dry weather. It ſhould alſo be as near the houſe as it can with conveniency be admitted, in order to render it eaſy to viſit at all times of the year, becauſe it is abſolutely neceſſary that it ſhould be under the inſpection of the maſter, for unleſs he delights in it, there will be little hopes of ſucceſs. The ſoil of this Nurſery ſhould alſo be good, and not too heavy and ſtiff, for ſuch land will be very improper for ſowing moſt ſorts of ſeeds; becauſe as this will detain the moiſture in the ſpring and winter, the ſeeds of moſt tender things, eſpecially of flowers, will rot in the ground, if ſown early; therefore where perſons are confined to ſuch land, there ſhould be a good quantity of ſand, aſhes, and other light manures buried, in order to ſeparate the parts, and pulverize the ground; and if it is thrown up in ridges, to receive the froſt in winter, it will be of great uſe to it, as will alſo the frequent forking, or ſtirring of the ground, both before and after it is planted.

The many advantages which attend the having ſuch a Nurſery, are ſo obvious to every perſon who has turned his thoughts in the leaſt to this ſubject, that it is needleſs for me to mention them here; and therefore I ſhall only beg leave to repeat here what I have ſo frequently recommended, which is, the carefully keeping the ground always clean from weeds; for if theſe are permitted to grow, they will rob the young trees of their nouriſhment. Another principal buſineſs is, to dig the ground between the young plants at leaſt once every year, to looſen it for the roots to ſtrike out; but if the ground is ſtiff, it will be better if it is repeated twice a year, viz. in october and march, which will greatly promote the growth of the plants, and prepare their roots for tranſplanting.

But there may be ſome perſons who have the curioſity to raiſe their own fruit-trees, which is what I would recommend to every one who is a lover of good fruit, becauſe the uncertainty in procuring the intended kinds of each fruit is very great, when taken from common Nurſery-gardens, ſo that moſt gentlemen who have planted many, have conſtantly complained of this diſappointment; but beſides this, there is another inconvenience, which, for want of ſkill, is ſcarce taken notice of, which is, the taking the buds or grafts from young trees in the Nurſeries which have not borne fruit; this having been frequently repeated, renders the trees ſo raiſed as luxuriant as Willows, making ſhoots to the top of the walls in two or three years, and are rarely after fruitful with the moſt ſkilful management: I ſhall therefore treat of the proper method to make a Nurſery of theſe trees.

In the doing which the following rules muſt be obſerved:

1. That the ſoil in which you make the Nurſery be not better than that where the trees are to be planted out for good; the not obſerving this is the reaſon that trees are often at a ſtand, or make but little progreſs for three or four years after they come from the Nurſery, as it commonly happens to ſuch trees as are raiſed near London, and carried into the northern parts of England, where, being planted in a poor ſoil and a much colder ſituation, the trees ſeldom ſucceed well; therefore it is by far the better method (when you have obtained the ſorts you would propagate) to raiſe a Nurſery of the ſeveral ſorts of ſtocks proper for the various kinds of fruit, upon which you may bud or graft them; and thoſe trees which are thus raiſed upon the ſoil, and in the ſame degree of warmth, where they are to be planted, will ſucceed much better than thoſe brought from a greater diſtance and from a richer ſoil.

2. This ground ought to be freſh, and not ſuch as has been already worn out by trees, or other large growing plants, for in ſuch ſoil your ſtocks will not make any progreſs.

3. It ought not to be too wet, nor over dry, but rather of a middling nature; though of the two extremes, dry is to be preferred, becauſe in ſuch ſoils (though the trees do not make ſo great a progreſs as in moiſt, yet) they are generally ſounder, and more diſpoſed to fruitfulneſs.

4. You muſt alſo obſerve to incloſe it, that cattle and vermin may not come in, for theſe will make ſad havock with young trees, eſpecially in winter, when the ground is covered with ſnow, that they have little other food which they can come at. Some of the moſt miſchievous of theſe animals are hares and rabbets, which are great deſtroyers of young trees at that ſeaſon, by eating of all their bark; therefore you muſt carefully guard your Nurſery againſt theſe enemies.

The ground being incloſed, ſhould be carefully trenched about eighteen inches, or two feet deep, provided it will allow it; this ſhould be done in auguſt or ſeptember, that it may be ready to receive young ſtocks at the ſeaſon for planting, which is commonly in the middle or end of october. In trenching the ground, you muſt be very careful to cleanſe it from the roots of all noxious weeds, ſuch as Couch-graſs, Docks, &c. which, if left in the ground, will get in among the roots of the trees, ſo as not to be gotten out afterwards, and will ſpread and over-run the ground, to the great prejudice of your young ſtocks.

After having dug the ground, and the ſeaſon being come for planting, you muſt level down the trenches as equal as poſſible, and then lay out the ground into quarters, proportionable to the ſize thereof, and thoſe quarters may be laid out in beds, for the ſowing of ſeeds or the ſtones of fruit.

The beſt ſort of ſtocks for Peaches, Nectarines, &c. are ſuch as are raiſed from the ſtones of the Muſcle and white Pear Plumb, but you ſhould never plant ſuckers of theſe (which is what ſome people practiſe) for theſe ſeldom make ſo good ſtocks, nor are ever well-rooted plants; beſides, they are very ſubject to produce great quantities of ſuckers from their roots, which are very troubleſome in the borders, or walks of a garden, and greatly injure the tree; ſo that you ſhould annually, or at leaſt every other year, ſow a few ſtones of each, that you may never be at a loſs for ſtocks.

For Pears, you ſhould have ſuch ſtocks as have been raiſed from the kernels of the fruit where perry has been made, or elſe preſerve the ſeeds of ſome ſorts of ſummer Pears, which generally ſhoot ſtrong and vigorous, as the Cuiſſe Madame, Windſor, &c. but when this is intended, the fruit ſhould be ſuffered to hang upon the trees till they drop, and afterward permitted to rot; then take out the kernels and put them in ſand, being careful to keep them from vermin, as alſo to place them where they may not be too damp, which will cauſe them to grow mouldy. Theſe you ſhould ſow for ſtocks early in the ſpring, upon a bed of good light freſh earth, where they will come up in about ſix weeks, and, if kept clear from weeds, will be ſtrong enough to tranſplant the october following. But for many ſorts of ſummer and autumn Pears, Quince ſtocks are preferable to free (i. e. Pear) ſtocks; theſe are generally uſed for all the ſorts of ſoft-melting Pears, but they are not ſo good for the breaking Pears, being apt to render thoſe fruits which are grafted upon them ſtony; theſe are very often propagated from ſuckers, which are generally produced in plenty from the roots of old trees; but thoſe are not near ſo good as ſuch as are propagated from cuttings or layers, which have always much better roots, and are not ſo ſubject to produce ſuckers as the other, which is a very deſirable quality, ſince theſe ſuckers do not only rob the trees of part of their nouriſhment, but are very troubleſome in a garden.

Apples are graſted or budded upon ſtocks raiſed from ſeeds which come from the cyder-preſs, or upon Crab ſtocks, the latter of which are eſteemed for their durableneſs, eſpecially for large ſtandard trees; theſe ſhould be raiſed from ſeeds, as the Pear ſtock, and muſt be treated in the ſame manner, for thoſe procured

cured from ſuckers, &c. are not near ſo good; but for ſmall gardens, the Paradiſe ſtock has been for ſome years paſt greatly eſteemed, it being of very humble growth, cauſes the fruit-trees grafted or budded thereon to bear very ſoon, and they may be kept in ſmall compaſs; but theſe are only proper for very ſmall gardens, or by way of curioſity, ſince the trees thus raiſed are but of ſhort duration, and ſeldom ariſe to any ſize to produce fruit in quantities, unleſs the graft or bud be buried in planting, ſo that they put forth roots, and then they will be equal to trees grafted upon free ſtocks, ſince they receive but ſmall advantage from the ſtock.

For Cherries, you ſhould make uſe of ſtocks raiſed from the ſtones of the common Black, or the wild Honey Cherry, both of which are ſtrong free growers, and produce the cleaneſt ſtocks.

For Plums, you may uſe the ſtones of moſt free-growing ſorts, which will alſo do very well for Apricots, theſe being not ſo difficult to take as Peaches or Nectarines; but (as I ſaid before) theſe ſhould not be raiſed from ſuckers for the reaſon there aſſigned, but rather from ſtones.

There are ſome perſons who recommend the Almond ſtock for ſeveral ſorts of tender Peaches, upon which they will take much better than upon Plum ſtocks; but theſe being tender in their roots, and apt to ſhoot early in the ſpring, and being of ſhort duration, are by many people rejected; but ſuch tender ſorts of Peaches which will not take upon Plum ſtocks, ſhould be budded upon Apricots, upon which they will take very well; and all ſorts of Peaches which are planted upon dry ſoils, will continue much longer, and not be ſo ſubject to blight, if they are upon Apricots; for it is obſerved, that upon ſuch ſoils where Peaches ſeldom do well, Apricots will thrive exceedingly, which may be owing to the ſtrength and compactneſs of the veſſels in the Apricots, which render it more capable of aſſimilating, or drawing its nouriſhment from the Plum ſtock, which in dry ſoils ſeldom afford it in great plenty to the bud; and the Peach-tree being of a looſe ſpongy nature, is not ſo capable to draw its nouriſhment therefrom, which occaſions that weakneſs which is commonly obſerved in thoſe trees, when planted on a dry ſoil; therefore it is the common practice of the Nurſery-gardeners, to bud the Plum ſtocks either with Apricots, or ſome free growing Peach; and after theſe have grown a year, they bud the tender ſorts of Peaches upon theſe ſhoots, by which method many ſorts ſucceed well, which in the common way will not thrive, or ſcarce keep alive; and theſe the gardeners term double worked Peaches.

There are ſome people who of late have budded and grafted Cherries upon ſtocks of the Cornith, and others on the Morello Cherry, which, they ſay, will render the trees more fruitful, and leſs luxuriant in growth, ſo that they may be kept in leſs compaſs; theſe ſtocks having the ſame effect upon Cherries, as the Paradiſe ſtock has on Apples.

Having provided yourſelf with young ſtocks of all theſe different ſorts, which ſhould be raiſed in the ſeminary the preceding year, you ſhould proceed to tranſplanting them in October (as was before directed) into the Nurſery. The diſtance which they ſhould be planted, if deſigned for ſtandards, ſhould be three feet and a half or four feet, row from row, and a foot and a half diſtant in the rows; but if for dwarfs, three feet row from row, and one foot in the rows, will be a ſufficient diſtance.

In taking theſe ſtocks out of the ſeed-beds, you muſt raiſe the ground with a ſpade, in order to preſerve the roots as entire as poſſible; then with your knife prune off all the very ſmall fibres; and if there are any which have a tendency to root downright, ſuch roots ſhould be ſhortened; having thus prepared the plants, draw a line acroſs the ground intended to be planted, and with your ſpade open a trench thereby exactly ſtraight, into which place them at the diſtance before-mentioned, ſetting them exactly upright; and then put the earth in cloſe to them, filling up the trench, and with your foot preſs the earth gently to the roots of them, obſerving not to diſplace them ſo as to make the rows crooked, which will render them unſightly; theſe plants ſhould by no means be headed, or pruned at top, which will weaken them, and cauſe them to produce lateral branches, and thereby ſpoil them.

If the winter ſhould prove very cold, it will be of great ſervice to your young ſtocks, to lay ſome mulch upon the ſurface of the ground near their roots, which will prevent the froſt from penetrating the ground, ſo as to hurt the tender fibres which were produced after planting; but you ſhould be careful not to let it lie too thick near the ſtems of the plants, nor remain too long, leſt the moiſture ſhould be prevented from penetrating to the roots of the plants, which is often does, where there is not due care taken to remove it as ſoon as the froſt is over.

In the ſummer ſeaſon hoe and deſtroy the weeds, which, if permitted to remain in the Nurſery, will greatly weaken and retard the growth of your ſtocks; and, the ſucceeding years, obſerve to dig up the ground every ſpring between the rows, which will looſen it ſo, as that the fibres may eaſily ſtrike out on each ſide, and the weeds will thereby be deſtroyed; alſo where any of the ſtocks have ſhot out lateral branches, prune them off, that they may be encouraged to grow upright and ſmooth.

The ſecond year after planting, ſuch of the ſtocks as are deſigned for dwarf trees will be fit to bud, but thoſe which are deſigned for ſtandards, ſhould be ſuffered to grow ſix or ſeven feet high before they are budded or grafted. The manner of budding and grafting being fully deſcribed under their reſpective heads, I ſhall not repeat them in this place, nor need I ſay any thing more of treating theſe trees after budding, that being alſo treated of under the ſeveral articles of fruits; I ſhall only add, that thoſe ſtocks which were budded in the ſummer, and have failed, may be grafted the following ſpring, but Peaches and Nectarines never take well from grafts, theſe ſhould therefore be always budded.

The ground you intend for the Flower-nurſery ſhould be well ſituated to the ſun, but defended from ſtrong winds, by plantations of trees or buildings, and the ſoil ſhould be light and dry; which muſt always be obſerved, eſpecially for bulbous-rooted flowers, which are deſigned to be planted therein, the particulars of which are exhibited under the ſeveral articles of flowers.

In this Nurſery ſhould be planted the offsets of all your bulbous-rooted flowers, where they are to remain until they become blowing roots, when they ſhould be removed into the pleaſure-garden, and planted either in beds or borders, according to the goodneſs of the flowers, or the management which they require.

You may alſo in this ground raiſe the ſeveral ſorts of bulbous-rooted flowers from ſeed, by which means new varieties may be obtained; but moſt people are diſcouraged from ſetting about this work, from the length of time before the ſeedlings will come to flower: however, after a perſon has once begun, and conſtantly continued ſowing every year, after the parcel firſt ſown has flowered, the regular ſucceſſion of them coming annually to flower, will not render this method ſo tedious as it at firſt appeared.

The ſeedling Auriculas, Polyanthuſes, Ranunculuſes, Anemonies, Carnations, &c. ſhould be raiſed in this Nurſery, where they ſhould be preſerved until they have flowered, when you ſhould mark all ſuch as are worthy of being tranſplanted into the flower-garden, which ſhould be done in their proper ſeaſons; for it is not ſo well to have all theſe ſeedling flowers expoſed to public view in the flower-garden, becauſe it always happens, that there are great numbers of ordinary flowers produced amongſt them, which will make but an indifferent appearance in the pleaſure-garden.

[For a Nurſery, Dr. Hunter recommends a rich deep and ſtiffiſh mould, though the trees ſhould afterwards be removed into a poorer ſoil. Reaſon, ſays he, teaches that young trees growing luxuriantly and freely in a good ſoil will form vigorous and healthy roots,

and when they come to be afterwards planted in worſe land, they will be able, from the ſtrength of their conſtitution, to feed themſelves freely with coarſer food. On the contrary young trees, raiſed upon poor land, by having their veſſels contracted, and their outward bark moſſy and diſeaſed, will be a long time, even after being removed to a rich ſoil, before they attain to a vigorous ſtate. Having fixed upon a proper place of ſufficient ſize for the purpoſe, fence it with hedges, pales or walls, to keep out cattle, hares and rabbets: then in october or november trench the land two ſpits deep, and in ſpring turn it over again: after which let the ſurface be laid ſmooth, and ſet out into quarters[1].

A very judicious planter, adds Dr. Hunter, recommended to him the following method of making a Seminary or Nurſery for foreſt trees.

Trench the ground in november eighteen inches deep, if the ſoil will admit of it; but where the ſtaple is too thin one foot will be ſufficient, in which caſe the ſward muſt be pared off very thin, and laid in the bottom of the trench. The following year let this land be cultivated with a crop of cabbages, turneps or rape, which muſt be eat off with ſheep. After this a common digging will be ſufficient, previous to its being formed into beds for the reception of the ſeeds. The urine of ſheep is one of the moſt cheriſhing manures for all plants raiſed in a Seminary or Nurſery[2].

The ſoil of the Nurſery, according to Mr. Marſhall, ſhould be rich and deep, and ſhould be prepared by double diggings and ſuitable meliorations: if not deep and rich by nature, it muſt be made ſo by art: for if the roots of the tender plants have not a ſoil they affect, or ſufficient room to ſtrike in, there will be little hope of their furniſhing themſelves with that ample ſtock of fibres which is neceſſary to a good plant, and with which it is the principal uſe of the Nurſery to ſupply them.

The ſituation of the Nurſery is determined by the ſoil or by local conveniences: the nearer it is, the more attendance will probably be given it; but the nearer it lies to the ſcene of planting, the leſs carriage will be requiſite.

In pruning ſeedlings, layers and ſuckers for the Nurſery, the roots ſhould not be left too long, but trimmed off pretty cloſe, to form a ſaug globular root. By this means the new fibres will be formed immediately round the main root, and may of courſe eaſily be removed with it, without diſturbing the earth interwoven among them. The tops ſhould, in moſt caſes, be trimmed cloſe up to the leader; or, if awkward or defective, be cut off a little above the root.

Various methods are practiſed for putting in ſeedlings: by the dibble, by the ſcoop, by a ſingle chop with the ſpade, by two chops one acroſs the other, by ſquare holes made by four chops of the ſpade, bringing up the mould with the laſt, or by bedding, a method chiefly made uſe of for quickſets. The chief art in putting them in lies in not cramping the fibres of the roots, but letting them lie free and eaſy in the mould: the particular mode or inſtrument to be made uſe of, depends much upon the ſize of the plants to be put in. This alſo determines, in a great meaſure, the proper diſtance between the rows and between plant and plant. The propoſed method of cleaning too is a guide to the diſtance. The natural tendency of the plant itſelf muſt alſo be conſidered. From ſix to twenty-four inches in the rows, with intervals from one to four feet wide, will comprehend the whole variation of diſtances.

Pruning is neceſſary, to prevent the plants from crowding each other, and to give them ſtem. Shrubs, which do not require a ſtem, ſhould be planted in a quincunx, that they may ſpread every way; but foreſt trees, and trees in general, require ſome length of ſtem; and in giving them this, the leading ſhoot is more particularly to be attended to. If the head be double, one of the ſhoots muſt be taken cloſe off: if it be maimed or defective, it may be well to cut the plant down to the ground, and train a freſh ſhoot, or if the head be taken off ſmooth, immediately above a ſtrong ſide ſhoot, this will ſometimes outgrow the crookedneſs, and in a few years become a ſtraight plant.

The time of the plants remaining in the Nurſery is determined by a variety of circumſtances; and a ſeaſonable thinning frequently becomes neceſſary. The general rule for this is, to thin as ſoon as the tops or roots interfere.

In taking up trees and ſhrubs for the purpoſe of planting them out where they are to ſtand, every root and fibre ought, as much as poſſible, to be preſerved; and therefore no violence ſhould be uſed in this operation. The beſt way is to dig a trench cloſe by the ſide of the plant, and having undermined the roots, to let it fall of itſelf, or with a very little aſſiſtance into the trench: if any roots ſtill have hold, cut them off with a ſharp inſtrument, ſo as to tear the main root as little as may be. If the root was properly pruned before planting, it will now turn out a globular bundle of earth and fibres.

When the Nurſery lies at a diſtance from the plantations, much depends upon packing the plants judiciouſly. Valuable plants are ſent in pots or baſkets. Straw however is uſed in general, and will ſufficiently protect them both from froſt and drought; eſpecially if for the latter purpoſe, the ſtraw be occaſionally moiſtened with water[3]. Moſs is the moſt effectual for keeping the roots moiſt and ſuppli in diſtant carriage.

See PLANTING, SEMINARY, &c.

NURVALA. See *Cratæva*.

NUT, BLADDER. See *Staphylæa*.

——, CASHEW. See *Anacardium*.

——, COCOA. See *Cocos*.

——, EARTH. See *Arachis*.

——, MALABAR. See *Juſticia*.

NUTMEG-TREE. See *Myriſtica*.

NUT, PHYSIC. See *Jatropha*.

NUT-TREE. See *Corylus*.

NUX. See *Juglans*.

—— AMERICANA. See *Melicocca*, *Quaſſia*, *Sapindus*.

—— AVELLANA. See *Corylus*.

—— JUGLANS. See *Juglans*.

[—— MALABARICA. See *Sterculia*.

—— MOLUCCANA. See *Jatropha*.

—— MOSCHATA and MYRISTICA. See *Myriſtica*.]

—— VESICARIA. See *Hernandia* and *Staphylæa*.

[—— VOMICA. See *Strychnos*.

—— ZEYLANICA. See *Sterculia*.

NYCTAGE. See *Mirabilis*.]

NYCTANTHES. (*From νὺξ night, and ἄνθος, a flower.*)
Lin. gen. Schreb. n. 21. & *p.* 816. *Juſſ.* 104.
Parillium. *Garin. t.* 51. Scabrita. *Lin. gen. Schreb. n.* 154. & *p.* 849. *mant.* 3.
Claſſ. 2. 1. Diandria Monogynia.
Nat. order of *Sepiariæ*. *Jaſminea*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, truncate, quite entire, permanent.

COR. one-petalled, ſalver-ſhaped. *Tube* cylindric, the length of the calyx. *Border* five-parted, ſpreading, with the lobes two-lobed.

STAM. *Filaments* two, in the middle of the tube, very ſhort. *Anthers* oblong, the length of the tube.

PIST. *Germ* ſuperior, ſubovate. *Style* filiform, the length of the tube. *Stigmas* two, acute.

PER. *Capſule* obovate, compreſſed, with an emarginate dagger-point, coriaceous, two-celled, bipartile: *cells* parallel, appreſſed, valvelefs.

SEEDS ſolitary, obovate, convex on one ſide, flat on the other, faſtened to the bottom of the cell.

OBS. *The corolla appears for the moſt part to be five-parted, but it is ſometimes ſix or ſeven-parted, and Linnæus obſerved it to be four-parted.*

ESSENTIAL CHARACTER.

Cor. ſalver-ſhaped, with truncate ſegments. *Capſ.* two-celled, margined. *Seeds* ſolitary.

[1] *Sylva*, *p.* 56. [2] *Idem*, *p.* 42. [3] *Planting*, 1. 24, &c. *ed.* 2.

SPECIES.

[1. Nyctanthes Arbor triſtis. *Square-ſtalked Nyctanthes. Lin. ſpec.* 8. *Jyſt.* 56. *Reich.* 1. 15. *Willd.* 35. *ſ. 2. n.* 11.

Scabrita triflora. *Lin. mant.* 37.

S. ſcabra. *Lin. ſyſt. ed.* 12. 115. *Reich.* 1. 290. *Pabl ſymb.* 2. 28.

Pariſium arbor triſtis. *Gærtn. fruct.* 1. 234.

Arbor triſtis. *Cluſ. exot.* 225. 279.—myrto ſimilis. *Bauh. pin.* 469.

Manja-puneran. *Rheed. mal.* 1. 35. *t.* 21. *Raii hiſt.* 1698.

Stem four-cornered, leaves ovate-acuminate, pericarp membranaceous compreſſed.

2. Nyctanthes undulata. *Wave-leaved Nyctanthes. Lin. ſpec.* 8. *Reich.* 1. 15. *Raii hiſt.* 1601. (Jaſminium).

Tiheregam mulla. *Rheed. mal.* 6. 97. *t.* 55.

Leaves ovate acuminate waved, branches round.]

3. Nyctanthes hirſuta. *Hairy Nyctanthes. Lin. ſpec.* 8. *Reich.* 1. 15. *Oſb. it.* 205. *ed. angl.* 1. 328.

Rava-pou. *Rheed. mal.* 4. 99. *t.* 48. *Raii hiſt.* 1602. *Burm. ind.* 4.

Petioles and pedunicles villoſe.

[4. Nyctanthes anguſtifolia. *Narrow-leaved Nyctanthes. Lin. ſpec.* 8. *Reich.* 1. 16.

Jaſminum indicum anguſtifolium, fructo gemino. *Tournef. inſt.* 593.

Katu-pitsiegam-mulla. *Rheed. mal.* 6. 93. *t.* 53. *Raii hiſt.* 1602.

Leaves obtuſe lanceolate and ovate.

5. Nyctanthes elongata. *Long-leaved Nyctanthes. Lin. ſyſt.* 56. *ſuppl.* 82. *Berg. gothof. tranſ.* 1772. 290. *t.* 11.

Leaves cordate-lanceolate-ovate elongated and ſmaller, branches round.

6. Nyctanthes viminea.

Retz. obſ. 5. 9. *n.* 1.

N. grandiflora. *Lour. cochinch.* 21. *ed. Willd.* 26?

Branches round elongated, leaves ovate-acuminate, pedunicles axillary one-flowered; terminating ones three-flowered.

7. Nyctanthes pubeſcens.

Retz. obſ. 5. 9. *n.* 2.

Branches round hirſute, leaves cordate pubeſcent on both ſides.

DESCRIPTIONS, *&c.*

1. This is a ſhrub, with four-cornered, rugged branches. Leaves oppoſite, petioled, ovate, oblong, quite entire, longer than the branch-joints, rugged on both ſides. Pedunicles axillary, oppoſite, ſolitary, four-cornered, ſhorter by half than the leaf, two-leaved at top with three-flowered pedicels. Partial involucre four-leaved? Leaflets obovate, the length of the calyxes, blunt, containing three ſeſſile florets[1]. Corolla funnel-ſhaped, with a ſix or eight-cleft border. Capſule coriaceous, ſuperior, obcordate or obovate, turgidly lenticular, in the twin middle ventricote and marked with a longitudinal elevated ſtreak, compreſſed at the ſides into a narrow ſharp margin, the reſt brittle, two-celled, bipartile; with the ſegments plano-convex, of a brown chefnut colour on the outſide, pale within, quite entire, valveleſs. Receptacle none; ſeed faſtened to the bottom of the cell, obovate, moderately acuminate downwards, convex on one ſide, flat on the other, brown. Nyctanthes (Jaſminum Sambac) has a fleſhy berry, and the ſeeds incloſed within an elaſtic aril, like Coffee; hence differing greatly from this[2], and joined in our work with Jaſminum.

Native of the Eaſt Indies. Introduced in 1781, by Sir Joſeph Banks[3].

The other ſpecies ſhould have been united to Jaſminum, but having been omitted under that genus, are given here rather than omit them entirely.

2. This is a ſhrub, attaining the height of a man. The young ſhoots are hairy. Leaves ſhining green, ſmooth, even, in pairs from the joints, bitter, without any ſmell. Flowers white, three or five together. Calycine ſegments about ſix; of the corolla ſix, ſeven or eight, narrow, very much waved on the edge outwardly. Fruit ſuperior, ſmooth and black like a ſmall cherry, with a thin ſkin, and a ſoft, dark-red, ſweetiſh pulp, containing a round hairy ſeed.

Native of the Eaſt Indies, where it is much cultivated on account of the ſweetneſs of the flowers, which the women there wear in their hair[4].

3. This is a tall tree, with a thick trunk of a chalk white wood, covered with a dark purple, ſmooth, inodorous, inſipid bark. Leaves oppoſite, decuſſated, acuminate, ſoft, ſmooth, ſhining, dark green above, on round, rufous, lanuginous petioles. Flowers on the more tender branches, on long, rufous, lanuginous pedunicles, from the axils of the leaves, three, four or more together, white, ſmelling very ſweet, opening during the night, and fading at ſun-riſe[5].

Leaves elliptic-lanceolate or ovate, waved. Calyx cylindrical, ſix-cleft; ſegments equal. Segments of the corolla eight, oblong, pointed, ſhorter than the tube. Filaments ſhort. Anthers oblong, and longer than the filaments[6].

Native of the Eaſt Indies and China.

4. Rheede compares this with Jaſminum Sambac, and ſays that the twigs are of a more duſky green approaching to brown; the leaves ſometimes more oblong, yet without any point, ſometimes wider, oppoſite, petioled, of a more duſky green than any of the reſt, and of a bitter taſte[7]. Calycine ſegments ſix; corolline from ſix to ten or eleven, lengthened out into a ſort of prickle at the end, very narrow and white, except at the edge where they are tinged with red. The ſmell is very fine.

Native of Malabar, in a ſandy ſoil; at about Crangannor, Caroer, &c. flowering in June and July[8].

5. Branches round, the upper ones villoſe. Leaves ſmooth; the lower ones cordate, ovate. Flowers terminating, five or ſix, in a ſort of umbel. Calyx very ſmall, with the ſegments awl-ſhaped, and hairy. Tube of the corolla thickened above.—Native of the Eaſt Indies[9].

6. This is a ſhrub with weak, ſmooth branches, like oſiers. Leaves on ſhort petioles, naked, an inch long. Pedunicles ſhort, ſolitary. Calyx truncated, with awl-ſhaped teeth ſhorter than the tube of the corolla, which thickens gradually; ſegments the length of the tube, linear-lanceolate. Koenig ſent it from Tranquebar[10].

Retzius thinks that this may poſſibly be the ſame with N. grandiflora of Loureiro, which he thus deſcribes—Stem ſhrubby, erect, five feet high, thick, rugged. Leaves ſtellate by threes and oppoſite, ovate, ſubcordate, ſubacute, wrinkled, ſmooth. Flowers white, double, terminating, one or two together, three times as large as thoſe of the Sambac, handſomer, but inferior in fragrance. Calyx ten-cleft, with linear, erect ſegments. The loweſt order of ſegments in the corolla inconſtant in number. Cultivated both in China and Cochinchina.

7. This alſo is a ſhrub with oppoſite white-haired branches. Leaves oppoſite, petioled, quite entire; the uppermoſt roundiſh. Flowers in bundles, at the ends of the branches. Bractes lanceolate, hirſute. Calyx hirſute, with long, linear teeth. Corolla one of the largeſt of the genus, ſmooth, with a tube longer than the teeth of the calyx. Sent from Calcutta by Koenig[11].

PROPAGATION AND CULTURE.

See Jaſminum Sambac.] They require the ſame treatment with that, but are more difficult to propagate.

[NYCTANTHES. See *Jaſminum.*

NYCTELEA. See *Eliſha.*]

NYMPHÆA (*of Plin.* Nymphæa *of Theophraſtus and Diſcorides. From its growing in water, which the poets feigned to be the reſidence of the Nymphs.*)

Lin. gen. n. 653. *Reich. n.* 709. *Schreb. n.* 886. *Tournef. t.* 137, 138. *Juſſ.* 68. *Gærtn. t.* 19.

[1] Linn. mant. [2] Gærtner. [3] Hort. kew. [4] Hort. malab. [5] Idem. [6] Oſbeck. [7] Hort. malab. [8] Idem. [9] Linn. ſuppl. [10] Retz. [11] Idem.

Nelumbo. *Tournef. Adanſ.* 76. *Gertn. t.* 19. Nelumbium. *Juſſ.* 68.

Claſſ. 13. 1. Polyandria Monogynia.

Nat. order of *Succulentæ. Hydrocharides*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* inferior, four, five, or ſix-leaved, large, coloured above, permanent.

COR. *Petals* numerous (often fifteen) placed on the ſide of the germ, in more than one row.

STAM. *Filaments* numerous, (often ſeventy) flat, curved, blunt, ſhort. *Anthers* oblong, faſtened to the margin of the filaments.

PIST. *Germ* ovate, large. *Style* none. *Stigma* orbiculate, flat, peltate-ſeſſile, rayed, crenate at the edge, permanent.

PER. *Berry* hard, ovate, fleſhy, rude, narrowed at the neck, crowned at the top, many-celled, (cells from ten to fifteen) full of pulp.

SEEDS very many, roundiſh.

OBS. N. lutea *differs from the reſt in having a five-leaved calyx, with roundiſh leaflets, and the petals very ſmall.*

Nelumbo *has the pericarp turbinate, truncate, with one ſeed in each cell, the cells opening by their proper holes along the diſk.*

ESSENTIAL CHARACTER.

Cal. four, five or ſix-leaved. *Cor.* many-petalled. *Berry* many-celled, truncated.

SPECIES.

[1. Nymphæa advena. *Three-coloured Water Lily. Ait. hort. kew.* 2. 226.

N. floribus flavis. *Clayton in Gron. virg. ed.* 1. 164.

Leaves cordate quite entire, lobes divaricate; calyx five-leaved longer than the petals.]

2. Nymphæa lutea. *Yellow Water Lily.*

Lin. ſpec. 729. *ſyſt.* 491. *Reich.* 2. 578. *fl. lapp. n.* 218. *ſuec. n.* 469. *hort. cliff.* 203. 1. *Gertn. fruct.* 1. 73. *Hudſ. angl.* 234. *Wither. arr. ed.* 3. 488. *Engl. bot.* 159. *Lightf. ſcot.* 282. *Relh. cant. n.* 390. *Sibth. oxon. n.* 479. *Hall. helv. n.* 1066. *Neck. gallob.* 228. *Scop. carn. n.* 639. *Crantz. auſtr.* 142. *Gunn. norv. n.* 441. *Fl. dan. t.* 603. *Pollich pal. n.* 508. *Krock. ſilef. n.* 822. *Villars dauph. n.* 700. *Allion. pedem. n.* 1933. *Gmel. ſib.* 4. 184. *Blackw.* 497. *a, b.* & 499. 1. *Kniph. cent.* 3. *n.* 66. *Knorr. del.* 2. *t.* N. 1. *Comer. epit.* 635. *Lonic.* 1. 177. 2. *Fuchſ.* 536. *Trag.* 697. *Bauh. hiſt.* 3. 771. *Matth.* 894. *Dod. pempt.* 585. 2. *Lob. obſ.* 324. 2. *ic.* 1. 594. 2. *Ger.* 672. 2. *emac.* 819. 2. *Raii hiſt.* 1319. *ſyn.* 368. *Petiv. brit.* 71. 3. *Beſl. eyſt. vern.* 7. *t.* 3. *f.* 3. *Jungh. eſſic. cent.* 1. *f.* 2.

N. major lutea. *Bauh. pin.* 193. *Cluſ. hiſt.* 2. 77. 2. *Park. theat.* 1252. 5. *Mor. hiſt.* 3. 512.

Nenuphar luteum. *Brunf.* 38.

Leaves cordate entire, lobes approximating; calyx five-leaved longer than the petals.

3. Nymphæa alba. *White Water Lily.*

Lin. ſpec. 729. *ſyſt.* 491. *Reich.* 2. 578. *fl. lapp. n.* 219. *ſuec. n.* 470. *hort. cliff.* 203. 2. *mat. med.* 135. *Gertn. fruct.* 1. 72. *Hudſ. angl.* 234. *Wither. arr. ed.* 3. 489. *Engl. bot.* 160. *Lightf. ſcot.* 283. *Relh. cant. n.* 391. *Sibth. oxon. n.* 480. *Hall. helv. n.* 1067. *Neck. gallob.* 227. *Scop. carn. n.* 640. *Crantz. auſtr.* 142. *Pollich pal. n.* 509. *Fl. dan. t.* 602. *Gunn. norv. n.* 440. *Krock. ſilef. n.* 823. *Villars dauph.* 3. 700. *Allion. pedem. n.* 1934. *Gmel. ſib.* 4. 183. *t.* 72. *Blackw.* 498. *a, b.* & 499. *Knorr. del.* 2. *t.* N. *Regn. bot. Comer. epit.* 634. *Bauh. hiſt.* 3. 770. *Matth.* 893. *Cluſ. hiſt.* 2. 77. 1. *Dod. pempt.* 585. 1. *Lob. obſ.* 324. 1. *ic.* 1. 595. 1. *Ger.* 672. 1. *emac.* 819. 1. *Raii hiſt.* 1320. *ſyn.* 368. *Petiv. brit.* 71. 1. *Beſl. eyſt. vern.* 7. *t.* 3. *f.* 2.

N. candida. *Trag.* 696. *Fuchſ.* 535.

N. alba major. *Bauh. hiſt.* 193. *Mor. hiſt.* 3. 513. 4.

—vulgaris. *Park. theat.* 1251. 1.

β. N. alba minor. *Bauh. hiſt.* 193. *Ger.* 673. *emac.* 820. 3. *Park. theat.* 1252. 3. *Mor. hiſt.* 3. 513. 5. *Beſl. eyſt. vern.* 7. *t.* 3. *f.* 1.

Leaves cordate quite entire, lobes imbricate rounded; calyx four-leaved.

[4. Nymphæa odorata. *Sweet-ſmelling Water Lily. Ait. hort. kew.* 2. 227.

N. alba, flore pleno odorato. *Clayton in Gron. virg. ed.* 1. 57. *ed.* 2. 81.

N. alba minor. *Gmel. ſib.* 4. 184. *t.* 71.

Leaves cordate entire emarginate, lobes divaricating with an obtuſe point; calyx four-leaved.

5. Nymphæa Lotus. *Egyptian Water Lily.*

Lin. ſpec. 729. *Reich.* 2. 579. *fl. zeyl. n.* 194. *Haſſelq. it.* 471. *ed. angl.* 249. *Brown. jam.* 243. 1.

N. indica, flore candido, folio in ambitu ſerrato. *Sloan. jam.* 1. 252. *Raii ſuppl.* 630.

N. ægypt. alba, fol. crenato, rad. tuberoſa. *Mor. hiſt.* 3. 513.

Lotus ægyptia. *Alp. ægypt.* 103. *exot.* 214. *t.* 213. 216. 218. 220. 222. 226. *Park. theat.* 1251. *f.* 2. *Raii hiſt.* 1321.

Ambel. *Rheed. mal.* 11. 51. *t.* 26.

Leaves cordate toothed.

6. Nymphæa Nelumbo. *Peltated Water Lily.*

Lin. ſpec. 730. *ſyſt.* 491. *Reich.* 2. 579. *hort. cliff.* 203. 3. *fl. zeyl. n.* 193. *Loefl. in nov. act. nat. cur. tom.* 5. *app. p.* 191. *Brown. jam.* 243. 2. *Herm. par. t.* 205. *Thunb. jap.* 223. *Lour. cochinch.* 340. *Rumph. amb.* 6. 168. *t.* 73. *Plak. phyt. t.* 322. *f.* 1. *opt.*

Nelumbo nucifera. *Gertn. fruct.* 1. 73.

Tamara & Bem Tamara. *Rheed. mal.* 11. 59—61. *t.* 30. 31. *Raii ſuppl.* 632.

Nymphææ affinis, &c. *Mor. hiſt.* 514. *n.* 3. 4.

β. Nymphææ affinis glandifera virginiana, umbilicato folio, flore luteo pleno. *Mor. hiſt.* 3. 514. *Raii ſuppl.* 632. *Pluk. alm.* 267.

Leaves peltate, entire all round.

DESCRIPTIONS, *&c.*

Theſe are herbaceous perennial plants, with long tuberous roots. Leaves alternate, on a very long petiole, half theathing below, floating. Pedunicles long, naked like ſcapes, one-flowered. Flowers large, emerging. Germ and ſtigma approaching to the Poppy[1].

1. Petioles half round, commonly erected above the water. Leaves cordate-oblong, more narrowed towards the top than in N. lutea. Peduncle round. Leaflets of the calyx roundiſh, blunt, concave: the three outer ſpreading, green on the outſide, dirty purple within, an inch in diameter: the three inner twice as large, ſuberect, yellow on the outſide, within dirty purple. Petals about thirteen, inſerted into the ſides of the receptacle in a ſingle row, ſomewhat wedge-ſhaped, bluntly rounded, from ſpreading reflex, yellow, three lines wide. Filaments very numerous, inſerted in ſeveral rows into the receptacle, linear, a line in width, ſcarcely half an inch in length, firſt erect then reflex, yellow, red in the middle. Anthers linear, two on each filament, faſtened to the edges of it. Germ columnar, deeply grooved, with thirteen angles, yellow. Stigma peltate, ſlightly umbilicate, yellow, with thirteen rays, deeply toothed at the edge with thirteen blunt teeth, green above.

Native of North America. Introduced in 1772. by Mr. William Young. It flowers in July[2].

2. The leaves of the Yellow Water Lily are ſmooth, plane, except that they turn up a little at the edge to keep off the water, tough and pliant, ten or twelve inches in diameter, floating, ovate or nearly orbicular, bright green above, paler underneath, with branched raiſed nerves or veins. Petioles ſmooth, three-ſided, their length depending on the depth of water: I have one before me on the 8th of june 1768, five feet and a half in length. The caſe is the ſame with the peduncle, which always elevates the flower above the water; but after it is impregnated, the ſeeds are ripened under water, and fall into the mud at bottom to produce new plants. The peduncles are round, ſucculent and one-flowered. Flowers an inch and half

[1] Juſſieu. [2] Hort. kew.

in

in diameter, having a vinous ſmell. Calyx larger than the corolla: leaflets roundiſh, blunt, erect, quite entire, ſubſinuate, ſmooth, tough, yellow, except at the baſe on the outſide, where they are green, inſerted into the baſe of the germ, regular, almoſt an inch in length and breadth. Petals fleſhy, yellow, about half an inch in length and five lines in breadth, notched and grooved, from ten to twenty in number. Stamens very numerous, one hundred or even one hundred and ſixty-five in number, when the flower firſt opens preſſing cloſely on the germ, but after they have ſhed their pollen bending back: filaments yelloviſh, thicker than the anthers, ſeparate from the germ: anthers yellow, two lines in length. Germ ovate, blunt, ſmooth, terminated by a hollow in form of a navel. Style thick and very ſhort, or ſcarcely any. Stigma yellow, unequally and ſometimes obſcurely notched, a little convex, having eleven or twelve rays, and being depreſſed at the centre[*]. The fruit is ſhaped like a bottle, or ovate-conical, very ſmooth, crowned with the ſtigma, which is grooved, quite entire and peltate: within it is divided into from twelve to fifteen cells; which are irregular, ſubdivided by partial partitions, ſo that each ſeed has as it were its own cell. Seeds fewer than in N. alba, but twice as large, ovate-acuminate, yelloviſh, very ſmooth and ſhining, keeled with an angle. Embryo lenticular-conical, glued to the hole of the albumen, and covered only by the integuments of the ſeed[*].

Linnæus tells us that ſwine are fond both of the leaves and root, that goats are not fond of it; and that kine, ſheep and horſes refuſe it: alſo that crickets are driven out of houſes by the ſmoke in burning it, and that both they and cock-roaches are deſtroyed by the roots rubbed or bruiſed with milk. Ray obſerves, that the flowers ſmell like brandy. Dr. Withering informs us, that an infuſion of a pound of the freſh root, in a gallon of water, taken in the doſe of a pint night and morning, cured a leprous eruption of the arm.

Yellow Water Lily is native of moſt parts of Europe, in ſlow rivers, pools and ditches, flowering in July and auguſt.

Kalm obſerved the ſame ſpecies in Canada, with a flower ſcarcely ſo big as that of Caltha paluſtris.

In German it has the various names of *die gelbe Seeblume, gelbe Seeroſe, gelbe Plompen, gelbe Mummela, gelbe Waſſerblume, gelbe Seekandel, gelbe Weiberroſen, gelbe Waſſerlilie, Kannenplompen, Nixblumen, Hoarwurz, Hoarſtrang, Poppeike.* In Dutch, *Geele plompen.* In Daniſh, *Aakandel, Seeblomſter, Haarred.* In Swediſh, *Nixblad.* In Smoland, *Siollon.* In Scania, *Akanna.* In French, *le Nenuphar jaune.* In Italian, *Nenufaro giallo, Ninfea gialla.* In Spaniſh, *Nenufar amarilla, Eſcudete.* In Portugueſe, *Nymphea amarella, Golfao.*

3. Root tuberous, frequently the ſize of the human arm, creeping far and wide and deep in mud. The whole plant is larger in all its parts than the preceding. The leaves are much the ſame, only larger. Petioles and peduncles round, within full of pores, four of which are generally larger than the reſt; hairs interwoven between. Flowers large, being ſometimes ſix inches in diameter, very handſome and double. Calycine leaflets ſmaller than the outer petals, being about two inches long, and an inch wide, ovate, blunt, ſpreading, ſmooth and yelloviſh green on the outſide with a white edge, ſtriated and ſhining, within white. Petals white, from ſixteen to twenty or twenty-four in number, in two or three rows, wider than the leaves of the calyx, and more ovate; the outer ones have a green ſtreak along the back, and approach more to the nature of the calyx; as the inner ones, which are gradually ſmaller, do to the ſtamens: they are inſerted at the baſe of the germ. Stamens ſixty-eight or ſeventy, ſometimes as many as eighty-ſix; filaments ſhort, thick, wide, ovate-lanceolate, faſtened to the ſide of the germ, white; the inner ones yellow, bent inwards, the outermoſt reſembling the inner petals. Germ roundiſh. Style none. Stigma rayed, having little reflex notches about the edge, ten lines in diameter; each ray correſponding to a cell in the germ[*]. Berry ſuperior, ſpherical, warted with the remains of the filaments, umbilicated with a very large, concave, grooved, crenulate ſtigma, like the Poppy, and having twenty cells or thereabouts: rind thin, leathery: pulp of the cells gelatinous, drying up to a ſpongy ſubſtance. Seeds very numerous, oblong-ſpheroidal, ſmooth, ſhining, having a very blunt angle on one ſide, yelloviſh green or livid, naſtling in the pulp, without any certain ſituation or order. Albumen both in this and the preceding of the ſame ſhape with the ſeed, farinaceous, very white, friable, with an open hole at the baſe, embryo in this monocotyledonous, lenticular-globular, fleſhy, yelloviſh, ſlightly immerſed in the cavity of the albumen, not covered by the ſubſtance of it, but only by the common integuments of the ſeed[*].

According to Linnæus, the flower raiſes itſelf out of the water and expands about ſeven o'clock in the morning, and cloſes again, repoſing upon the ſurface, about four in the evening.

The roots have an aſtringent bitter taſte; they are uſed in Ireland, in the highlands of Scotland, in the iſland of Jura, &c. to dye a dark brown or cheſtnut colour. Swine are ſaid to eat it, goats not to be fond of it, kine and horſes to refuſe it. The flowers, the herb and the root were formerly uſed in medicine, but are all now obſolete.

White Water Lily or Water Roſe, is native of moſt parts of Europe, in ſlow ſtreams, pools and ditches, flowering in July and auguſt. Both this and the preceding are called in ſome counties *Water-can* or *Candock*, and *Wuterſocks*. In German it is *die weiſſe Seeblume* or *Seeroſe, Waſſerlilye, Waſſerambren, Waſſernanacken, weiſſe Waſſerblumen, Waſſerroſe, Waſſerachn, Waſſerlilie, weiſſe Weiberroſe, weiſſe Seekandel, Seepappen, weiſſe Seeplompen, weiſſe Plumpen, weiſſe Mummele, Haarwurz, Haarſtrang, Tell-lilie, Kellerwurz, Kellerwurz, Kehlwurz, Kohlwurz, Kenkwurz, Herkuleswurz, Harzwurz, Murmelken.* In Dutch, *Witte Plompen, Pauneknock, Meirkland, Waterroos.* In Daniſh, *Aakande, Seeblomſter, Seeblommer, Seeblad, Hazred, Kierringekrus, Fruar, Kiodneblom.* In Swediſh, *Sjoblad.* In French, *le Nenuphar blanc, Lis d'etang.* In Italian, *Nenufaro bianco, Ninfea bianca.* In Spaniſh, *Nenufar blanco, Ninfea blanca, Eſcudete, Higo de rio.* In Portugueſe, *Nymphea branco, Golfam, Golfao.* In Ruſſian, *Wodanoi lelei, Kuliſchka.*

4. This is altogether different from the ſmaller variety of the preceding ſpecies, which differs from the common White Water Lily in nothing but in ſize. It is a native of North America and the Eaſt of Siberia; was introduced in 1786 by William Hamilton Eſq., and flowers in july[*].

5. Egyptian Water Lily reſembles our common White ſpecies very much in the form of the flower and leaves, but the latter are toothed about the edge. It is native of the hot parts of the Eaſt Indies, Africa and America. It is very common in ponds, lakes and rivers in Jamaica: and grows in vaſt quantities in the plains of Lower Egypt near Cairo, during the time they are under water. It flowers there about the middle of ſeptember, and ripens towards the end of octobers. The Arabians call it Nuphar. The ancient Egyptians made a bread of the ſeed of the Lotus dried and ground.

6. Root horizontal, long, creeping, conſiſting of joints linked together, ovate-oblong, white, fleſhy, eſculent, tubular within. Leaves exactly peltate, with a cavity in the centre above, and dichotomous veins ſpringing from the ſame centre, orbiculate with a point on each ſide, a little waved, thin, paler underneath, ſmooth, of different ſizes from four to twelve inches. Petioles erect, very ſtraight, round, hiſpid or muricated, thicker below, attenuated above. Pedunicle the thickneſs of a finger below, attenuated above, ſpongy, muricated, one-flowered. Flower as large as the palm of the hand, or larger, purple. Calyx four-

[*] Pollich. Knoch. Gunner. Villars. Lightf. Withering.
[*] Gærtner.

[*] Pollich. Villars. Lightf. Relhan. [*] Gærtner.
[*] Hort. Kew.

leaved: leaflets concave, ſpreading, deciduous. Corolla conſiſts of fifteen petals or more, ovate, ſubacute, concave, many-nerved on the outſide, ſpreading. Stamens ſixty or more, ſhorter than the corolla: anthers linear, white, very long, placed on the receptacle. Germ retundate, ſuperior. Styles as many as there are ſeeds, thick and very ſhort: the ſtigmas thicker. Pericarp turbinate, truncate, grooved, corticoſe, opening at top, cells one-ſeeded, as far as thirty. Seeds ovate, half an inch long, white, hardiſh, eatable, with a thin, ſmooth, black rind[a].

What is commonly named the pericarp, Gærtner calls the Common Receptacle, and deſcribes it as inverſely conical, ſuberous or fungous, flat above, having round, ſeparate cells within, equal in number to the ſeeds. The proper receptacle is a very ſhort umbilical chord reaching from the bottom of the cell to the baſe of the ſeed, and inſerted into the umbilical cavity. Seeds nucamentaceous, from fifteen to thirty, oblong-ſpheroidal or nearly globular, with the ſhort permanent ſtyle at top, and a very minute umbilical pore at the baſe, ſmooth, blackiſh, or of a reddiſh brown colour. The receptacle in ſome is ſharply, in others parabolically conical, in others almoſt hemiſpherical, in others again very much flatted. It varies alſo in conſiſtence; being either fungoſe, ſo that it may be eaſily compreſſed by the fingers, or ſuberoſe, or elſe cruſtaceous and hard. Finally, it differs in the number of cells from twelve to thirty.

The Nelumbo is the connecting link between the monocotyledonous and dicotyledonous plants; for by the ſtructure of the ſeed it appears to belong to the latter, but in reality it ranks with the former, for it conſtantly puts forth one leaf only in germination, and does not produce a ſecond, till the firſt is entirely unfolded above water: this Gærtner ſays he has found to be the caſe in more than fifty nuts that were ſent him by Lerche.

β. Differs in having hard ſeeds; in other circumſtances it agrees with the other ſo much as ſcarcely to be diſtinguiſhed.

Nelumbo or peltated Water Lily is a native both of the Eaſt and Weſt Indies, China, Cochinchina and Japan, Perſia and ſome parts of the Ruſſian Empire. Browne ſays it is pretty common in the lagoons beyond the ferry in Jamaica, but not in the deeper waters. Thunberg informs us, that it is conſidered as a ſacred plant in Japan, and pleaſing to their deities, and that the images of their idols were often ſeen ſitting on its large leaves. The long ſtalks are eaten among other pot-herbs. It differs from the Egyptian Lotus in having entire thin leaves, with the petiole and peduncle rugged.

Loureiro relates that it abounds in muddy marſhes, and is cultivated in large handſome pots in the gardens and houſes of the mandarines; that there is a variety with the flower of a pure white, and another with a very beautiful luxuriant flower, having about one hundred large petals, white or roſe-coloured. Both root and ſeeds are eſculent, vapid and wholeſome. They are accounted cooling and ſtrengthening, and to be of ſervice in extreme thirſt, diarrhœa, tenеſmus, vomiting, and too great internal heat.

In China it is called *Lien-whoa*, and the ſeeds and ſlices of the hairy root, with the kernels of apricots and walnuts, and alternate layers of ice were frequently preſented to the Britiſh ambaſſador and his ſuite at breakfaſts, given by ſome of the principal mandarines.

The Chineſe have always held this plant in ſuch high value, that at length they regarded it as ſacred. That character however has not limited it to merely ornamental purpoſes; for the roots are not only ſerved up in ſummer with ice, but they are alſo laid up in ſalt and vinegar for the winter. The ſeeds are ſomewhat of the ſize and form of an acorn, and of a taſte more delicate than that of almonds. The ponds are generally covered with it, and exhibit a very beautiful appearance, when it is in flower: and the flowers are no leſs fragrant than handſome.

Sir George Staunton remarks that the leaf, beſides its common uſes, has from its ſtructure, growing entirely round the ſtalk, the advantage of defending the flower and fruit, growing from its centre, from any contact with the water, which might injure them. He alſo remarks that the ſtem never fails to aſcend in the water from whatever depth, unleſs in caſe of a ſudden inundation, until it attains the ſurface, where its leaf expands, reſts and ſwims upon it, and ſometimes riſes above it. But this property it has in common with the other ſpecies of Nymphæa. This plant bears the rigorous cold of the Pekin winter, though it is reared with difficulty in European ſtoves. It often grows ſpontaneouſly in China, and is propagated in the open air with eaſe, both by the ſeed and root. The Chineſe diſtinguiſh many varieties of it.

From the root of the Nelumbo, Sir George Staunton ſays, the Egyptians are ſuppoſed to have prepared their Colocaſia, but the plant is now no longer found in that country: from which circumſtance ſome naturaliſts infer, that it never was indigenous there; but cultivated by the inhabitants with extreme care. The ancient Romans made repeated efforts to raiſe it among them, from ſeeds brought out of Egypt; and the modern attempts to cultivate it in Europe, though with the aſſiſtance of artificial heat, ſeldom have ſucceeded[f].

Dr. Patrick Browne is of opinion that the ancients confounded two plants under the name of Lotus or Egyptian Bean, and that under theſe titles they deſcribed the upper parts of the Nymphæa Nelumbo, and the roots of the leſſer Colocaſia, now commonly called Coccos in Jamaica. *Arum Colocaſia*[g].

The tree Lotus muſt not be confounded with the Nymphæa. Mr. Mungo Park, in his late extenſive peregrinations in Africa, diſcovered it to abound in all the countries he traverſed, but flouriſhing moſt in a ſandy ſoil. It is rather a thorny ſhrub than a tree. The fruit is a ſmall farinaceous berry, which being pounded and dried in the ſun, is made into excellent cakes, reſembling in colour and flavour the ſweeteſt gingerbread. A liquor alſo is prepared from it, deliciouſly ſweet; the ſame perhaps which is fabled to have produced ſuch extraordinary effects on the companions of Ulyſſes[h].

" The trees around them all their food produce,
" Lotos the name, divine, nectareous juice!
" Thence call'd Lotophagi, which whoſo taſtes,
" Inſatiate riots in the ſweet repaſts,
" Nor other home, nor other care intends,
" But quits his houſe, his country, and his friends!."

Theophraſtus deſcribes the Lotus tree as ſomething leſs than the pear-tree, with leaves cut about the edges, and reſembling thoſe of the Ilex or ever-green oak. He adds, that there are ſeveral ſorts or varieties, differing in their fruit, which is the ſize of a bean, and grows thick upon the branches like myrtle berries. The poets repreſent the Lotus as an aquatic tree. Ovid calls it *aquatica Lotus*. Martial ſays:

" Nec plus Lotos aquas, littora myrtus amat."

And Virgil joins it with the Willow. Mr. Park ſays it affects a ſandy ſoil, but he does not inform us whether it is found near water. See Lotus.

Nymphæa Nelumbo was introduced here in 1787, by Sir Joſeph Banks[k].]

PROPAGATION AND CULTURE.

2. 3. The beſt method to propagate theſe plants is, to procure ſome of their ſeed veſſels juſt as they are ripe and ready to open, and to throw them into canals or large ditches of ſtanding water, where the ſeeds will ſink to the bottom, and the following ſpring the plants will appear floating upon the ſurface of the water. When they are once fixed to the place, they will multiply exceedingly, ſo as to cover the whole ſurface of the water in a few years.

They may alſo be cultivated in large troughs or ciſterns of water, having earth at the bottom, and will flouriſh very well in them, annually producing great quantities of flowers.

[a] Thunb. Loureiro.

[f] Embaſſy, vol. 2. pp. 70, 123, 301.
[g] Jam. 243. 332.
[h] Afric. Aſſoc.
[i] Hom. Odyſſ. 9. tranſl. Pope.
[k] Hort. Kew.

[The

The tender ſorts (n. 5, 6.) may be kept in ſuch ciſterns, ſet in a corner of the ſtove. In hot countries they are increaſed both by roots and ſeeds, as our common ſorts may here.

NYMPHÆA. See *Menyanthes* and *Hydrocharis*.

NYMPHOIDES. See *Menyanthes*.]

NYSSA. (*A water nymph. So called from its growing in the water.*)

Gronov. Lin. gen. n. 1163. *Reich. n.* 1275. *Schreb. n.* 1599. *Juſſ.* 75.

Claſſ. 23. 2. Polygamia Dioecia.

Nat. order of *Holoraceæ. Elæagni*, Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* five-parted, ſpreading, with a plane bottom.

COR. none.

STAM. *Filaments* ten, awl-ſhaped, ſhorter than the calyx. *Anthers* twin, the length of the filaments.

* *Hermaphrodite.*

CAL. *Perianth* as in the male, ſitting on the germ.

COR. none.

STAM. *Filaments* five, awl-ſhaped, erect. *Anthers* ſimple.

PIST. *Germ* ovate, inferior. *Style* awl-ſhaped, curved inwards, longer than the ſtamens. *Stigma* acute.

PER. *Drupe.*

SEED. *Nut* oval, acute, ſcored with longitudinal grooves, angular, irregular.

ESSENTIAL CHARACTER.

Cal. five-parted. *Cor.* none.

MALE. *Stamens* ten.

HERM. *Stam.* five. *Piſt.* one. *Drupe* inferior.

SPECIES.

1. Nyſſa integrifolia. *Mountain Tupelo.*
Ait. hort. kew. 3. 446.
N. aquatica. *Lin. ſpec.* 1511. *Juſſ.* 919. *Reich.* 4. 358. *hort. cliff.* 462. *Du Roi harbk.* 1. 444.
N. ſylvatica *Marſh. arbuſt.* 96. *Cateſb. car.* 1. *t.* 41. *Pluk. phyt. t.* 172. *f.* 6. (Cynoxylon).
N. pedunculis multifloris. *Gron. virg.* 121.—item ped. unifloris, quæ foemina.
Leaves quite entire, nuts roundiſh ſtriated.

[2. Nyſſa denticulata. *Water Tupelo.*
Ait. hort. kew. 3. 446. *Cateſb. car.* 1. *t.* 60.
N. aquatica. *Marſh. arbuſt.* 96.
Leaves remotely toothed, nuts oblong grooved ſomewhat wrinkled.

DESCRIPTIONS, *&c.*

1. The upland Tupelo-Tree or Sour Gum grows naturally in Pennſylvania and perhaps elſewhere, riſing with a ſtrong upright trunk to the height of thirty or forty feet, and ſometimes near two feet in diameter; ſending off many horizontal, and often depending branches. Leaves obovate, a little pointed, entire, of a dark green and ſhining upper ſurface, but lighter and a little hairy underneath: thoſe of male trees are often narrower and ſometimes lance-ſhaped. The flowers are produced upon pretty long common footſtalks, ariſing from the baſe of the young ſhoots, and dividing irregularly into ſeveral parts, generally from ſix to ten; each ſupporting a ſmall flower, having a calyx of ſix or ſeven unequal leaves, and from ſix to eight awl-ſhaped ſpreading ſtamens, ſupporting ſhort four-lobed anthers. The female trees have fewer flowers produced upon much longer ſimple cylindrical footſtalks, thickened at the extremity, and ſupporting generally three flowers, ſitting cloſe and having a ſmall involucre. They are compoſed of five ſmall oval leaves, and in the centre an awl-ſhaped incurved ſtyle, ariſing from the oblong germ, which is inferior, and becomes an oval oblong berry, of a dark purpliſh colour when ripe. The timber of this tree is cloſe grained and curled ſo as not to be ſplit or parted; and therefore much uſed for hubs of wheels of carriages, &c.[1]

It was cultivated in 1750, by Archibald Duke of Argyle[2].

Mr. Miller has the Nyſſa aquatica, probably this ſpecies, in the two quarto editions of his Dictionary, 1763, and 1771 but not in the two folio editions of 1759 and 1768. His deſcription is very imperfect.]

[1] Marſhall. [2] Hort. kew.

He ſays that it grows naturally in Virginia and ſeveral other parts of North America, and that it had been introduced of late years into the Engliſh gardens, but had made little progreſs.

[2. The Virginian Water Tupelo-Tree grows naturally in wet ſwamps, or near large rivers in Carolina and Florida; and riſes with a ſtrong upright trunk to the height of eighty or an hundred feet, dividing into many branches towards the top. The leaves are pretty large, of an oval-ſpear-ſhaped form, generally entire, but ſometimes ſomewhat toothed, and covered underneath with a whitiſh down: they are joined to long ſlender footſtalks, and affixed to the branches in ſomewhat of a verticillate order, preſenting a beautiful varied foliage. The berries are near the ſize and ſhape of ſmall olives, and are preſerved as that fruit is by the French inhabitants upon the Miſſiſippi, where it greatly abounds, and is called the Olive tree. The timber is white and ſoft when unſeaſoned, but light and compact when dry, which renders it very proper for making trays, bowls, &c.[1]

It was introduced here in 1735, by Peter Collinſon, Eſq.[2]

Mr. Humphrey Marſhall, in his American Grove, quoted above, adds a third ſort, from Bartram's catalogue, which he calls Nyſſa Ogeeche, or Ogeeche Lime-tree. He deſcribes it as a tree of great ſingularity and beauty, growing naturally in water, in the ſouthern ſtates, and riſing to the height of about thirty feet. The leaves are oblong, of a deep ſhining green on their upper ſides, and lightly hoary underneath. The flowers are male and female upon different trees, and are produced upon divided, or many-flowered footſtalks. The fruit is nearly oval, of a deep red colour, the ſize of a Damaſcene Plum, and of an agreeable acid taſte, from which it is called the Lime-tree.

Mr. Bartram informs us that he ſaw large tall trees of this ſort on the banks of the Alatamaha river, growing in the water, near the ſhore. He calls it Nyſſa coccinea; and obſerves that there is no tree which exhibits a more deſirable appearance than this, in the autumn, when the fruit is ripe, and the tree diveſted of its leaves: for then they look as red as ſcarlet, with their fruit, which is of that colour alſo. It is the ſhape of the Olive, but larger, and contains an agreeable acid juice. The leaves are oblong lanceolate and entire, ſomewhat hoary underneath; their upper ſurface of a full green and ſhining; the petioles ſhort. The peduncles are many-flowered. The moſt northern ſettlement of this tree yet known, is on Great Ogeeche, where it is called Ogeeche Lime, from the acid fruit being about the ſize of Limes, and being ſometimes uſed in their ſtead[3].]

PROPAGATION AND CULTURE.

Theſe trees may be propagated by ſeeds, procured from places where they grow naturally, and put into the ground as ſoon as they arrive, for they always lie a year before they come up. Sow them in pots filled with light loamy earth, placing them where they may have only the morning ſun; during the firſt ſummer the pots muſt be kept clean from weeds, and in dry weather duly watered. In autumn plunge the pots into the ground, and if the winter ſhould prove ſevere, cover them with old tan, peas-haulm, or other light covering. The following ſpring plunge them into a moderate hot-bed, hooped over and covered with mats; obſerving conſtantly to keep the earth moiſt. This will bring up the plants by the beginning of may. They muſt be gradually hardened to bear the open air: during the following ſummer plunge the pots again into an eaſt border, and duly water them in dry weather. In autumn remove them into a frame, where they may be ſcreened from froſt; but in mild weather expoſed to the open air. The ſpring following, before the plants begin to ſhoot, part them carefully, and plant each in a ſmall pot filled with loamy earth, and if they are plunged into a moderate hot-bed, it will forward their putting out new roots: then

[1] Marſhall. [2] Hort. kew. [3] Travels, p. 17.

they may be plunged in an eaſt border, and in winter ſheltered again under a frame. The ſpring following, ſuch plants as have made the greateſt progreſs, may be planted in a loamy ſoil, in a ſheltered ſituation, where they will endure the cold of this climate, but unleſs the ground is moiſt they make very little progreſs.

O.

OAK. See *Quercus*.

[OAK of Cappadocia or Jeruſalem. See *Chenopodium*.

OAT and OAT-GRASS. See *Avena*.]

OBELISCOTHECA. See *Rudbeckia*.

[OBIONE. Gærtn. See *Atriplex ſibirica*.

OBOLARIA. (*From* Obolus, *a ſmall coin. The braſteal leaves bring round like a piece of money.*)

Lin. gen. n. 778. *Reich. n.* 840. *Schreb. n.* 1044. *Juſſ.* 101.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ. Pediculares*, Juſſ.

GENERIC CHARACTER.

CAL. none, except two bractes.

COR. one-petalled, unequal: *tube* bell-ſhaped, ventricoſe, pervious: *border* four-cleft, ſpreading a little; *segments* ſhorter than the tube, bifid, a little unequally laciniated.

STAM. *Filaments* four, awl-ſhaped, from the ſlits of the corolla, the neareſt a little longer. *Anthers* ſmall.

PIST. *Germ* ovate, compreſſed. *Style* ſubcylindric, the length of the ſtamens. *Stigma* bifid, thickiſh, permanent.

PER. *Capſule* ſubovate, compreſſed, ventricoſe, one-celled, two-valved, with the partition contrary.

SEEDS numerous, ſmall like meal.

ESSENTIAL CHARACTER.

Cal. two-leaved (or none except two bractes.) *Cor.* four-cleft, bell-ſhaped. *Stam.* from the ſlits of the corolla. *Capſ.* one-celled, two-valved, many-ſeeded.

SPECIES.

1. Obolaria virginica.

Lin. ſpec. 881. *Juſſ.* 573. *Reich.* 3. 183. *hort. cliff.* 323. *Gron. virg.* 74. *Mor. hiſt.* 3. 504. *ſ.* 12. *t.* 16. *f.* 33. *Pluk. phyt. t.* 209. *f.* 6. *Raii ſuppl.* 595. (Orobanche).

DESCRIPTION, *&c.*

Stem ſimple. Leaves oppoſite, the upper ones purple on the outſide. Flowers in terminating ſpikes, cluſtered at the top, pale red. It has the habit of Orobanche, and is allied to that genus.—Native of Virginia*.

OBOLARIA. See *Linnæa*.

OCHNA (*of Pliny.* Οχνη *of Athenæus.* Οχνη *of Homer. From* ωχνω, *ſtrangulare.*)

Lin. gen. n. 657. *Reich. n.* 714. *Schreb. n.* 891. *Fl. zeyl. n.* 209. *Gærtn. t.* 70. *Juſſ.* 282. Lacathe. *Soland.*

Claſſ. 13. 1. Polyandria Monogynia.

Nat. order of *Coadunatæ. Magnoliæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, inferior, coriaceous, permanent, five-parted: *parts* ovate, blunt, ſpreading: (rather five-leaved.)

COR. *Petals* five to twelve, caducous.

STAM. *Filaments* many, ſhort. *Anthers* roundiſh.

PIST. *Germ* ovate, angular, five-cleft. *Style* angular, erect, permanent. *Stigma* ſimple.

PER. none.

SEEDS. *Nuts* five, ovate, erect, compreſſed a little on the outſide, ſomewhat convex, ſlightly excavated within, blunt; with a thin ſhell. *Receptacle* very large, fleſhy, depreſſed, five-cornered: corners protuberant, rounded, keeled at top, to each of which is faſtened a nut, with a triangular-rounded ſcar: ribs five, between the corners of the receptacle, running down from the vertex to the baſe, and raiſed.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* five-petalled. *Berries* one-ſeeded, faſtened to a large roundiſh receptacle. (*Cor.* none: *gen.* ſeven to twelve-petalled. *O. ſquarroſa. Nuts* five. *gen. Berr.* two or three, placed on an enlarged, fleſhy receptacle, one-celled. *G.*)

SPECIES.

1. Ochna ſquarroſa.

Lin. ſpec. 731. *Juſſ.* 492. *Reich.* 2. 582. *fl. zeyl. n.* 209. *Roxb. corom.* 62. *t.* 89.

Japotapita cinnamomi folio, floribus ſpicatis. *Burm. zeyl.* 123. *t.* 56.

β. Arbor africana, ſubrotundo folio margine denticulis aſpero, flor. pentapetalis atropurpureis. *Pluk. phyt. t.* 263. *f.* 1, 2.

Racemes lateral.

2. Ochna Jabotapita.

Lin. ſpec. 732. *Juſſ.* 492. *Reich.* 2. 582. *Gærtn. fruct.* 1. 341.

Jabotapita. *Marggr. braſ.* 101. *Raii hiſt.* 1632.—pyramidato flore luteo, fructu rubro. *Plum. amer.* 42. *ic.* 153.

Racemes terminating.

3. Ochna parvifolia.

Vahl ſymb. 1. 33.

Euonymus inermis, fol. alternis ovatis ſerrulatis. *Forſt. deſcr.* 204.

Peduncles one-flowered.

DESCRIPTIONS, *&c.*

Theſe are ſmall trees, with alternate ſtipulaceous leaves, and the flowers in terminating ſpikes or panicles. Commerſon has mentioned two ſpecies, natives of Madagaſcar, under the name of *Sophiſtoques*, one many-ſtamened with long permanent filaments and ſhort anthers, ten-fruited, with the heart of the ſeeds ſtraight, the other ten-ſtamened with long erect ſubſeſſile caducous anthers and five-fruited; both one-ſtyled and reſembling this genus[a].

1. This is a ſmall tree. Leaves alternate, oblong, acute, finely ſerrate, ſmooth, on ſhort petioles, the youngeſt remarkably coloured with purple, four or five inches long and two broad. Panicles faſcicle-like, from the naked branchlets, below the young leaves. Bractes ſmall, falling. Flowers large, yellow, inodorous. Calyx five-leaved: leaflets oblong, as large as the petals, but not coloured, permanent. Petals from ſeven to twelve, generally nine or ten, oblong, falling. Filaments ſhort, permanent. Anthers linear, erect, falling. Germs generally as many as there are petals, ſurrounding a half round receptacle. Style from the apex of the receptacle, rather longer than the ſtamens, permanent. Stigma perforated. Pericarp none. Receptacle half-round, coloured with a ridge for each ſeed or petal, that was in the corolla: on each ſits an oblong ovate ſeed, as in Quaſſia, about the ſize of a large kidney-bean, ſmooth, when ripe black. All the ſeeds rarely come to perfection[b].

Linnæus remarks, that the Eaſt Indian plant is certainly the ſame with Plukenet's, though the leaves of this are more ovate, and thoſe of the former ovate-lanceolate, very finely and acutely ſerrate. He alſo remarks a ſingularity in this plant, whence it derives the trivial name, that the racemes periſh below the leaves, whence the branchlets become very ſquarroſe, after the flowers and pedunckes are fallen. In his ſpecimen the petals had fallen off, and in Schreber's edition of the genera it is deſcribed as having no corolla.

Native of the Eaſt Indies and Africa. In the Circar mountains, it flowers about the beginning of the hot ſeaſon, at which time the leaves begin to come out, having caſt them during the cold ſeaſon[c].

In Ceylon it is called *Bukeeware*, and it is the *Yerra-jurvie* of the Tellingas.

[a] Juſſ. gen. [b] Roxburgh. [c] Idem.

2. This is a middle-sized tree, with a gray irregular bark, and a soft pliant wood. Leaves alternately oppofite, pale green. Flowers abundant on certain branchlets, yellow and very sweet[1].

Swartz, who joins it with his *nitida* (our Gomphia nitida), and places it in the class Decandria, obferves that the petals are three times as large as the calyx, and that the fruit is a drupe immerfed in the receptacle. In the generic character it is not confidered as a pericarp but a receptacle. Gærtner thus defcribes the fruit: — Berries one, two, or three, feldom more, rounded or ovate-globular, fubcoriaceous, thin, fmooth, black or red, one-celled. Common receptacle fleshy from the receptacle of the flower enlarged; fometimes fimply globular, fometimes having two or three rifings, according to the number of the berries: proper receptacle none. Seeds folitary, fubglobular, the fize of the cavity in the berry, pale, faftened to the bafe of the common receptacle.

Pifo fays, that on each pedicel of the raceme there is a berry, the fize of a cherry-ftone, triangular-conical, and that three or four oval, feffile berries are joined to thefe, of the fame fize, all black, like thofe of our Vaccinium Myrtillus or Whorts, of an aftringent tafte; and that they are not only eaten crude, but that an oil is expreffed from them, which is ufed in falads.

Native of South America.

3. This is a fhrub refembling O. fquarrofa except in the fize of the leaves and inflorefcence. Branches round, fmooth, with an afh-coloured dotted bark. Leaves only on the branchlets, petioled, oblong, ferrulate, quite entire at the bafe, veined, fhining, half an inch in length. Peduncles at the fides of the branchlets, folitary, gradually thickening upwards, purple, longer than the leaf[2].

Ochna. See *Gomphia*.

OCHROMA. (*From* ωχρωμα, *paleneſs.*)

Swartz prodr. 97. *Lin. gen. Schreb. n.* 1111. Bombax pyramidale. *Cavan. diſſ.* 5. 294. *t.* 153.

Claſſ. 16 2. Monadelphia Pentandria.

Nat. order of *Columniferæ*. *Malvaceæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* double. *Outer* three-leaved: *leaflets* lanceolate, caducous. *Inner* one-leafed, funnel-form, five-cleft.

Cor. *Petals* five, wedge-form, coriaceous.

Stam. *Filament* one, cylindric. *Anthers* five, large, linear, connate, creeping up and down.

Pist. *Germ* fuperior, oblong. *Style* filiform, covered with the cylinder of ftamens. *Stigmas* five, awl-fhaped, wide, contorted.

Per. *Capſule* coriaceous, fubcylindric, five-grooved, commonly ten-cornered, five-celled, five-valved: valves woolly within, rolled back at the edge; *partitions* kidney-form.

Seeds very many, oblong.

ESSENTIAL CHARACTER.

Cal. double: outer three-leaved. *Anthers* connate, anfractuofe. *Capſ.* five-celled, many-feeded.

SPECIES.

1. Ochroma Lagopus.

Swartz prodr. 98.

Bombax pyramidale. *Cavan. diſſ.* 5. 294. *t.* 153.

Hibiſcus. *Browne. jam.* 286. 10.

Goſſypium f. Xylon arboreum. *Plak. phyt. t.* 189. *f.* 2.—fructu oblongo & ſulcato—G. amplifſima arbor fr. obl. cylindraceo et ſulcato. *Plum. Mſs. v.* 4. *t.* 8. *Cavan.*

Huampo Americanorum.

DESCRIPTION, *&c.*

This is a very large tree, with divaricating branches. Wood white, tender, and fo light that it is ufed inſtead of cork to nets. Bark thick, fibrous, afh-coloured, varied with white fpots, and netted with rufeſcent wrinkles. Leaves more than a foot, fometimes above a foot and half in diameter, angular, on long petioles, above fmooth and dark green, underneath pale with rufeſcent hairs. Stipules ovate-lanceolate, ferruginous, deciduous. Flowers on the upper branchlets, on thick ſtraight peduncles. Calyx greenifh red, with the fegments or rather notches rounded, partly white, partly greenifh red. Petals white, fleſhy, reflex and convoluted. Capſule eight or ten inches long. Seeds very fmall, fmooth, fubovate, involved in a very ſoft fine ruſtous down[3].

Native of America, frequent in the Antilles. Browne fays it abounds on the Banks of Spaniſh Town River, in Jamaica. Deſportes, in his Plantes utiles de S. Domingue, vol. 3. p. 16, 17. fays that the beauty of the Engliſh Beavors is chiefly to be aſcribed to the down in the fruit of this tree.

OCHROXYLUM (ωχρος ξυλον: *pale wood.*)

Lin. gen. Schreb. n. 508. (Curtiſia.) *p.* 826. (Ochroxylum.)

Claſſ. 5. 3. Pentandria Trigynia.

GENERIC CHARACTER.

Cal. *Perianth* five-cleft, very ſmall, permanent: *ſegments* ovate, acute, ſpreading a little.

Cor. *Petals* five, ovate, reflex, bluntiſh, excavated below the tip, thickiſh with a thinner margin.

Nectary an annular gland, ſubtrilobate, fleſhy.

Stam. *Filaments* five, awl-ſhaped, flattiſh below, erect, a little longer than the coroſla. *Anthers* roundiſh, incumbent.

Pist. *Germs* three, placed on the nectary, outwardly gibbous. *Styles* ſhort. *Stigmas* ſimple.

Per. *Capſules?* three, approximating, ſubglobular, inwardly compreſſed, placed on the lobes of the nectary, now become larger and three-lobed, one-celled, opening on the inſide?

Seeds two, convex on one ſide, compreſſed and angular on the other.

ESSENTIAL CHARACTER.

Cal. five-cleft. *Pet. five. Nect.* an annular three-lobed gland. *Capſ.?* three, approximating, one-celled, two-feeded.]

Ochrus. See *Piſum.*

OCIMUM (*of Pliny:* ωκιμον *of Hippocrates, Theophraſtus and Dioſcorides:* ωκυον, *cito* (germinans). *So named from its being ſuppoſed to germinate haſtily.—Others derive it* απο του οζειν, *from its ſtrong ſmell. Some diſtinguiſh* Ocymum *from* Ocimum; *making the former a plant ſown for fodder, the latter an herb remarkable for its ſweet ſmell.*)

Lin. gen. n. 732. *Reich. n.* 790. *Schreb. n.* 986. *Tournef. t.* 96. *Juſſ.* 116.

Claſſ. 14. 1. Didynamia Gymnoſpermia.

Nat. order of *Verticillatæ. Labiatæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, two-lipped, very ſhort, permanent: *upper lip* flat, orbiculate, wider, ascending: *lower lip* four-cleft, acute, converging.

Cor. one-petalled, ringent, refupine: *tube* very ſhort, ſpreading; *one lip* turned upwards, wider, half-four-cleft, blunt, equal: *the other lip* turned downwards, narrower, entire, ſerrate, longer.

Stam. *Filaments* four, declined; two a little longer, and two putting forth a reflex proceſs at the baſe. *Anthers* half-mooned.

Pist. *Germ* four-parted. *Style* filiform, ſituation and length of the ſtamens. *Stigma* bifid.

Per. none. *Calyx* cloſed, cheriſhing the ſeeds.

Seeds four, ovate.

Obs. *The flexure of the ſtamens ſhows that it is the upper lip of the petal, which is turned downwards, and the lower which is turned upwards. The eſſential character conſiſts in the reflex proceſs of the two filaments.*

ESSENTIAL CHARACTER.

Cal. with the upper lip, orbiculate, the lower four-cleft. *Cor.* refupine, with one lip four-cleft, the other undivided. *Filam.* the two outer putting forth a reflex proceſs at the baſe.

SPECIES.

[1. Ocimum thyrſiflorum. *Thyrſe-flowered Baſil.*

Lin. ſyſt. 545. *Reich.* 3. 92. *mant.* 84. *Murr. in comm. gott.* 1777. *p.* 47. *t.* 5. *Jacqu. hort.* 3. *t.* 72.

Flowers panicle-faſcicled, ſtem very much branched.

[1] Pifo. [2] Vahl. [3] Cavanilles.

2. Ocimum monachorum. *Monk's Basil.*
Lin. syst. 545. *Reich.* 3. 92. *mant.* 85.
O. caryophyllatum monachorum. *Bauh. hist.* 3. 260.
Stamens toothed, the uppermost ones bearded at the base.
3. Ocimum gratissimum. *Shrubby Basil.*
Lin. spec. 832. *syst.* 545. *Reich.* 3. 93. *mant.* 414. *Lour. cochinch.* 369.
O. zeylanicum perenne odoratissimum latifolium. *Burm. zeyl.* 174. *t.* 80. *f.* 1.
Stem suffruticose, leaves lanceolate-ovate, racemes round.
4. Ocimum album. *White Basil.*
Lin. syst. 545. *Reich.* 3. 93. *mant.* 85.
Leaves ovate, blunt, whorls of the racemes approximating, the mature ones four-cornered, corollas crenate.
5. Ocimum verticillatum. *Whorled Basil.*
Lin. syst. 545. *suppl.* 276.
Leaves ovate, blunt, raceme elongated naked, flowers whorled in fours pedunculed.
6. Ocimum Basilicum. *Common Sweet Basil.*
Lin. spec. 833. *Reich.* 3. 93. *hort. cliff.* 315. *upf.* 168. *mat. med.* 154. *Lour. cochinch.* 370. *Knipb. cent.* 4. *n.* 56. *Regn. bot.*
O. caryophyllatum majus. *Bauh. pin.* 226. *Mor. hist.* 3. 406. *f.* 11. *t.* 20. *f.* 1.
Ocymum. *Cower. epit.* 308. *Sabb. hort.* 3. *t.* 84. *Blackw. t.* 104.
O. magnum. *Bauh. hist. Ger.* 547. 1. *emac.* 673. 1. *Raii hist.* 541.
O. car. maximum. *Park. theat.* 19. 3.
β. O. medium. *Mill. dict. n.* 3.
O. vulgatius. *Bauh. pin.* 226. *Raii hist.* 541. *Mor.* 11. 20. 9.
O. medium vulg. & nigrum. *Bauh. hist.* 3. 247.
O. vulgare majus. *Park. theat.* 18. 1.
O. medium citratum. *Ger.* 547. 2. *emac.* 673. 2.
γ. O. latifolium maculatum vel crispum. *Bauh. pin.* 225.
δ. O. viride foliis bullatis. *Bauh. pin.* 225.
Leaves ovate smooth, calyxes villate.
7. Ocimum minimum. *Bush Basil.*
Lin. spec. 833. *Reich.* 3. 93. *hort. cliff.* 315. *upf.* 169. *Lour. cochinch.* 370. *Bank. hist. Bauh. pin.* 226. *Raii hist.* 541. *Mor.* 11. 20. 17. *Sabb. hort.* 3. *t.* 85.
O. vulgare minus. *Park. theat.* 18. 1.
O. minus caryophyllatum. *Ger.* 547. *emac.* 673. 3.
Leaves ovate quite entire.
[8. Ocimum capitellatum.
Lin. syst. 545. *suppl.* 276.
Kofaria. *Forsk. arab.* 164. *n.* 34. *t.* 20.
Leaves ovate, flowers aggregate, petioles lateral.
9. Ocimum sanctum. *Purple-stalked Basil* or *Sacred Herb.*
Lin. syst. 545. *Reich.* 3. 94. *mant.* 85.
Leaves sometimes oblong blunt serrate-waved, stem rough-haired, bractles cordate.]
10. Ocimum americanum. *American Basil.*
Lin. spec. 833. *syst.* 545. *Reich.* 3. 94. *amoen.* 4. 276. *Jacqu. hort.* 3. 45. *t.* 86.
Leaves sublanceolate acuminate subserrate, racemes round, stem subherbaceous.
11. Ocimum campechianum. *Campeachy Basil.*
Mill. dict. n. 5.
O. camp. odoratissimum. *Houst. MSS.*
Leaves lanceolate hoary underneath, petioles very long villose, flowers pedunculed.
[12. Ocimum tenuiflorum. *Slender-spiked Basil.*
Lin. spec. 833. *Reich.* 3. 94. *Pluk. phyt. t.* 208. *f.* 4. *Burm. zeyl.* 158. *t.* 70. *f.* 2. (Mentha).
Basilicum agreste. *Rumph. amb.* 5. *t.* 92. *f.* 2.
Leaves ovate-oblong serrate, bractles cordate reflex concave, spikes filiform.
13. Ocimum polystachyon. *Many-spiked Basil.*
Lin. syst. 545. *Reich.* 3. 95. *mant.* 367. *Murr. in comm. gott.* 1772. *p.* 71. *t.* 3.
Corollas four-cleft, racemes leafless nodding at top.
14. Ocimum serpyllifolium. *Wild Thyme-leaved Basil.*
Vahl symb. 1. 47. *Forsk. descr.* 110.
O. africanum. *Lour. cochinch.* 370. *ed. Willd.* 449?
Leaves linear-lanceolate quite entire, genitals very long.
15. Ocimum grandiflorum. *Great-flowered Basil.*
L'Herit. stirp. nov. 89. *t.* 43.
O. flameum foliis. *Forsk. descr.* 108.
O. abyssinicum. *Pizz. reg. app. tom.* 3. *p.* 70.
Stem shrubby, leaves ovate serrate, genitals very long.
16. Ocimum mentholdes. *Mint-leaved Basil.*
Lin. spec. 834. *Reich.* 3. 95. *fl. zeyl. n.* 229.
Mentha zeylanica, angustissimo folio dentato. *Raii suppl.* 284.
Leaves linear-lanceolate-serrate.
17. Ocimum molle. *Heart-leaved Basil.*
Ait. hort. kew. 2. 322.
Leaves ovate cordate acute serrate wrinkled, sinuses closed, bractes roundish-cuneiform.
18. Ocimum scutellarioides.
Lin. spec. 834. *syst.* 546. *Reich.* 3. 95. *mant.* 84. *Forsk. flor. ægypt. n.* 233.
Majorana rubra. *Rumph. amb.* 5. 291. *t.* 101.
Corollas sickle-shaped, peduncls branched.
19. Ocimum prostratum. *Prostrate Basil.*
Lin. syst. 546. *Reich.* 3. 96. *mant.* 566.
Stems prostrate, leaves elliptic marked with lines.
20. Ocimum acutum. *Sharp-leaved Basil.*
Lin. syst. 546. *Thunb. jap.* 248.
Racemes filiform, leaves ovate acuminate serrate, bractles rough-haired.
21. Ocimum crispum. *Curl-leaved Basil.*
Lin. syst. 546. *Thunb. jap.* 248. *Kæmpf. amoen.* 5. 784.
Racemes terminating, leaves ovate serrate curled, calyxes bristled.
22. Ocimum rugosum. *Wrinkled Basil.*
Lin. syst. 546. *Thunb. jap.* 249.
Racemes terminating, leaves ovate acute serrate wrinkled underneath.
23. Ocimum scabrum. *Rugged Basil.*
Thunb. in Linn. transf. 2. 338.
O. punctatum. *Thunb. jap.* 249.
Racemes simple erect, leaves ovate dotted underneath.
24. Ocimum inflexum.
Lin. syst. 546. *Thunb. jap.* 249.
Panicle terminating racemed, stem and branches flexuose.
25. Ocimum virgatum.
Lin. syst. 546. *Thunb. jap.* 250.
Racemes whorled red-like, leaves oblong serrate.

DESCRIPTIONS, &c.

These are either herbs or undershrubs, having a strong sweet smell. Their flowers are in whorls forming a loose spike, terminating and axillary. They have square stalks and opposite leaves, as common with the other verticillate plants: and are distinguished by having the corolla turned upside-down, and a process at the base of the two shorter filaments[a].

1. Stem erect, woody, a foot and half high, the whole subdivided into branches, brachiate or panicled with round branchlets, channelled on both sides. Leaves petioled, elliptic-lanceolate, green on both sides, naked, slightly serrate, quite entire at the base, scarcely rugged at the keel, acuminate. Panicles of the branches terminating, brachiate, close or cluttered, scarcely longer than the leaves, from whorled purple branches. Bractes lanceolate, purple, with the upper lip ovate. Corollas purple, pale on the outside, with the lower lip white. Stament white. Pistils purple. It differs from the rest in being more branched like a shrub, in the leaves being green and more lasting, with the smell of Rue, and the flowers fascicled in a thyrse.

Native of the East Indies[b].

2. Stem erect, a foot high, roundish, somewhat hairy, with the branches commonly superaxillary. Leaves petioled, ovate, blunnish, naked, serrate, scarcely ciliate. Racemes with six-flowered whorls. Upper lip of the calyx heart-shaped, with three streaks. Bractes heart-shaped, caducous. Corollas smaller, white with the lower lip purple. Filaments purple, the length of the corolla, without teeth at their base, but instead of them the alternate ones are villose at the base. This is an annual plant, but its native place is unknown[c].

3. Stem suffruticose, hard and perennial at the base, stiff and straight. Leaves with the rib hoary-tomentose above. Spikes before flowering four-cornered,

[a] Juss. gen. [b] Linn. mant. [c] Idem.

with

with subulate-prominent bractes. Bractes cordate, acute. Flowers small. Corollas white with yellow anthers [1].

According to Loureiro it is cultivated in Cochinchina for the kitchen; the ſtem is five feet high, four-grooved, ſmooth, white and branched. Leaves ſubſerrate, dotted underneath, lanuginoſe above, pale, ſmelling very ſtrong, petioled. Corolla white with coloured calyxes, in ſpiked racemes lateral and terminating.

Native of the Eaſt Indies. Cultivated in 1752, by Mr. Miller [2].

4. Stem a foot high, greeniſh white, woody at the baſe. Racemes few. Leaves broader and thicker than in the other ſorts, concave, bluntly ſerrate. Bractes lanceolate, cordate or ovate, acute, before the flowers come out longer than the flower, and forming a quadrangular ſpike. Corollas large, white, crenate, with the upper lip four-cleft, but the lateral ſegments more divaricating. Filaments white.

It is an annual plant, native of the Eaſt Indies, and the iſland of Java [3].

5. Stem a foot high, the whole even, ſhorter than the raceme, aſcending. Oppoſitions of the leaves five or ſix, even, with two ſerratures on each ſide, on petioles of the ſame length with themſelves. Raceme erect, longer than the herb, filiform. Flowers in whorls like the Hottonia: pedicels capillary, almoſt the length of the flowers. Bractes to each pedicel two, ovate, minute, even. Calyx bell-ſhaped, acute, five-toothed, almoſt equal, without any wider incumbent tooth. Corollas reflupine, curved, with the lip wider and reflex. Two of the ſtamens the length of the corolla, and two ſhorter [4].

Native of the Cape of Good Hope [5].

6. Stem ſuffruticoſe, three feet high, erect, round, tomentoſe; with ſtraight, aſcending branches. Leaves ſomewhat acute, ſerrate, pubeſcent, brownith-red, waved, petioled, ſmelling like cloves. Flowers white, ſmall, in long, upright, terminating ſpiked racemes. Calyxes hairy, bracted, peduncled [6].

The Great Baſil riſes with a branching ſtalk a foot and half high. Leaves large. Stalk hairy and four-cornered, terminated by a whorled ſpike of flowers, five or ſix inches long. Branches terminated by ſhort ſpikes of the ſame ſort. The whole plant has a ſtrong ſcent of Cloves. Of this there are the following varieties:

1. Purple fringe-leaved.
2. Green fringe-leaved.
3. Great with ſtudded leaves.
4. Large-leaved Baſil.

β. The Common Baſil, uſed in medicine, and alſo in the kitchen, eſpecially in French cookery, riſes about ten inches high, ſending out oppoſite, four-cornered branches from the very bottom. Leaves ovate-lanceolate, ending in acute points, indented on their edges. The whole plant is hairy, and has a ſtrong ſcent of Cloves, too powerful for moſt perſons, but to ſome very agreeable.

The varieties are:

1. Common Baſil, with very dark green leaves and violet-coloured flowers.
2. Curled-leaved Baſil, with ſhort ſpikes of flowers.
3. Narrow-leaved Baſil, ſmelling like Fennel.
4. Middle Baſil with a ſcent of Citron.
5. Baſil with ſtudded leaves.
6. Baſil with leaves of three colours.

There are many other varieties, differing in the ſize, ſhape, odour, and colour of the leaves, [in Europe, but eſpecially in the Eaſt; where Baſil is not only uſed in cookery, but the herb is accounted good in the head-ach, and wandering rheumatic pains; and the ſeeds are reckoned very efficacious againſt the poiſon of ſerpents, both taken inwardly, and laid upon the wound [7].

It was cultivated by Gerarde, in 1596 [8].]

7. The Leaſt or Buſh Baſil is a low buſhy plant, ſeldom more than ſix inches high, branching from the bottom, and forming an orbicular head. Leaves ſmall, ſmooth, on ſhort foot-ſtalks. Flowers in whorls towards the top of the branches, ſmaller than thoſe of the preceding, and ſeldom ſucceeded by ripe ſeeds, in England. Varieties are:

1. Smalleſt Baſil with black purple leaves.
2. With variable leaves.

[Native of the Eaſt Indies. Cultivated by Gerarde in 1596. They are both annual plants, and flower in July and auguſt [9].

8. Stem oleraceous, bluntly-quadrangular, two-grooved, ſparingly branched, a foot high. Leaves bluntly ſerrate, ribbed, wrinkled, like thoſe of Lamium, ſmooth but not ſhining. Petioles gradually finiſhing in the leaf. Peduncles axillary, ſolitary, forming a head of aggregate flowers the ſize of a hazel nut. Common calyx from five to ten-leaved, the length of the flower. Proper perianths tubular, five-cleft, ſeldom four-cleft, equal. Corollas white, very ſmall, ſcarcely to be ſeen by the naked eye: tube ſlender, the length of the calyx: border four-cleft, the upper ſegment ſcarcely concave, bifid, when the whole is five-cleft, reflex. Native of China [10].

9. Stem a foot and half high, erect, brachiate, roundiſh, ſlightly channelled on each ſide, dark purple, muricated with tubercles having a white hair on them. Leaves ovate or ſomewhat oblong, bluntiſh, ſerrate, naked, hairy about the edge and on the nerves beneath, having purple veins on the under ſurface; the upper ones darker. Petioles rough-haired, dark purple. Racemes terminating, ſolitary, erect, dark purple. Bractes petioled, cordate, concave, reflex, deciduous, the length of the calyx, which is rough-haired above the gibbous baſe. Corolla bright purple, ſcarcely larger than the calyx. Filaments white. Anthers yelloviſh. It has ſcarcely any ſmell.

Native of the Eaſt Indies. This as well as the preceding is annual [11].—Introduced in 1758, by Hugh Duke of Northumberland. It flowers in ſeptember [12].

10. From a branched root, ſprings an upright ſtalk, bluntly four-cornered, ſmooth, ſomewhat woody at bottom perennial and browniſh, pale above with a tinge of green. Branches oppoſite, erect at an acute angle, ſomewhat villoſe towards the end. Leaves petioled, ſmooth, appearing dotted on both ſides when examined by a glaſs. Peduncles terminating, erect, long, ſomewhat villoſe, with ſeveral ſix-flowered whorls. Under theſe lanceolate, oppoſite, ciliate bractes. The upper lip of the calyx quite entire. Corolla fleſh-coloured. The whole plant has a very grateful ſmell. Native of Martinico [13].]

11. This riſes with an upright ſtalk near two feet high, ſending out two or four branches towards the top. Leaves about three inches long, and one inch broad in the middle, leſſening at both ends to a point, on foot-ſtalks two inches in length. Flowers in whorled terminating ſpikes; each peduncle ſuſtaining three flowers, which are white, and about the ſame ſize with thoſe of common Baſil. The whole plant has a ſtrong aromatic odour. It grows naturally at Campeachy.

[12. Stem from one to two feet high, roundiſh, purple, brachiate, having ſpreading hairs ſcattered over it: branches ſhorter. Leaves bluntly ſerrate, ſoft, on long petioles. Spikes terminating, in threes, long, narrow, peduncled; with oppoſite, ſquooth bractes, cloſely reflex. Flowers three from each bracte, ſubſeſſile. Calyxes ſmooth, five-cleft, with the upper lip flat, larger, kidney-form, acute. Corolla ſmall, purple; upper lip four-cleft, lower ſimple. Two of the ſtamens appendiculed at the baſe. Style longer than the flower, bifid. The flowers are ſo ſmall as ſcarce to be viſible to the naked eye: they begin to open from the top of the ſpike.

Native of Malabar, and other parts of the Eaſt Indies [14].

13. Stem erect, two feet high, brachiate, four-cornered; the corners ſharp, rugged. Branches oppo-

[1] Linn. ſyſt. [2] Hort. kew from Mill. dict. ed. 6. n. 17. [3] Linn. mant. [4] Lin. ſuppl. [5] Retz. 5. 5. [6] Loureiro. [7] Idem. [8] Hort. kew. [9] Linn ſuppl. [10] Linn. mant. [11] Hort. kew. [12] Jacquin. [13] Linn. ſpec.

&c.

fite, very abundant, erect. Leaves ovate, blunt, grossly serrated, acute, marked with lines. Petioles the length of the leaves, four-cornered, somewhat tagged underneath. Racemes axillary, directed one way, long, erect except at the top, where they nod, especially during the night: flowers in whorls, five together. Calyx five-cleft, the upper segment cordate, the rest subfubulate. Corolla scarcely twice as long as the calyxes, white, four-cleft, like those of Mint, with a purple border, and the upper segment scarcely emarginate. Stamens declined, not longer than the corolla.—It cannot be a *Nepeta*, on account of the lower lip not being crenate; nor a *Mentha*, because the ftamens are declined; for this reaion it is an *Ocimum*, though there are no teeth to the filaments[b].

Native of the Eaft Indies, and perennial, as marked by Linnæus according to the Kew catalogue it is annual, and flowers in july and auguft. It was introduced by John Earl of Bute in 1783.

14. This is a very branching ſhrub; the branches divaricating, villoſe and hoary. Leaves lanceolate, a little narrower at the baſe, ſcarcely petioled, very finely villoſe, hoary, ſmall, like thoſe of wild Thyme. There are rudiments of leafy branchlets from all the axils, and hence the leaves appear to be faſcicled. Raceme terminating, erect, an inch and half long, compoſed of ſix-flowered whorls. Pedicels ſhort, placed on a callus. Bractes minute, ovate, acute, deciduous. Flowers bent down. Calyx half the length of the corolla, very finely villoſe; with the two lower teeth briſtle-ſhaped, the upper ones ovate. Filaments villoſe at the baſe, three times as long as the corolla. It is different from O. filamentoſum of Forſkahl: which ſee under the next ſpecies[c].

15. This is a fragrant undershrub, three feet in height. Stems diffuſed or almoſt erect, round, knotty, cloven, aſh-coloured. Branches oppoſite, ſpreading, ſomewhat four-cornered, with the outer bark lacerated. Shoots four-cornered, annulated, pubeſcent, green. Leaves decuſſately oppoſite, ſharp at both ends, entire at the baſe, papilloſe, almoſt naked, ſomewhat viſcid and rugoſe, concave or convex, ſpreading, having almoſt ſimple nerves; they are fragrant and permanent, from twenty-four to thirty lines in length, and from twelve to fifteen in breadth. Petioles ſpreading a little, four-ſided, compreſſed, rounded on one ſide, flat on the other, ſix times ſhorter than the leaf. Spikes terminating, erect, whorled, bracted, two inches long. Whorls ſix-flowered, the lower ones remote, the upper approximating. Bractes under the whorls oppoſite, ovate-lanceolate, acuminate, crenate, concave, erect, reflex at the tip, falling before the flower expands. Scars from the fallen bractes orbiculate, concave, margined, wide. Flowers oppoſite in threes, on ſhort peduncles, ſpreading a little, white tinged with very pale purple, fifteen lines long comprehending the ſtamens, which are twice as long as the corolla. Calyx ſomewhat bell-ſhaped, erect, ſtriated, villoſe, brownish: upper lip ſtraight, orbiculate, ſcarcely crenulate, ſtretching over the under lip at the ſides: under lip roundiſh, ſcarcely ſhorter, compreſſed laterally, concave, two-horned: the calyx is two lines in length. Corolla ſubvilloſe: tube twice as long as the calyx, prominent a little at top: upper lip larger, reflex, four-cleft, ſegments blunt, ſomewhat toothed, revolute, the two upper ones ſmaller: lower lip ſimple, ſhorter, ſtraight, oblong, concave, reflex at the ſides. Filaments ſcarcely declining under the lower lip, at firſt aſcending at the tip, afterwards revoluſe, purple; the two longer ones ſimple, ſtraight, faſtened to the tube of the corolla towards the top; the two ſhorter inſerted into the baſe of the corolla, converging towards the upper ſide of the tube, jointed where the tube is prominent, bent down at an angle, incraſſated and pubeſcent. Anthers ovate, compreſſed, two-celled, opening at the ſides, peltate, purple. Germ ſuperior, placed on a fleſhy body. Stigma biſid, acute, equal, reclining. Calyx hanging down, cloſed by the converging of the ſides of the lower lip, and thus performing the office of a pericarp. It is ſufficiently diſtinguiſhed by the largeneſs of the flowers, and the length of the ſtamens[d].

It was found by Forſkahl in Egypt, and was brought from Abyſſinia by Bruce, with the Bruceas, Plectranthus punctatus, and other ſcarce plants, before the year 1775. It flowers at the end of ſummer, but ſeldom perfects ſeeds.

16. Stem 2 foot high, upright, brachiate, four-cornered. Leaves ſubſeſſile, ſharply and deeply ſerrate towards the end, leſs ſo or very little towards the baſe. Spikes looſe, whorled, long, terminating the branches. Flowers each on their proper pedicels. Calyxes five-toothed, with the two lower teeth narrower: the two middle lobes of the upper lip of the corolla larger and ſharper. Filaments longer than the corolla, bent down[e].

Native of the iſland of Ceylon—and other parts of the Eaſt Indies. Introduced in 1783, by John Earl of Bute. It flowers in july[f].

17. This plant is annual, pubeſcent and ſweet-ſmelling. Stem thick, bluntly quadrangular. Leaves wrinkled, ſoft, deeply cordate; the lobes approximating, bent in; the ſerratures blunt and unequal: the petioles ſcarcely ſhorter than the leaves. Corollas whitiſh-violet: tube the length of the calyx: upper lip orbiculate, arched; lower four-lobed, or rather three-lobed, with the middle lobe biſid. Filaments ſimple.

Native of the Eaſt Indies, where it was found by John Gerard Koenig, M. D. Introduced in 1781, by Sir Joſeph Banks. It flowers in ſeptember and october[g].

18. Stem pubeſcent. Leaves ovate, petioled, bluntly ſerrate, the petioles, when tender, very tomentoſe. Raceme upright, long. Bractes cordate, ſeſſile, acuminate, even. Pedicels two on each ſide, many-flowered. Calyx minute: upper lip cordate; lower four-cleft, acute, ſlender, the two middle clefts longer. Tube of the corolla erect: border reflex, widening at the throat; upper lip erect, very ſhort, lower elongated, ſickle-ſhaped, involving the ſtamens and piſtil. It differs from its congeners in the flower ſo much, as to be almoſt of a diſtinct genus.

Native of the Eaſt Indies[h], and of the iſland of Tanna in the South Seas[i].

19. This is an annual plant, with the ſtem a ſpan high, erect, eight-grooved, with nodding hairs. Branches very much divaricated, next the root longer, proſtrate. Leaves petioled, ſomewhat hairy, acutely ſerrate, an inch long. Spikes terminating, ſolitary, oblong, formed of whorls. Upper ſegments of the calyx wider, blunter; the two lower ſmaller and more acute. Corolla very ſmall, blueiſh; with the upper lip four-cleft, equal, villoſe along the ſutures; the lower lip a little longer and concave. Stamens declined, ſcarcely marked with any tooth, the length of the corolla. Stigmas almoſt upright.

Native of the Eaſt Indies[k].

20. Stem upright, ſmooth, even. Leaves entire at bottom, ſmooth, pale underneath, veined, two inches wide, three inches long. Petiole a little ſhorter than the leaf, rough-haired underneath at the baſe. Racemes the length of a finger or more. Bractes ovate, acute, biſpid.

21. Stem upright, villoſe, branched. Branches decuſſated, reſembling the ſtem. Leaves acuminate, entire at bottom, ſmooth, purple, an inch long. Petiole the length of the leaf, looſe, villoſe. Racemes looſe, from a finger to a ſpan in length. Bractes oblong, acuminate, ſmooth and even. It is cultivated about Nagaſaki, and flowers there in october and november. An infuſion of the herb is preſcribed in colds and the rheumatiſm: and the Japoneſe eſteem the roots of black radiſhes, and turnep, and various fruits, of a deep red, with a decoction of it.

22. Stem grooved, very finely tomentoſe, two feet high and more. Branches oppoſite, reſembling the ſtem, ſpreading a little. Leaves acuminate, pale and

[a] L'Heritier. [b] Linn. ſyſt. [c] Forſt. herb.
[d] Idem. [e] Linn. mant. [f] Forſter.
[g] Linn. mant. [h] Linn. mant.

wrinkled

wrinkled underneath, the upper ones gradually smaller. Racemes contracted.

23. Stem upright, panicled, a foot high and more, that and the whole plant hairy and rugged. Leaves oblong, acute, serrate, dotted with minute pores underneath. Racemes terminating, a finger's length, with the flowers opposite. Bractes between the flowers, briftle-fhaped.

Thunberg had named this *punctatum* in his Flora Japonica, but altered it to *fcabrum*, there being a fpecies fo named, already in the Supplementum plantarum of the younger Linnæus, and in the fourteenth edition of the Syftema Vegetabilium.

In the former of thefe works it has this fpecific character—ftem round, leaves ovate wrinkled, flowers in fpikes; and is thus defcribed.—It has the appearance of Perilla minor, but the refupine flowers of Ocimum. Stem herbaceous, quite round, a foot high, divaricately branched below, fomewhat hifpid, with oblong, rufous dots. Leaves petioled, ferrate, marked with lines, hairy. Stipules none. Spikes terminating, peduncled. Bractes ovate. Flowers drooping. Corollas blue, the fize of thofe of Thyme: upper lip four-cleft, white; lower compreffed. Stamens as in Ocimum. It is an annual plant, and a native of Abyffinia. It was omitted in its proper place between *minimum* and *capitellatum*.

24. Stem herbaceous, both that and the branches upright and flexuofe, bent in at top, very finely tomentofe, a foot high. Leaves ovate, acute, ferrate, very finely fcabrous, half an inch long. Panicle racemed, contracted. The powder is ufed by the Japoneſe to burn incenſe to their idols.

25. Stem deeply grooved, very finely tomentofe, flexuofe-erect, branched. Branches refembling the ftem, the lower ones more remote, the upper ones roſtlike. Leaves obovate-oblong, very finely tomentofe, an inch long and more. Racemes at the ends of the branches, compofed of many fix-flowered whorls, a finger's length, upright. Near Nagaſaki, in Japoneſe Tſiguſa, or Milk-herb.

The fix laſt fpecies are natives of Japan and have fquare ſtalks[1].]

PROPAGATION AND CULTURE.

The plants, being moſt of them annual, are propagated from feeds, ſown in march, upon a moderate hot-bed, and tranſplanted into another hot-bed, where they muſt be watered and ſhaded until they have taken root; after which they muſt have plenty of air in mild weather, and muſt be watered frequently. In may they ſhould be taken up with a ball of earth to their roots, and planted out either in pots or borders; ſhading and watering them as before.

They may alſo be increaſed by cuttings taken off any time in may, and planted in a moderate hot-bed; obſerving to ſhade and water them during ten days. In three weeks time they will be fit to remove.

The ſeeds are uſually brought from the South of France or Italy every ſpring, becauſe ſome of the ſorts ſeldom ripen their ſeeds in this country in the open air. But ſeeds may be ſaved here, by placing the plants in an airy glaſs-caſe or ſtove in the autumn; ſupplying them with water, and letting them have free air in mild weather.

Some of the more tender ſorts (1. 3, 4. 7. 9. 11, 12, 13. 16. 17, 18, 19.) may be ſown on a hot-bed early in the ſpring, and when the plants come up, tranſplanted on another temperate hot-bed to bring them forward, and when they have obtained ſtrength, tranſplanted into ſeparate pots, and placed in the ſtove.

[The ſhrubby ſorts (3. 14, 15.) may be increaſed by cuttings, planted in a hot-bed.

OCOTEA. See *Poroſtema*.

OCTOBLEPHARIS. *Hedw. muſc.* 3. 15. *t.* 6. *Lin. gen. Schreb. n.* 1640. Bryi ſpecies. *Linn.*

CAPS. ovate. *Periſtome* ſimple: *teeth* eight, triangular.

MALES ſubdiſcoid, axillary, on the ſame plant.

[1] Thunberg.

OCTOPORA. *Hedw. muſc.* 2. *t.* 3—10. 23. *Lin. gen. Schreb. n.* 1661. Pezizæ *Hall.*

Flowers hemiſpheric bell-ſhaped or ſtarriſh, with the ſeminal membranes diſtinct, frequently joined by a knot of thready tow, and having eight ſeeds in them; whence the name.

OCULUS CHRISTI. See *Imula* and *Solenia*.

OCYMASTRUM. See *Lychnis*.

OCYMOIDES. See *Coroſſum, Lychnis, Saponaria, Silene*.

OCYMOPHYLLUM. See *Stavadia*.

OCYMUM. See *Polygonum* and *Scaeboy*.

——— frutescens. See *Perilla frutescens*.

ODOLLAM. See *Cerbera*.

ODONTITES. See *Bupleurum, Euphraſia, Lychnis*.

ODONTITIS. See *Euphraſia*.

ODORATA. See *Scandix*.

OEDERA. (*So named by Linnæus in memory of George Chriſtian Oeder, M. D. Reg. Prof. of Botany at Copenhagen, author of the firſt part of Flora Danica, continued by Muller and Vahl: alſo of* Elementa Botanicæ, 1764 and 1766.)

Lin. gen. Reich. n. 1082. *Schreb. n.* 1349. *Gaertn. t.* 172. *Juſſ.* 189.

Claſſ. 19. 5. Syngeneſia Polygamia Segregata.

Nat. order of *Compoſitæ Oppoſitifoliæ*. *Corymbiferæ*, Juſſ.

GENERIC CHARACTER.

CAL. *common* many-flowered, many-leaved, larger than the flowers, ſquarroſe: *leaflets* lanceolate, the lower ones larger, containing ſeveral partial *calyxes*.

Partial many-leaved: *leaflets* chaffy, lanceolate: equal to the florets.

COR. *common* radiate with many partial flowers.

Partial radiate, placed alſo in the diſk.

Proper of the Diſk hermaphrodite, funnel-form, five-cleft, erect:—of the Ray female, ligulate, lanceolate, the length of the common calyx.

STAM. in the Hermaphrodites, *Filaments* five, very ſhort. *Anther* cylindric.

PIST. in the Hermaphrodites, *Germ* oblong. *Style* filiform. *Stigmas* two, filiform, blunt.

In the Females, *Germ* oblong. *Style* filiform. *Stigmas* two, filiform, longer.

PER. none. *Calyx* unchanged.

SEED in the Hermaphrodites oblong; crowned with very many, acute ſhort *chaffs*.

In the Females oblong, crowned alſo with very many chaffs.

REC. *Common* chaffy: *Partial* with linear, deciduous chaffs.

ESSENTIAL CHARACTER.

Calyxes many-flowered. *Corollets* tubular hermaphrodite, with one or two female ligulate florets. *Recept.* chaffy. *Down* of ſeveral chaffs.

SPECIES.

1. Oedera proliſera.
Lin. ſyſt. 796. *Reich.* 3. 944. *ſuppl.* 391. *mant.* 291. *Gaertn. fruct.* 2. 464.
Buphthalmum capenſe. *Lin. ſpec.* 1274. *amoen.* 6. 104. *Berg. cap.* 297.
Leaves lanceolate oppoſite ciliate ſmooth on both ſides.

2. Oedera aliena.
Lin. ſyſt. 796. *ſuppl.* 390.
Leaves linear tomentoſe underneath.

DESCRIPTIONS, &c.

1. Stem ſhrubby, compound, with aſcending branches, covered below with ſcars from fallen leaves, above with green leaves at the ends of the branches. Leaves oppoſite, ſeſſile, narrow, acute, channelled. Calyxes terminating, ſolitary, ſeſſile, with lanceolate leaflets. Ray of the corolla the length of the diſk [a].

Common calyx inverſely conical, imbricated with lanceolate ſpreading and recurved ſcales, ciliate with white lanugo. The partial calyxes contain about fifteen florets, are ſubcylindric, and have many leaflets in a ſingle row; leaflets ſcarioſe, oblong, widening upwards, acuminate, ſhining. Florets in the diſk numerous; in the ray by twos or threes in the outer partial calyxes, the ligulate petal oblong, quite entire. Both florets are fertile. Common receptacle flat, wide,

[a] Linn. amoen.

with linear scattered chaffs: partial receptacle narrow, with linear deciduous chaffs, somewhat shorter than their calyx. Seeds oblong, compressed, obsoletely striated, smooth, bay. Pappus or crown chaffy, many-leaved; leaflets linear-acuminate, shorter than a third part of the seed".

2. This plant has the appearance of Spathelina or Gnaphalium, with the flowers of Calendula, and its genus is yet doubtful. It is an undershrub, not much branched, white-tomentose. Leaves alternate, like those of Rosemary, acute, with one or two sharp teeth at the edge. Flowers terminating, solitary, sessile, the size of Calendula, yellow. Corollets of the ray ligulate, three-toothed, marked with lines, hermaphrodite. Anther pale. Style saffron-coloured, standing out. Stigmas two. Seeds woolly, white, crowned with very many yellow bristles.—Both are natives of the Cape of Good Hope".

OEDERIA. See *Dracæna* and *Lobelia*.]

OENANTHE. (*From* Οἶνος, *the Vine, and* Ἄνθος, *a Flower.*—Oenanthe *of Pliny.* Οἰνάνθη *of Theophrastus and Dioscorides.*)

Lin. gen. n. 352. *Reich. n.* 382. *Schreb. n.* 484. *Tournef. t.* 166. *Juss.* 221. *Gærtn. t.* 22.

Class. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ* or *Umbelliferæ*.

GENERIC CHARACTER.

CAL. *Umbel universal* with fewer rays: *partial* heaped with very many rays, but very short, insomuch that there are often none.

Universal involucre many-leaved, simple, shorter than the umbel: *partial* many-leaved, small.

Proper Perianth five-toothed, awl-shaped, permanent.

COR. *universal* difform, rayed. Florets of the ray abortive.

Proper of the disk hermaphrodite, with five, inflex-cordate, almost equal Petals.

Proper of the ray male, with five, very large, unequal, inflex-bifid Petals.

STAM. *Filaments* five, simple. *Anthers* roundish.

PIST. *Germ* inferior. *Styles* two, awl-shaped, permanent. *Stigmas* blunt.

PER. none. *Fruit* subovate, crowned with the perianth and pistil, biparsile.

SEEDS two, subovate, on one side convex and striated, on the other flat, toothed at the top.

OBS. *The Perianth is more manifest in this genus than in the other umbellate plants.*

ESSENTIAL CHARACTER.

Floreta difform: in the disk sessile, barren. *Fruit* crowned with the calyx and pistil.

SPECIES.

1. Oenanthe fistulosa. *Common Water-Dropwort.*
Lin. spec. 365. *fil.* 285. *Reich.* 1. 699. *hort. cliff.* 99. *fl. suec. n.* 250. *Gærtn. fruct.* 1. 97. *Hudf. angl.* 121. *Wither. arr. ed.* 3. 301. *Engl. bot.* 363. *Lightf. scot.* 161. *Relh. cant. n.* 228. *Sibth. oxon. n.* 301. *Hall. helv. n.* 755. *Neck. gallob.* 150. *Pollich pal. n.* 290. *Villars dauph.* 2. 620. *Krock. sil. n.* 439. *Crantz. austr.* 201. *Knph. cent.* 5. *n.* 60. *Fl. dan.* 846.
Oenanthe. *Cæsalp. epit.* 611. *fig. ext. Riv. pent. t.* 66.
Oe. aquatica. *Bauh. pin.* 162. *Rai syn.* 210. *hist.* 441. *Petiv. brit. t.* 25. *f.* 5.
Oe. f. Filipendula aquat. *Bauh. hist.* 3. 2. 192.
Oe. palustris f. aquatica. *Park. theat.* 895. 7.—item aquat. major. 1233. 1.
Filipendula aquatica. *Ger.* 902. 5. *emac.* 1060.
Stoloniferous, stem-leaves pinnate filiform fistular.

[2. Oenanthe peucedanifolia. *Sulphurwort-leaved Water-Dropwort.*
Pollich pal. n. 292. *t.* 3. *Engl. bot.* 348. *Wither. arr. ed.* 3. 302. *Sibth. oxon. n.* 302. *Hall. helv. n.* 756.
Oe. aquatica minor. *Park. theat.* 1233. 2.—item, juncoides minima. 895. 9. *Rai hist.* 441. 2.
Oe. aquat. trifora, caulibus fistulosis. *Mor. hist.* 3. 289. *f.* 9. *t.* 7. *f.* 8. *Rai syn.* 210. *Petiv. brit. t.* 25. *f.* 6.
Juncus odoratus aquatilis. *Dod. pempt.* 590.

All the leaves linear, root-leaves bipinnate, stem-leaves pinnate, universal involucre none, tubers of the root ovate solitary.

3. Oenanthe crocata. *Hemlock Water-Dropwort.*
Lin. spec. 365. *fil.* 286. *Reich.* 1. 699. *hort. cliff.* 99. *fl. suec. n.* 251. *Gærtn. fruct.* 1. 96. *Hudf. angl.* 121. *Wither. arr. ed.* 3. 302. *Lightf. scot.* 162. *Sibth. oxon. n.* 303. *Jacqu. hort.* 3. 32. *t.* 55. *Villars dauph.* 3. 621. *Blackw. t.* 575. *Plenck. ic.* 226.
Oe. chærophylli foliis. *Bauh. pin* 162. *Mor. hist.* 3. *f.* 9. *t.* 7. *f.* 2.—tertia. *Matth.* 629.
Oe. Cicuta facie Lobelii. *Adv.* 326. 2. *ic.* 1. 730. 2. *Park. theat.* 894. 6. *Rail hist.* 441. *fyn.* 210. *Petiv. brit. t.* 25. *f.* 7.
Oe. succo virofo, Cicutæ facie Lobelii. *Bauh. hist.* 3. 2. 193. 2. *Phyt. trans.* 1747. 235. *t.* 3. *obr.* 10. 764. *f.* 134. *Mor. umb.* 19.
Filipendula Cicutæ facie. *Ger.* 901. 4. *descr.*—*emac.* 1059. 4.
Apium sylvestre f. Thysselinum. *Dod. pempt.* 687.

All the leaves many-cleft, blunt, nearly equal.

4. Oenanthe prolifera. *Proliferous Water-Dropwort.*
Lin. spec. 365. *fil.* 286. *Reich.* 1. 699. *hort. upf.* 63. *vir. cliff.* 24. *hort. cliff.* 99. *Jacqu. hort.* 3. 35. *t.* 62.
Oe. prolifera apula. *Bauh. pin.* 163. *Mor. hist.* 3. 289. *f.* 9. *t.* 7. *f.* 5.
Oe. cretica prolifera. *Park. theat.* 894. 4. *Rai hist.* 442.

Marginal peduncles of the umbels longer branched male.

5. Oenanthe globulosa. *Globular-headed Water-Dropwort.*
Lin. spec. 365. *fil.* 286. *Reich.* 1. 700. *hort. cliff.* 99. *Gouan illustr.* 18. *t.* 9. *Gærtn. fruct.* 1. 97.
Oe. lusitanica, semine crassiore globoso. *Tourn. inst.* 313.

Fruits globular.

6. Oenanthe pimpinelloides. *Parsley Water-Dropwort.*
Lin. spec. 365. *fil.* 286. *Reich.* 1. 700. *hort. cliff.* 99. *Gærtn. fruct.* 1. 97. *Hudf. angl.* 121. *Wither. arr.* 302. *Engl. bot.* 347. *Relh. cant. n.* 1003. *Suppl. Scand. monsp.* 259. *Jacqu. austr.* 4. 49. *t.* 394. *Scop. carn. n.* 364. *Pollich pal. n.* 291. *Allion. pedem. n.* 1345. *Villars dauph.* 2. 621. *Knph. cent.* 8. *n.* 74.
Oe. apii folio. *Bauh. pin.* 162. *Rai hist.* 441.—minor caule firmiore. *Mor. hist. f.* 9. *t.* 7. *f.* 3.
Oe. f. Filipendula monspessulana apii folio. *Bauh. hist.* 3. 2. 191. 1.
Oe. 2. *Matth.* 867.
Oe. apii folio major. *Park. theat.* 893. 1.
Filipendula angustifolia. *Ger.* 901.

Root-leaflets wedge-shaped therein, those of the stem entire linear very long simple.

[7. Oenanthe inebrians.
Thunb. prodr. cap. 49.

Pinnas of the lower leaves ovate, of the upper linear, petioles angular.

8. Oenanthe tenuifolia.
Thunb. prodr. cap. 49.

Leaves bipinnate, pinnas linear, the upper ones undivided.

9. Oenanthe ferulacea.
Thunb. prodr. cap. 50.

Leaves superdecompound, pinnules awl-shaped grooved.

10. Oenanthe interrupta.
Thunb. prodr. 50.

Leaves interruptedly bipinnate, segments gash-serrate.

11. Oenanthe exaltata.
Thunb. prodr. 50.

Stems striated, seeds turbinate striated.

DESCRIPTIONS, &c.

These are chiefly aquatic herbs, inclined to be noxious, the third fort very much so. Roots perennial. Some have tuberous roots hanging by threads, as in Spiræa Filipendula; some have a hollow, fistular stalk. The umbels have few rays: the umbellets are globular, with the flowers often sessile, in the ray barren: the radial umbellets in Oe. prolifera are male and pedunicled, the central ones fruitful and sessile. Involucres and involucrels many-leaved: in Oe. fistulosa

[a] Gærtner. [b] Linn. suppl.

fistulosa and crocata there is no involucre; in Oe. globulosa it has only one or two leaves[1].

1. Roots tuberous. According to Haller, they are diffused widely in the water and mud, where they have sometimes bundles of fibres hanging to them; in gardens they are little bulbs. Pollich says, there are long, slender, round fibres, coming out in whorls from the lower part of the stem, which stay it in the water, and that there are also long, jointed, round runners, creeping transversely along the water. Stem from twelve to eighteen inches, or even two feet in height, rushy, upright, striated, smooth, green or glaucous, except at the bottom, where it is red, hollow within: runners similar, prostrate and creeping far and wide. Leaves sheathing, alternate: root-leaves bipinnate, with three or four pairs of pinnas, having the divisions three, four, or sometimes five-lobed, the lobes blunt; stem-leaves pinnate, with lanceolate pinnules, gradually narrower: the nerves of all the leaves fistular at the beginning, widening into the petiole, and embracing the stalk. Peduncles of the umbels very thick and short. The umbel has from two to seven or eight rays, not very distant from each other. Umbellets roundish, close, convex. Linnæus remarks, that the first umbel is trifid, the rest multifid, insomuch that when the summer is advanced, the plant might be supposed different from the vernal one. General involucre either wholly wanting, or of one leaf, but said sometimes to have five leaves: the partial involucre consists of several leaves, or perhaps rather of one leaf, divided into three, five, or even ten short, lanceolate segments. Petals white, in the ray larger, unequal, in the disk smaller, regular, slightly bifid. Stamens three or four times as long as the corollets, and giving the umbellets a feathery appearance. The umbellets, when in fruit, are globular, and hispid all over with the spreading styles[2]. Fruit inversely pyramidal, subpentagonal, grooved, alternate grooves thicker. Ventral part flat. Outer integument fungous, thick[3].

The smell of the plant is unpleasant, and the taste hot and nauseous, as in many of the umbellate plants. The root is said to be poisonous, to have killed a dog within three days, and that out of seventeen Corsican soldiers, who had eaten it, three died, the rest being cured by emetics. Linnæus affirms that kine and horses refuse it, though on experiment it did not appear to be noxious to the former. Schreber informs us that it is left untouched by cattle; and that seems to be the case with us. The seed is slightly aromatic[4].

So little were deleterious effects suspected in this plant, that it was recommended formerly, in common with many umbellate plants, as a diuretic, and good in the stone and gravel: but Linnæus's is a good general rule, that aquatics of this natural order, if not absolutely poisonous, are at least to be distrusted.

Native of most parts of Europe, in ponds, ditches, by river sides, in wet meadows, and marshes, flowering in june and july.

2. The root of this, which has been considered as a variety of the preceding, is composed of many cylindric-ovate white fleshy tubers, collected into a bunch, each terminating in a white fibre at the base. Stem upright, about eighteen inches high, bright green except at the base, where it is red, smooth, grooved, dichotomous, jointed. Leaves alternate, sheathing, triangular, four or five inches long and three inches wide; the lower bipinnate, the upper simply pinnate, with all the segments linear-lanceolate quite entire, on the uppermost leaves longer and directed to one side; all bright green and smooth. Sheaths striated, smooth. Universal umbel flat, with from seven to ten rays: the partial umbel is a little convex, and has more than thirty rays. Universal involucre none, or sometimes, but very seldom, one-leafed. Partial involucre many-leaved, composed of subulate-setaceous leaflets shorter than the umbells[5].

Dr. Withering, who considers this only as a variety of the preceding, says that in the plants which he got in the Isle of Wight, and which correspond with Pollich's figure, the leaflets are three or four inches long, whereas in the preceding they are rarely more than half or three quarters of an inch in length. The bulbs of the roots seem to vary their situation as the plant grows in more or less water, in a thin or a stiff mud, or in a garden soil; so that their being placed in a bundle at the bottom of the stem, or on the fibres of the roots at a greater or less distance, are circumstances too variable to establish a character.

Pollich observed it in the Palatinate, about Lauteren every where in moist meadows, behind Senebach, in drier meadows, about Cusel: flowering in june. Haller and de Saussure in Switzerland. Dodonæus says it is common in brooks, ditches and marshes, and that it will flourish in gardens, even where it is not very moist, but that it is then smaller and shorter.

Parkinson remarks that it flowers and seeds earlier than the other, and that this is usually pull'd before the greater sort is in flower.

Dr. Plot observed it in the ditches about Medley and Binsey common, and almost every where about Oxford: Blackstone on Wandsworth common, Harefield river, and Ham-abbey, Essex: and the late Dr. John Sibthorp, on the banks of the Isis beyond Iffley, and on peat-bogs under Headington Wick copse.]

3. Hemlock Water Dropwort commonly grows four or five feet high, with strong jointed stalks, which, being broken, emit a yellowish fetid juice. The leaves are somewhat like those of common Hemlock, but of a lighter green colour. The roots divide into four or five larger taper ones, which, when separated, have some resemblance to Parsneps, for which some ignorant persons have boiled them.

[Stem rufous: that and the leaves quite hairless. Leaves some pinnate, but more bipinnate: leaflets wedge-shaped, gashed, even, marked with lines, notched on the edges. Peduncles angular, striated. No universal involucre. It seems however, at least sometimes, to have an involucre of five linear leaflets, about half the length of the shorter rays of the umbel, which very readily falling off has not been observed. Rays of the universal umbel longitudinally furrowed. Umbellets nearly globular. General flower not very unequal. Petals white, bent in, acute. Anthers brown*.

Fruit inferior, ovate-cylindric, grooved, crowned. Seeds semicylindric, with five rounded grooves on one side, and flat on the other: integument double; the outer fungous-coriaceous, thick; the inner membranaceous: albumen oblong, narrowing upwards, with three grooves on one side, and one on the other, fleshy, hard, without smell: embryo dicotyledonous, inverted, very short; cotyledons narrow; radicle cylindric, superior*.

Native of several parts of Europe, principally Holland, France and England, on the banks of large ditches, rivers and lakes. As on the banks of the Thames both above and below London; by the side of Lewisham river, beyond the water-works; in marshy meadows between South-end and Sydenham; in Norwood plentifully; between Loompit-hill and Lewisham; near Dulwich College; in the Isle of Dogs the ditches are covered with it. In ditches about Kendal in Westmoreland, where it is called *Dead-tongue*. Between Bishop's Auckland and Wolsingham, and near Stockton. Bent Bogs, near Manchester race ground. Near Bays Water in Oxfordshire. Near Dartford in Kent. Near Bath and Bridgewater in Somersetshire. In Wales. And Mr. Ray says that it grows abundantly, not only in our northern counties, but in Surry, Sussex, &c. in the South. It flowers in june and july.

Gerarde, from Lobel, says, that this plant has a naughty savour, a strong and grievous smell, a hot biting taste, being full of a juice, at first milky, but afterwards turning yellow. It much resembleth Hemlock in property and qualities: for being eaten in salads it did well nigh poison those that ate of it, making them giddy, waxing very pale, staggering and

[1] Jacq. gen.
[2] Haller, Pollich, Krocker, Linn. spec. Gærtner.
[3] Krocker. Act. nat. vol. 2. Hist. of Roy. Soc.
[4] Pollich.
[5] Linn. Syst. Light. Wither. Gærtner.

reeling

ty-ling like drunken men.—Johnſon adds: "Perni-" cious and not excuſable is the ignorance of ſome of " our nine (1633), that have brought, and (as one " may probably conjecture) uſed the roots of this " plant inſtead of thoſe of Peonie; and I know they " are dayly, by the ignorant women in Cheape-ſide " ſold to people more ignorant than themſelves, by " the name of *Water Lovage*."

Ray, in his hiſtory, (1686) ſpeaks doubtfully of the malignity of Hemlock Water Dropwort, and leaves it to further examination: but in the third edition of the Synopſis (1724) it is ſaid, that no doubt remains of the poiſonous quality of theſe roots, and reference is made to the German Ephemerides, and the Obſervations of Stalp. vander Wiel.

Dr. Withering ſays the whole of this plant is poiſonous; and Dr Pulteney remarks, that the root is the moſt virulent of all the vegetable poiſons that Great Britain produces. Many inſtances of its fatal effects are recorded, wherein it has been eaten for water-parſneps, or celeri, which laſt it reſembles in its leaves[r]. Mr. Lightfoot relates, that he had heard the late Mr. Ehret, the botanic painter ſay, that while he was drawing this plant, the ſmell rendered him ſo giddy, that he was ſeveral times obliged to quit the room, and walk out in the freſh air to recover himſelf; but that having opened the door and windows of the room, the free air enabled him to finiſh his work. I always experience the ſame effect from Henbane. Mr. Lightfoot adds, that he has ſeen a large ſpoonful of the juice of this plant given to a dog, which made him very ſick and ſtupid, but in about an hour he recovered; and that he has ſeen a goat eat it with impunity: ſheep alſo are ſaid to eat it; kine and horſes to refuſe it.

An infuſion of the leaves, or three tea ſpoonfuls of the juice of the root, taken every morning, effected a cure in a very obſtinate cutaneous diſeaſe, but not without occaſioning very great diſturbances in the conſtitution. The country people in Weſtmoreland apply a poultice of the herb to the ulcer which forms in the fore-part of the cleft of the hoof in horned cattle, and is called the foul[s].

It may be ſafely uſed externally, but internally it ſhould be taken with caution, as is evident from the accounts given above, and others recited by Mr. Howell, and the late Sir William Watſon in the Philoſophical Tranſactions. The former of theſe gentlemen ſays, that two French priſoners at Pembroke died by eating the root, that the inhabitants call it five-fingered root, and that it is much uſed there in cataplaſms for the fallon, or worſt kind of whitlow. In n. 238 of the Philoſophical Tranſactions a caſe is related of eight young lads near Clonmell in Ireland, where this plant is called *Tabowe*, miſtaking its roots for the Water-Parſnep: five of them died. Dr. Allen, in his Synopſis Medicinæ, mentions an inſtance of four children, who eat of theſe roots, but by proper care did well: and another of a pig's dying in convulſions, from eating ſome of theſe roots, which it had grubbed up. Mr. Miller informed Sir William Watſon that a whole family were poiſoned with this plant at Batterſea.

The method of cure is to empty the ſtomach and inteſtines as ſoon as poſſible, and then to cauſe the patient to ſwallow large quantities of oleaginous fluids. This is attended with difficulty, becauſe the jawa are, as it were, locked together by the violence of the ſpaſm.

The more caution is neceſſary reſpecting this plant, becauſe it is not uncommon in ſome places, its appearance and ſmell reſemble ſmallage or celeri, and the roots have not any flavour diſagreeable enough to deter perſons from eating them.

Lobel is the firſt who has given a ſmall figure and a tolerable deſcription of this plant. Dodonæus's figure is execrably bad, and is copied by Gerarde and Parkinſon. The figures of John Bauhin, Matthiolus and Morriſon give us ſcarcely any other idea of the plant, than that it is an umbelliferous one, with roots divided like thoſe of Aſphodel. Morriſon's is the beſt. Jacquin has given a good coloured figure of it, and it cannot be miſtaken from the plate engraved by Myndle from a drawing of Ehret's, which accompanies Sir William Watſon's diſſertation on this plant, in the Philoſophical Tranſactions; where it may alſo be compared with Cicuta virola, another of our moſt poiſonous plants.

Mr. Ray's deſcription of Oenanthe crocata is taken from Lobel. Morriſon's deſcription, in his Umbelliferæ, is exact and copious.

4. Root perennial, conſiſting of ſeveral tubers, which are round, narrowing to each end, long, of a dirty brown on the outſide, white within. The whole plant is ſmooth. Stem herbaceous, a foot and half in height, upright, little branched, green, angular-ſtriated. Leaves ſubtripliçate-pinnate, from a round midrib, ſcarcely ſtriated, ſheathing at the baſe: leaflets blunt, gaſhed, ſubovate or rather roundiſh. Univerſal involucre none, or at moſt of one or two awl-ſhaped leaves: partial of ſeveral lanceolate-linear acuminate, unequal, ſhort, very ſpreading leaflets. Univerſal umbel has from five to eight rays, long, ſtriated, thickiſh, ſpreading: partial at firſt very cloſe, convex, ſmall, the florets ſeſſile; but afterwards the outer florets ſtart out and have rays, ſome of them an inch long. Theſe are male and have the petals very unequal. The central florets are hermaphrodite, fertile and equal. Petals white, erect, longly cordate, bent inwards, awl-ſhaped and very long at the tip. Filaments longer than the corolla. The fruits of each umbel make a compact hard hemiſpherical head, rendered rough by the ſtiff calycine leaflets: each fruit is inverſely conical, with little taſte and no ſmell, pale, angular, bluntly grooved, crowned by the calyx. Seeds ſmooth, flat on one ſide, five-grooved on the other[t].

Native of Sicily and Italy. Cultivated in 1739, by Mr. Miller. It flowers in june and july[u].

5. Roots like thoſe of Navew, perennial, branched. Stem a foot high or more, branched, angular at the baſe, and often purple. The firſt root-leaves ternate or quinate, with ſome of the leaflets lanceolate, others wedge-ſhaped, entire bifid or three-lobed, veined, very ſmooth. The next and lower ſtem-leaves are lanceolate, bipinnate, the pinnules and leaflets oppoſite, lanceolate, bifid or trifid, acuminate. Sheaths of the petioles wide, membranaceous, nerved, at the top running into the petiole, but not lobed. The reſt of the ſtem-leaves pinnate; with narrower, longer, ternate leaflets. The uppermoſt, and thoſe on the branches, alſo pinnate, but with the leaflets quite ſimple, much narrower and longer. Peduncles oppoſite to the leaves, round, very ſlightly ſtriated, the length of the internodes, almoſt four inches long. Umbels of three or four rays, nearly half an inch in length, unequal. Univerſal involucre either wanting, or having one or two leaves at moſt. Umbellets cluſtered, with from twelve to fifteen florets. Leaflets of the involucels ſubulate-lanceolate, equal, the length of the florets[v]. Fruit ſmall, ovate-globular, within a little crown formed of the permanent calyx produced into a conical ſtyle-bearing tubercle. Seeds ſubhemiſpherical, with three thicker ridges along the back, beſides the margin; flat on the belly. Outer integument thick and ſomewhat fungous. Embryo minute, roundiſh[w]. The fruit is larger than a Coriander. It has more the appearance of the next ſpecies than any other, but it is eaſily diſtinguiſhed from that by the whole leaves being lanceolate, not triangular, and the ſtem being leſs branched[x].

Native of Portugal. Cultivated in 1739, by Mr. Miller. It is biennial, and flowers in june and july[y].

6. Roots cylindric, cluſtered, fibrous, with bulbs or tubers hanging upon long peduncles. Stems ſhort, a hand or half a foot in height, angular. Root-leaves like thoſe of Parſley, but thicker, bipinnate, broad, with wedge-form, gaſhed, divided leaflets. Stem-

[r] Miſſel. Tranſ. Gentl. magaz. july 1747, march 1755, ſept. 1758. Withering.

[s] Jacquin. [t] Hort. kew. [u] Gouan. [v] Gærtner. [w] Gouan. [x] Hort. kew. [y] Gouan.

leaves left compound, scarcely bipinnate; with linear, channelled, very long leaflets. Umbel unequal. Both involucres subulate-setaceous. Corollas white, little rayed[*].

Relhan says that the stem is from two to three feet high. According to Scopoli, it is the ray and not the disk in this species that is abortive. Haller remarks, that the outer rays of the partial umbel are very long, and the florets barren. The calycine teeth, as Scopoli observes, are unequal, two being larger than the other three. The styles are upright.

Villars remarks that the leaves vary much; those under water being wide, thick, bipinnate and rounded; the others straight, much narrower and longer: umbels solitary, on straight stems, two or three feet high.

Gærtner describes the fruit as being turbinate-cylindric, crowned with a width calyx, with a white callous ring at the base: back convex with three streaks, and the margin thickened at the sides: belly flat. Embryo minute, roundish.

Native of the southern part of Europe and England, in marshes, especially near the the coast, as at Quapload in Lincolnshire near Spalding. Hinton-moor in Cambridgeshire. Bulvan-Fen, Essex. Near Mortlake. Between Sydenham and South-end.

7, 8, 9, 10, 11. Natives of the Cape of Good Hope.]

PROPAGATION AND CULTURE.

All these plants naturally grow in moist places, their seeds therefore should be sown upon a moist soil in autumn soon after they are ripe. [The first, second and sixth sorts will do very well in the common ground; but the third requires mud to grow in to any purpose.

OENANTHE. See *Sefeli*, *Sison*, *Sium*, *Thalictrum*.

OENOPLIA. See *Rhamnus*.]

OENOTHERA (*ef Pliny.* Οινοθηρας or Οινοθηρατ *of Theophraftus. From* οινος *and* θηρα: *vini venator.*)

Lin. gen. n. 469. *Reich. n.* 505. *Schreb. n.* 637. & *p.* 828. *Juff.* 319. Onagra. *Tournef. t.* 156. *Gærtn. t.* 32.

Class. 8. 1. Octandria Monogynia.

Nat. order of *Calycanthemæ. Onagræ*, Juff.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, superior, deciduous: *tube* cylindrical, erect, long, deciduous: *border* four-cleft; the *segments* oblong, acute, bent down.

COR. *Petals* four, obcordate, flat, inserted into the interstices of the calyx, and the same length with the divisions of the calyx.

STAM. *Filaments* eight, awl-shaped, curved inwards, inserted into the throat of the calyx, shorter than the corolla. *Authers* oblong, incumbent.

PIST. *Germ* cylindrical, inferior. *Style* filiform, the length of the stamens. *Stigma* four-cleft, thick, blunt, reflex.

PER. *Capsule* cylindrical, four-cornered, four-celled, four-valved, with contrary partitions.

SEEDS very many, angular, naked. *Receptacle* columnar, free, four-cornered: with the angles contiguous to the margin of the partitions.

ESSENTIAL CHARACTER.

Cal. four-cleft. *Pet.* four. *Caps.* cylindrical, inferior. *Seeds* naked.

SPECIES.

1. Oenothera biennis. *Broad-leaved Tree-Primrose.*
Lin. spec. 492. *fyst.* 358. *Reich.* 2. 147. *vir. cliff.* 33 *hort. cliff.* 144. *hort. upf.* 94. *Gron virg.* 254. *Kalm. it.* 3. 509. *Hall. helv. n.* 994. *Fl. dan. t.* 446. *Pollich pal. n.* 368. *Kruck. filef. n.* 582. *Villars dauph.* 3. 506. *Knipb. cent.* 1. *n.* 67. *Mill. fig. t.* 189. *f.* 2. *Mill. illuftr. Pleuck, ic.* 295.
Onagra biennis. *Scop. carn. n.* 451. *Allion. pedem. n.* 1014. *Gærtn. fruct.* 1. 160.
O. latifolia. *Tournef. inft.* 302.
Lyfimachia lutea corniculata. *Bauh. pin.* 245. & 516. *defcr. Mor. hift.* 2. 271. *f.* 3. *t.* 11. *f.* 7.
L. lutea virginiana. *Ger. emac.* 475. 4. *Raii hift.* 862.
L. lutea filiquofa virginiana. *Park. parad.* 263. *f.* 6.
Hyofcyamus virginianus. *Alp. exot.* 325. *t.* 324.
Leaves ovate-lanceolate flat, ftem muricated fubvilloſe.

[2. Oenothera grandiflora. *Great-flowered Tree-Primroſe.*
L'Herit. ſtirp. nov. 2. *t.* 4. *Ait. hort. kew.* 2. 2.
Leaves ovate-lanceolate, ſtamens declined, ſtem ſhrubby.]

3. Oenothera parviflora. *Small-flowered Tree-Primroſe.*
Lin. ſpec. 492. *fyſt.* 358. *Reich.* 2. 147. *Linn. gœtt.* 199. *Thunb. jap.* 155.
Oenothera anguſtifolia. *Mill. dict. n.* 2. *fig.* 189. *f.* 1.
Onagra anguſt. caule rubro, flore minore. *Tourn. inſt.* 302.
ß. Oenothera glabra. *Mill. dict. n.* 3.
Leaves ovate-lanceolate flat, ſtem even fubvilloſe.

[4. Oenothera muricata. *Muricated Tree-Primroſe.*
Lin. fyſt. 358. *Reich.* 2. 147. *Murr. in comm. gott.* 6. 1775. *p.* 24. *t.* 1.
Leaves lanceolate flat, ſtem purple muricated.

5. Oenothera longiflora. *Long-flowered Tree-Primroſe.*
Lin. fyſt. 358. *Reich.* 2. 148. *mant.* 227. *Jacqu. hort.* 2. 81. *t.* 172. *Curt. magaz.* 365.
Leaves toothletted, ſtems ſimple hairy, petals diſtant two-lobed.]

6. Oenothera molliſſima. *Soft Tree-Primroſe.*
Lin. ſpec. 492. *Reich.* 2. 148. *vir. cliff.* 33. *hort. upſ.* 144. *Gron. virg.* 42. 58. *Knipb. cent.* 4. *n.* 57. *Sabb. hort.* 4. *t.* 60.
Onagra bonarienſis villoſa, flore mutabili. *Dill. elth.* 297. *t.* 219. *f.* 286.
Leaves lanceolate waved pubeſcent very ſoft.

[7. Oenothera roſea. *Roſe-flowered Tree-Primroſe.*
L'Herit. ſtirp. nov. tom. 2. *t.* 6. *Ait. hort. kew.* 2. 3.
Curt. magaz. 347.
Leaves ovate toothed, lower ones lyrate, capſules club-ſhaped.

8. Oenothera purpurea. *Purple Tree-Primroſe.*
Curt. magaz. 352.
Oenothera humilis. *Donn hort. cant.* 41.
Leaves ovate-lanceolate glaucous quite entire, capſules ſeſſile, ſtigma dark purple.

9. Oenothera ſinuata. *Scollop-leaved Tree-Primroſe.*
Lin. fyſt. 358. *Reich.* 2. 149. *mant.* 228. *Murr. in comm. gott.* 5. 1774. *p.* 44. *t.* 9.
Oenothera repanda. *Medicus in act. palat.* 3. *phyſ. p.* 198. *t.* 8.
Lyſimachia corniculata maritima, ſinuatis & pubeſcentibus foliis, virginiana. *Pluk. phyt. t.* 203. *f.* 3.
Leaves tooth-ſinuate, capſules priſmatic.

10. Oenothera fruticoſa. *Shrubby Tree-Primroſe.*
Lin. ſpec. 492. *fyſt.* 358. *Reich.* 2. 149. *Gronov hort.* 193. *L'Herit. ſtirp. nov.* 2. *t.* 5. *Curt. magaz. t.* 332.
Leaves lanceolate ſomewhat toothed, capſules pedicelled acute-angled, racems pedunculed.]

11. Oenothera pumila. *Dwarf Tree-Primroſe.*
Lin. ſpec. 493. *Reich.* 2. 150. *Mill. fig.* 125. *t.* 188. *Curt. magaz.* 355. *Pluk. mant.* 123. *Raii ſuppl.* 216. (Lyſimachia).
Leaves lanceolate blunt ſmooth ſubpetioled ſtems proſtrate (aſcending) capſules acute-angled.

DESCRIPTIONS, *&c.*

[Theſe are herbaceous, hardy, biennial plants, for the moſt part; the ninth is marked as annual, ſome are perennial, and the tenth is called ſhrubby, though hardly ſo in reality: ſome of the herbaceous ones are inclined to be woody at bottom. The leaves are alternate. The flowers axillary and ſolitary[*].

1. Root fuſiform, fibrous, yellowiſh on the outſide, white within, biennial. From this, the firſt year, ariſe many obtuſe leaves, which ſpread flat on the ground. From among theſe, the ſecond year, the ſtems come out, three or four feet high. The ſpecimen before me (Auguſt 8th, 1798) is conſiderably more than five feet in height, upright, of a pale green colour, the thickneſs of a finger, not hollow but pithy, angular, ſlightly pubeſcent and rugged, tinged with purple, eſpecially towards the bottom, branched alternately almoſt from the ground. Root-leaves run down into a three-ſided petiole an inch in length. Stem-leaves ſeſſile, bright lightiſh green, pubeſcent on both ſides, waved a little

[*] Linn.

[*] Juſſieu.

about the edge, and having a few ſmall teeth near the baſe; they are from five to ſeven inches in length and two inches in breadth, having a conſiderable midrib running the whole length, very wide and tinged with purple towards the baſe, at the back very prominent, with white nerves ſpringing from it, and curved towards the point. The flowers are produced all along the ſtalks on axillary branches, and in a terminating ſpike. The leaves on the former are ſimilar to the ſtem-leaves, but much ſmaller, being not more than two inches long, and little more than half an inch in breadth. Flowers ſolitary, each being ſeparated by a leaflet or bracte, wider in proportion at the baſe than the proper leaves, and drawn more to a point, diminiſhing gradually towards the top of the ſpike, till they become linear, ſcarcely half an inch in length, and a line in breadth. Germ ſeſſile, an inch long or more; on the top of this is the tube of the calyx, from an inch to almoſt two inches in length, and narrow, ſpreading out at top into four acute ſegments, villoſe on the outſide, an inch in length, bent down by pairs when the corolla expands, and then rolled inwards. Scopoli remarks, that there are four, oblong, yellow tubercles growing to the baſe of the calyx. Corolla bright yellow, from an inch and half to near two inches in diameter, ſpreading out quite flat in the evening, petals roundiſh, blunt, ſometimes emarginate, crenate, and waved. Stamens much ſhorter than the corolla. Filaments ſhorter than the ſtyle, yellow. Anthers four lines in length. Stigmas yellow, mealy, one commonly longer than the others. Germ four-grooved.—Capſule not crowned, ſubcylindric, obſcurely four-cornered, pubeſcent with very ſoft villoſe hairs. Seeds numerous (fifty in one cell), lying over each other in a double row, oblique, in a manner half-mooned, flat on both ſides, fungous, ferruginous [a].

The flowers uſually open between ſix and ſeven o'clock in the evening, whence this plant is called Evening or Night-Primroſe. The mode of their expanding is curious. The petals are held together at top by the hooks at the end of the calyx, the ſegments of which firſt ſeparate at bottom and diſcover the corolla, a long time before it acquires ſufficient expanſive force to unhook the calyx at top; when it has accompliſhed this, it expands very faſt, almoſt inſtantaneouſly to a certain point, and then makes a ſtop, taking a little time to ſpread out quite flat: it may be half an hour from the firſt burſting of the calyx at bottom to the final expanſion of the corolla; which commonly becomes flaccid in the courſe of the next day, ſooner or later according to the heat or coolneſs of the weather. The uppermoſt flowers come out firſt in june, the ſtalk keeps continually advancing in height, and there is a conſtant ſucceſſion of flowers, till late in autumn.

It is a native of North America: and was firſt ſent from Virginia to Padua in 1619. It was cultivated here in 1629, as appears from Parkinſon. He gave it the name of Tree-Primroſe. It is now become a denizon of ſeveral parts of Europe; but though it is very common in gardens with us, I have never ſeen it in a wild ſtate. The roots are eaten in ſome countries in the ſpring.

2. This is a biennial plant as well as the preceding, and ſeveral of the other ſpecies, but the ſtem is more ſhrubby. It is alſo a native of North America, but was not known here till it was introduced by John Fothergill, M. D. in 1778. It flowers in july and auguſt [b].

3. The apex of the fruit is crowned with an eight-cleft margin, not four-cleft, as in the firſt ſpecies, which it very much reſembles [c]. Stalks red, ſet with rough protuberances. It does not riſe ſo high as the firſt, the leaves are narrower, and the flowers are ſmaller. [Leaves ſpear-ſhaped and ſomewhat toothed, leſs ſoft. Calyx four times ſhorter than its tube, with a toothleſs below the tip, hence before the calyx unfolds the points in this are diſtant. Sides of the petals diſtant. Petals leſs by half than thoſe of the common ſort [d].

[a] Gaertner. [b] Hort. kew. [c] Linn. ſpec. [d] Linn. ſyſt. and Comm. gott.

Native of North America, and biennial as that is: flowering from june to auguſt. Native alſo of Japan, according to Thunberg. According to the Kew catalogue it was introduced in 1775, by John Earl of Bute.]

8. This differs from the firſt in having ſhorter ſtalks, narrower leaves and ſmaller flowers; from the ſecond, in having ſmooth ſtalks, of a pale green colour.

[4. This reſembles the parviflora, but the mouth of the fruit is not eight-cleft. The ſtem has red dots ſcattered over it. The corolla is only half the ſize and paler, with the petals emarginate but not biffid. Stamens equal to the corolla or longer, never ſhorter.—Native of Canada.

5. Root biennial. Root-leaves numerous, broad-lanceolate, toothletted, pubeſcent with a white rib, obliquely nerved. Stems uſually five, ſpringing out below the root-leaves, quite ſimple, aſcending, rough-haired, green with long ſpreading white hairs. The central ſtem grows up later. Stem-leaves ovate-oblong, ſeſſile, like the root-leaves. Flowers axillary from the upper leaves, with the germ and calyx hairy. Tube of the calyx remarkably elongated, three times as long as the border. Petals yellow, obcordate two-lobed, the ſame ſize with the common ſort or larger, diſtant at the ſides, turning reddiſh the ſecond day. Fruit like that of *biennis*, but longer, and narrower at bottom, with the mouth converging and leſs rugged.

It has many of the above circumſtances in common with the firſt ſpecies; that differs from this in having the ſtem upright, the ſide branches ſcarce apparently hairy, the petals approximating, ſcarcely emarginate, never biffid, and the tube of the calyx ſcarcely twice as long as the ſegments. It differs from *Oe. mollifſima* in the ſtem not being branched, the leaves wider, and not ſoftly pubeſcent: from *Oe. parviflora* in the ſtem not being red, and the flowers much larger [e].

Mr. Curtis remarks, that luxuriant ſpecimens exceed five feet in height, that the flowers are uncommonly large and ſhowy, and continue blowing from july to october.

Native of Buenos Ayres. Introduced in 1776, by Chevalier Murray [f].]

6. This has a ſhrubby ſtalk more than two feet high, hairy, with narrow-lanceolate, ſeſſile leaves, a little waved on their edges, and ending in acute points. Flowers axillary like the other ſorts, at firſt pale yellow, but as they decay changing to an orange colour, ſmaller than thoſe of Oe. biennis. Seed-veſſels ſlender, taper, hairy.

[According to Dillenius, the ſtems are uſually eighteen inches high, round, upright, ſomewhat duſky at bottom, pale green above, branched a little from the bottom. Leaves toothed here and there on the edge, ſoftly pubeſcent, green on both ſides with a white midrib, and oblique veins. Flowers ſomewhat ſmaller than thoſe of the common ſort, but on a longer peduncle: petals wrinkled, approximating. The petals and leaflets of the calyx do not fall off, but wither on the fruit, and fall with the pedicel, which cannot be conſidered as the tube of the flower, ſince it is not hollow. Anthers at firſt upright, but afterwards tranſverſe. The capſules increaſe in length after the flowers fall; they are round, ſtriated but leſs deeply than in the common ſort, longer and thicker. The whole plant is ſoft, peduncles, capſules, and all, eſpecially in a wild ſtate, when the leaves are narrower and all the parts ſmaller than in a garden.

This is alſo a biennial plant, native of Buenos Ayres. It was cultivated before 1732 in the Eltham garden, belonging to James Sherard, M. D. being raiſed there from the ſeed of ſpecimens ſent from America. It flowers from june to october.

7. This rarely exceeds a foot in height. Its roſe-coloured flowers expand during the whole of the day, and are produced during moſt of the ſummer months. Of the eleven ſpecies, ſays Mr. Curtis, this only and the next have red or purple flowers, the reſt are yellow. He obſerves alſo that this is ſcarcely entitled to

[e] Linn. mant. [f] Hort. kew. [g] Idem.

the diſtinction of a perennial.—Native of Peru. Introduced by Monſ. Thouin in 1783[p].

8. This is diſtinguiſhed by the glaucous appearance of its foliage, the purple hue of its corolla, and the dark colour of its ſtigma. It is about two feet high, and produces abundance of fine purple flowers in july and auguſt, open, like thoſe of *roſea*, during the day. The ſeeds ripen in ſeptember[q].

This plant is not in the *hortus kewenſis*, but it appears from Mr. Donn's Cambridge catalogue, that it was introduced from the weſtern coaſt of North America, in 1791. It is an annual, and a very ornamental ſpecies. Mr. Donn names it *humilis*.

9. Root annual. Stem ſimple, round, a foot high, upright, nodding at top; when young hairy, when old ſmoothiſh; branches alternate. Leaves ſeſſile, broad-lanceolate, naked, oblique. Flowers ſeſſile, hairy on the calyx and germ. Calyx acute, mucronate below the tip; the tube aſcending. Germ before flowering-time declined. Petals yellow, obcordate, the ſame length with the leaves of the calyx. Capſule cylindrical, quadrangular with the angles flat, truncate with the top deeply excavated and four-cleft; the lobes emarginate. It ſleeps during the night, with the upper leaves hollowed[r].

Native of North America. Introduced in 1770, by Monſ. Richard[s].

10. This is a perennial, but altogether herbaceous, at leaſt with us, and therefore improperly named *fruticoſa*. The flowers which are large and ſhowy, though they open in the evening, remain expanded during moſt of the enſuing day. The flower-buds, germ and ſtalk are enlivened by a richneſs of colour which contributes to render this ſpecies one of the moſt ornamental and deſirable of the genus[t]. In cloudy weather the common Tree-Primroſe keeps open during the whole of the day ſubſequent to the evening of its expanſion.

Mr. Curtis's *frutioſa* cannot be the ſame with that of Linnæus, who deſcribes the flowers as ſmall and white, the tube filiform and very narrow; the calyx purple, four-leaved, but generally ſmelling on one ſide; the capſule with four acute compreſſed angles; the leaves thinly toothed.

Native of Virginia. Cultivated in 1739, by Mr. Miller, as appears from Rand's catalogue, for it is not in the Dictionary[u].

11. Root perennial, fibrous. Lower leaves ovate, ſmall, cloſe to the ground. Stalk ſlender, near a foot high. Leaves ſmaller, light green, ſeſſile, ending in blunt points. Flowers ſmall, bright yellow. Capſules ſhort, ovate, furrowed.

This is diſtinguiſhed from all the ſpecies with yellow flowers by the inferiority of its ſize; in its moſt luxuriant ſtate rarely exceeding a foot in height, and commonly far more humble. It ſends up many flowering-ſtems, producing bloſſoms from april to july, open in the morning as well as evening. The ſtalks are rather aſcending than proſtrate[x].

Linnæus deſcribes the ſtem as a palm in height, herbaceous, round, flexuoſe, very much divaricated: leaves elliptic-lanceolate, quite entire: flowers erect, ſubſeſſile, with yellow, obcordate petals, marked with lines: capſules obovate, blunt, octangular, with four of the angles wider and compreſſed.

Native of North America. Cultivated in 1757, by Mr. Miller: who had the ſeeds from Monſ. Richard[y], the King of France's gardener at Trianon.

There are ſeveral other ſpecies of Oenothera known, but not yet ſufficiently aſcertained. Two are figured by Jacquin in his magnificent work entitled Icones Plantarum Rariorum. One by Mr. Curtis. And I raiſed another from ſeed given me by Governor Phillip, on his return from his government. Mr. Donn cultivates ſixteen ſorts, in the botanic garden at Cambridge.]

PROPAGATION AND CULTURE.

The firſt and ſome of the other ſpecies (3. 4. 9), are very hardy biennial plants. Sow the ſeeds in autumn; when the plants come up, thin them, and keep them clean: the following autumn, tranſplant them to the places where they are deſigned to flower. As the roots ſtrike deep in the ground, care ſhould be taken not to cut or break them in removing. They will thrive in almoſt any ſoil or ſituation; and will flower even in London, better than moſt other plants. If once introduced, and the ſeeds permitted to ſcatter, there will be a ſupply of plants without any care.

2. 5. 6. 7. Are more tender, and commonly conſidered as green-houſe plants, but as they produce flowers and ſeeds in the open air, the plants are ſeldom preſerved.

[5. Is an annual, (or rather biennial) of ready growth, and very productive of ſeeds, ſome of which ripen early. Sow them in the open border, where they are intended to flower, in march or the beginning of april. A ſingle plant is ſufficient for one ſpot. Put a ſtick to it early of four feet in length, to which tie its branches, when about a foot long[z].]

6. Will come up from ſcattered ſeeds like the firſt.

[7. May be increaſed either by cuttings or ſeeds. Theſe are plentifully produced. Sow them in the ſpring with tender annuals: when the plants have acquired a proper age and the ſeaſon is favourable, plant them out ſingly in the open border.

8. Is an annual of ready growth. Sow the ſeeds and tranſplant, as directed for the preceding ſort.

10. May be increaſed by ſeeds, by parting the roots and by cuttings. It is hardy enough to bear the open air[a].]

11. This may be propagated by parting the roots or by ſeeds. The beſt time for the former is the ſpring: but ſeeds ſhould be ſown in the autumn, in pots, placed under a hot-bed frame in winter. In the ſpring the plants will appear: when fit to remove, plant a few in ſmall pots, to be ſheltered under a common frame in winter: plant the others in a ſheltered border, where they will endure the cold of our ordinary winters very well, and the following ſummer produce flowers and ſeeds in plenty. The ſeedling plants will be much ſtronger, and flower better, than thoſe from offsets.

[OENOTHERA OCTOVALVIS & HIRTA. See OENOTHERA.

OENOTHERA. See *Avicennia*.

OETIA. See *Spielmannia*.

OIL-SEED and OIL-TREE. See *Ricinus*.

OILY-GRAIN. See *Seſamum*.

OKRA and OKRO. See *Hibiſcus*.

OLAX. (*From* Ὀλαξ, *ſulcus, a furrow.*)

Lin. gen. n. 45. *Reich. n.* 49. *Schreb. n.* 61. *Gærtn. t.* 179. *Juſſ.* 153.

Claſſ. 3. 1. Triandria Monogynia.

Nat. order of *Sapotæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, concave, very ſhort, quite entire (trifid with blunt teeth, *G.*)

COR. one-petalled, funnel-form: *border* trifid, blunt; the third ſegment deeper.

Nectaries four (three, *G.*) round, petioled, ſhorter than the corolla, from erect-converging, in the throat of the corolla.

STAM. *Filaments* three, awl-ſhaped, alternate with the nectaries, and ſhorter. *Anthers* ſimple.

PIST. *Germ* ſuperior, roundiſh. *Style* filiform, longer than the ſtamens, caducous. *Stigma* capitate.

PER. *Berry* fleſhy, three-celled, half covered with the permanent calyx and corolla. *G.*

SEEDS ſeveral (ſix or eight in each cell) ſmall, oblong, pale, with a navel in the middle of the inner ſide. *G.*

ESSENTIAL CHARACTER.

Cal. entire (trifid, *G.*) *Cor.* funnel-form, trifid. *Nect.* four (three, *G.*) *Berry* three-celled, many-ſeeded.

SPECIES.

1. Olax zeylanica.

Lin. ſpec. 48. *Reich.* 1. 92. *Willd.* 185. *fl. zeyl. n.* 34. *amœn.* 1. 387. *Gærtn. fruct.* 2. 474. *Vahl ſymb.* 3. 7.

Arbor ſtercoraria zeylanica glandifera. *Burm. zeyl.* 26?

Malla holla. *Herm. zeyl.* 13? *Burm. ind.* 17?

[p] Hort. kew. [q] Curtis [r] Linn. mant.
[s] Hort. kew. [t] Curtis. [u] Hort. kew.
[x] Curtis. [y] Hort. kew.
[z] Curtis. [a] Idem.

DESCRIP-

DESCRIPTION, &c.

This is a tree, with flaccid branches, wrinkled like those of Viſcum or Miſſelto, alternate. Leaves ovate, ſmooth, veinleſs, alternate, quite entire, petioled. Peduncles very ſhort, ſomewhat branched, from the axils of the leaves [a].

Branches angular with flexuoſe decurrent lines, ſmooth, covered with a yellowiſh green bark, very finely wrinkled across. Leaves two or three inches long, ovate-lanceolate, very ſmooth and even, with a groove along the middle above, very finely nerved, ſcarcely veined, blunt. Racemes axillary, quite ſimple, ſhorter than the leaf, uſually ſolitary, very ſeldom in pairs. Peduncles filiform, after the flowers are fallen toothletted [a].

Berry half covered with the permanent calyx and corolla, ſmall, the ſize of a radiſh ſeed, black, with a firm and as it were coriaceous fleſh, the pulp of the cells gelatinous. Receptacles, very thin membranaceous ligules, from the central angle of the cells, radiating towards the periphery [a].

Gærtner is of opinion that the Olax of Linneus, which agrees with his ſpecimens except in the nectaries, is different from the Arbor ſtercoraria of Burmann, and the Malla-holla of Hermann.—Native of Ceylon.]

OLDENLANDIA. (*So named by Plumier, in memory of Henr. Bernh. Oldenland, a Dane, who collected plants at the Cape of Good Hope in* 1695. *They came into the poſſeſſion of Burmann, and there is an account of them in the ſixth volume of the Amœnitates.*)

Lin. gen. n. 154. *Reich. n.* 162. *Schreb. n.* 205. *Gærtn. t.* 30. *Juſſ.* 198.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Stellatæ*. *Rubiaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-parted, the parts awl-ſhaped, ſuperior, permanent.

COR. one-petalled: *tube* cylindrical, cloſed by a beard: *border* four-parted, acute, ſpreading, a little longer than the calyx.

STAM. *Filaments* four, ſimple, within the tube. *Anthers* ſmall.

PIST. *Germ* roundiſh, inferior. *Style* ſimple, the length of the ſtamens. *Stigma* bifid, obtuſe.

PER. *Capſule* twin, roundiſh, two celled, opening between the teeth of the calyx.

SEEDS numerous, very ſmall.

OBS. *According to Schreber, it ſcarcely differs from* Hedyotis, *and therefore one of the genera might be ſpared. There is a difference however in the calyx, corolla and receptacle.*

ESSENTIAL CHARACTER.

Cal. faſtened to the pericarp, with four free awl-ſhaped teeth at top. *Cor.* one-petalled four-cleft. *Capſ.* inferior, two-celled. *Recept.* free, faſtened to the partition by the baſe only.

SPECIES.

[1. Oldenlandia verticillata. *Whorled Oldenlandia.*
Lin. ſyſt. 161. *Reich.* 1. 337. *mant.* 40.
Crateogonum amboinicum. Rumph. amb. 6. 25. *t.* 10.
Flowers in whorls ſeſſile, ſtipulas briſtle-bearing.

2. Oldenlandia repens. *Creeping Oldenlandia.*
Lin. ſyſt. 161. *Reich.* 1. 337. *mant.* 40. *Burm. ind. t.* 15. *f.* 2. *Lour. cochinch.* 78.
Cruſta ollæ minima. *Rumph. amb.* 6. 460. *t.* 170. *f.* 4. *Plok. phyt. t.* 356. *f.* 5.
Capſules ſeſſile biſpid, leaves lanceolate.

3. Oldenlandia capenſis. *Cape Oldenlandia.*
Lin. ſyſt. 161. *ſuppl.* 127. *Thunb. prodr. cap.* 29.
Flowers in whorls pedunculed, leaves linear.

4. Oldenlandia uniflora. *One-flowered* or *Water Oldenland.*
Lin. ſpec. 174. *Reich.* 1. 337. *Grin. virg.* 138. *Brown. jam.* 146. 2. *Plok. phyt. t.* 74. *f.* 5. *bad.* (Aliſtre).
Pedunckes quite ſimple lateral, fruits rough-haired, leaves ſubcoriate acute.

5. Oldenlandia biflora. *Two-flowered Oldenlandia.*
Lin. ſpec. 174. *ſyſt.* 161. *Reich.* 1. 338. *fl. zeyl. n.* 68. *Burm. zeyl.* 22. *t.* 11. (Antirrhinum).

[a] Linn. zeyl. [b] Vahl. [c] Gærtner.

Pedunckes two-flowered longer than the petiole, leaves lanceolate.

6. Oldenlandia umbellata. *Umbelled Oldenlandia,* or *Eaſt India Madder.*
Lin. ſpec. 174. *Reich.* 1. 338. *fl. zeyl. n.* 67. *Roxb. corom.* 1. 2. *t.* 3. *Plok. phyt. t.* 139. *f.* 4.
Umbels naked lateral alternate, leaves linear.

7. Oldenlandia hirſuta. *Hairy Oldenlandia.*
Lin. ſyſt. 162. *ſuppl.* 127.
Umbels axillary, ſtem and calyxes biſpid, leaves ovate acute.]

8. Oldenlandia corymboſa. *Hyſſop-leaved Oldenlandia.*
Lin. ſpec. 174. & 1679. *Reich.* 1. 338. *Gærtn. fruct.* 1. 147. *Brown. jam.* 146. 1.
O. humilis hyſſopifolia. *Plum. gen.* 42. *ic.* 212. *f.* 1. *Ehret. pict. t.* 2. *f.* 1.
Pedunckes many-flowered, leaves linear lanceolate.

[9. Oldenlandia paniculata. *Panicled Oldenlandia.*
Lin. ſpec. 1667. *ſyſt.* 162. *Reich.* 1. 338. *Lour. cochinch.* 78.
Mollugo zeylanica. *Burm. zeyl.* 161. *t.* 71. *f.* 2. *ind. t.* 15. *f.* 1.
Pedunckes panicled terminating, leaves oval-lanceolate.

10. Oldenlandia pentandra. *Five-ſtamened Oldenlandia.*
Retz. obſ. 4. 22. *n.* 64.
Flowers five ſtamened two-ſtyled, leaves linear, pedunckes two-flowered.

11. Oldenlandia digyna. *Two-ſtyled Oldenlandia.*
Retz. obſ. 4. 23. *n.* 65.
Flowers five-ſtamened two-ſtyled ſeſſile, leaves lanceolate.

12. Oldenlandia trinervia. *Three-nerved Oldenlandia.*
Retz. obſ. 4. 23. *n.* 66.
Stem decumbent, leaves ovate three-nerved, flowers in whorls axillary, capſules biſpid.

13. Oldenlandia fœtida. *Stinking Oldenlandia.*
Forſt. flor. auſtral. n. 55.
Umbel terminating trichetomous, leaves ſpatulate.

14. Oldenlandia debilis. *Weak Oldenlandia.*
Forſt. flor. auſtral. n. 56.
Umbels axillary pedunckled few-flowered, leaves ovate ſeſſile.

15. Oldenlandia tenuifolia. *Fine-leaved Oldenlandia.*
Forſt. flor. auſtral. n. 57. *Burm. ind.* 47. *t.* 14. *f.* 1.
Pedunckes axillary ſolitary one-flowered, leaves linear-ſubulate.

16. Oldenlandia zanguebarica. *Africa Oldenlandia.*
Lour. cochinch. 78.
Pedunckes few-flowered, corollas ſalver ſhaped, leaves linear.

DESCRIPTION, &c.

Theſe are herbaceous plants, ſome of them inclined to be woody. Pedunckes terminating or axillary, one or many-flowered. Leaves joined at the baſe by a ciliary sheath [a].

1. Stems about a foot high, ſimple jointed, even, round, with a groove on each ſide. Leaves oppoſite, ſeſſile, narrow-lanceolate with the midrib ſcored, acuminate, rugged. Stipules membranaceous, divided into briſtles, as in Spermacoce, ſome of which are capillary, and longer than the flowers. Capſule roundiſh, two-celled, many-ſeeded, connate with the four acuminate leaflets of the calyx [b].—Native of Amboina and Jamaica, on open hills.

2. Stem creeping, filiform, branched, jointed, rooting at every joint, even. Leaves oppoſite, ſubpetioled, quite entire, even, ſmall. Flowers axillary, ſolitary, alternate, ſubſeſſile. Capſule ſubglobular, covered with blunt, hollow pellucid hairs, two-celled, many-ſeeded.

Stem ten inches high, ceſpitoſe, herbaceous, branched, procumbent, jointed, creeping. Leaves linear-lanceolate, quite entire, ſmooth, oppoſite, ſeſſile. Flowers white, axillary, ſolitary, on very ſhort pedunckles. Corolla four-cleft, bell-ſhaped. Capſule calycine, two-celled, many-ſeeded, opening irregularly. Rumphius's figure repreſents the leaves wider and rounded, whereas they appeared to Loureiro to be ſtrict and acute.

Native of the Eaſt Indies, and of China near Canton [c].

[a] Juſſieu. [b] Linn. mant. [c] Loureiro.

3. This resembles the preceding very much, but the capsule is smooth.—Native of the Cape of Good Hope, where it was found by Thunberg [a].

4. Stems branched and creeping. Leaves opposite, lanceolate-ovate, subpetioled, quite entire. Flowers axillary, few, each on its proper peduncle. Germs hispid.—Native of Virginia and Jamaica. In the latter, according to Browne, it is found frequently in the waters, and then it grows of a length proportioned to the depth of the stream, with which it yields and bends: both leaves and stalks are then of a reddish colour. Sometimes it is found upon the banks, and then it is of a green colour and a creeper, generally running more or less according to the quantity of moisture [b].

5. Stem herbaceous, erect, jointed, dichotomous. Leaves quite entire, narrower at the base, ending in the petioles, opposite. Flowers two together at a joint on elongated peduncles, pendulous; or a bifid peduncle bears two flowers.—Native of the East Indies. Annual [c].

6. This is a small biennial, rarely triennial plant. Root very long, from one to two feet, slender, with few lateral fibres, when fresh the bark is orange-coloured; in the cultivated sort it is longest, and with fewer fibres. Stem in the cultivated sort erect, round, jointed below, very ramous, somewhat scabrous, from six to twelve inches high. Branches axillary, the under opposite, decussated, spreading horizontally, and nearly as long as the stem, above alternate or in pairs from the axils.—In the wild sort there is scarce any stem, but many diffuse scraggy branches, with their flower-bearing extremities erect. Leaves opposite, or by threes or fours, sessile, linear, pointed, scabrous, spreading, from half to three quarters of an inch long, by one-third of an inch in breadth. In the axils of the principal leaves are generally fascicles of smaller leaves. Stipules connecting, ciliate. Flowers terminating, small, white, very numerous, the whole forming a large umbel, composed of small three-cleft umbellets. Bractes minute, awl-shaped.

Native of the East Indies, growing in very light dry sandy ground near the sea: flowering during the latter part of the wet season; and the seed ripe in january. It is much cultivated on the coast of Coromandel, where its roots descend to a great depth in the sand. It is used in dying red, purple, a deep clear brown, orange, and to paint the red figures on chints; of all which Dr. Roxburgh has given a full account.

The woody part of the Chay root, as it is called, is white and tasteless; it is the bark only that is possessed of the colouring principle: when fresh it is orange-coloured, tinges the spittle yellow, and leaves a slight degree of acrimony on the point of the tongue for some hours after chewing: to appearance it loses its yellow colour in drying, but still retains the above property on being chewed. It impregnates cold water or spirits with a straw colour; to boiling water it gives a brownish porter colour. The watery infusions and spirituous tinctures are changed into a bright and deep red by alkaline substances; and are rendered paler, or nearly destroyed, by acids. The colouring powers of this root is said to improve by keeping three or four years. When the wild sort can be had in any quantity, it is esteemed one-third or one-fourth stronger, and yields a better colour: and when these roots can be had of two years growth, they are reckoned still better.

This plant is the Thseri-vello of the Telingas; and the Saya-ver, or Imburel of the Tamuls. The Telinga physicians do not give any part of the plant a place in their Materia Medica; but the Malabar physicians say that the roots cure poisonous bites, colds and cutaneous disorders, and warm the constitution [d].

This plant has been introduced into the island of Jamaica.

7. This is a diffused plant. Leaves opposite, petioled, quite entire, veined, nerved. Umbels few-flowered, peduncled. Calyxes bell-shaped.

[a] Linn. suppl. [b] Linn. spec. [c] Linn. syst. [d] Rexburgh.

Native of Java, where it was found by Thunberg [e].

8. This is a low annual plant, seldom above three or four inches high, dividing into many branches which spread near the ground. Leaves long, narrow and opposite. Flower-stalks axillary, an inch or little more in length, and dividing into three or four smaller foot-stalks; on the top of each of these stands one small white flower.

[According to Browne, it rises generally to the height of ten or fourteen inches: the peduncles are sometimes simple, but oftener branched; and rise immediately from the axils, or shoot from the top of the smaller ramifications: all the parts of the plant are very delicate.

Linnæus describes the stems, to be almost prostrate, ascending, four-cornered, even, with opposite branches. Leaves opposite, even, marked with a longitudinal line, the length of the internodes. Stipules opposite, very blunt, connecting the leaves, with three awns at the tip, as in Spermacoce; by which also it is allied to Houstonia. Peduncles alternate, solitary, lateral, filiform, naked, each within each stipule, the length of the leaf, terminated by an umbel of about four flowers, without an involucre. Flowers white.

According to Gærtner, the capsule is inferior, small, crowned with the distant toothlets of the calyx, subglobular, twin, two-celled, opening at top by a transverse chink: partition contrary to the chink. Receptacle oblong, fungous, excavated, having a lateral peduncle, inserted into the lower part of the partition, free above, one to each cell. Seeds very numerous and small, subglobular, shagreened, ferruginous.

Native of Jamaica. Introduced before 1739, by Mr. Robert Millar [f].

9. Stem almost upright, even, dichotomous. Leaves opposite, acute, quite entire, even. Panicle leafless. Fruits even [g].

Stem herbaceous, manifold, diffused, suberect, six inches high. Leaves lanceolate, subsessile, smooth, somewhat fleshy. Flowers purple, on a long common peduncle. Capsule calycine, twin, turbinate-round, two-celled, many-seeded, crowned with the four sharp teeth of the calyx [h].—Native of the East Indies.

Loureiro remarks, that Mollugo zeylanica of Burmann, though it seems like this in the flower, yet by no means agrees with it in its stellate leaves, and indeed it is doubtful whether it be an Oldenlandia.

10. This resembles Oldenlandia biflora, but is larger, and half a foot high. Stem erect, pubescent. Leaves opposite, sessile, quite entire, pubescent. Peduncles axillary, solitary, simple, bifid at top, shorter than the leaves. Petals five, small, white tinged with red. Calyx five-toothed, pubescent. Stamens five. Pistil one.—Koenig sent it from Tranquebar.

11. The appearance of this is different from that of the Oldenlandias. Stems branched, decumbent. Leaves entire, sessile. Flowers axillary, sessile or on very short peduncles. Calyx five-cleft with a globular tube. Petals five, minute, white. Stamens five. Styles two. Capsule two-celled, two-valved.—Koenig sent this also from Tranquebar.

12. Root branched, slender. Stems depressed, angular, branched. Leaves opposite, petioled, broad-ovate, quite entire, somewhat hairy. Flowers on short pedicels. Fruit twin, four-toothed.—Sent from the East Indies by Koenig [i].

13, 14. Natives of the island of Tonga-tabu in the South Seas.

15. Native of the East Indies; and of the island of Tanna in the South Seas [k].

16. Stem herbaceous, manifold, eight inches high. Leaves quite entire, smooth, sessile, opposite. Peduncles erect, terminating. Corolla four-cleft, purple. Stigma lanceolate. Capsule calycine, twin, two-celled, many-seeded. Stamens four, short.—Native of the Eastern coast of Africa [l].

Loureiro remarks, that he never saw a flower of Oldenlandia with four petals. Other little differences

[e] Linn. suppl. [f] Hort. kew. [g] Linn. spec. [h] Loureiro. [i] Retzius. [k] Forster. [l] Loureiro.

that occur, are perhaps (in his opinion) ſcarcely ſufficient to ſeparate this genus from Hedyotis.]

PROPAGATION AND CULTURE.

Sow the ſeeds early in the ſpring on a hot-bed, and when the plants are come up, tranſplant them to another hot-bed, or into ſmall pots plunged into the bark-bed. Water and ſhade them until they have taken root; then give them free air in warm weather, and frequently refreſh them with water. Some ſeeds will ripen in July, gather them from time to time, as they become ripe; for there will be freſh flowers produced until autumn. Or if the ſeeds be permitted to ſcatter in the pots, the plants will ſoon appear, and will live through the winter in the ſtove, and flower early the following ſpring.

[OLDENLANDIA. See *Thardia*.

OLD-MAN'S-BEARD. See *Clematis* and *Geropogon*.]

OLEA. (*From* ὄλεος, *which is from* λεῖος, *Lævis, ſmooth.* Olea *is commonly put for the tree*; Oliva *for the fruit*; *and* Oleum *for the juice of the fruit, but this is not conſtant.*)

Lin. gen. n. 20. *Reich. n.* 20. *Schreb. n.* 25. *Tournef. t.* 370. *Vaill. mem. par.* 1722. *Juſſ.* 105. *Gærtn. t.* 93.

Claſs. 2. 1. Diandria Monogynia.

Nat. order of *Sepiariæ*. *Jaſmineæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, ſmall, deciduous: *mouth* four-toothed, creſt.

COR. one-petalled, funnel-form: *tube* cylindrical, the length of the calyx: *border* four-parted, flat; *ſegments* ſubovate.

STAM. *Filaments* two, oppoſite, awl-ſhaped, ſhort. *Anthers* creſt.

PIST. *Germ* roundiſh. *Style* ſimple, very ſhort. *Stigma* bifid, thickiſh, with the clefts emarginate.

PER. *Drupe* ſubovate, ſmooth, one-celled.

SEED. *Nut* ovate-oblong, wrinkled, (ſubbilocular, *G.*)

OBS. O. americana *has male and female flowers on the ſame plant with the hermophrodites; the nut obovate, ſubſtriated, perforated at the baſe.*

ESSENTIAL CHARACTER.

Cor. four-cleft, with ſubovate ſegments. *Drupe* one-ſeeded.

SPECIES.

1. Olea europæa. *European Olive.*
Lin. ſpec. 11. *Reich.* 1. 19. *Willd.* 44. *mat. med.* 37. *Woodv. med. bot.* 369. *t.* 136. *Forſk. deſcr.* 8. 802. *Gron. ureut. n.* 6. *Scop. carn. n.* 5. *Plenck, ic. t.* 11. *Gærtn. fruct.* 2. 75. *Mart. in Virg. georg.* 146. *it.*
α. O. communis. *Common European Olive.*
Ait. hort. kew. 1. 13. *Lin. hort. cliff.* 4.
O. ſylveſtris. *Mill. dict. n.* 3. *Raii hiſt.* 1544.
O. ſylv. folio duro ſubtus incano. *Baub. pin.* 470. *Blackw. t.* 213.
Leaves lanceolate flat hoary underneath.
β. O. vermicoſa. *Warted Olive.*
Willd. Linn. ſpec. 44.
O. europæa. *Thunb. prodr.* 2.
Leaves lanceolate flat villoſe underneath, branches twirted.
γ. O. longifolia. *Long-leaved European Olive.*
Ait. hort. kew. 1. 13.
O. gallica. *Mill. dict. n.* 1.
Leaves linear-lanceolate flat ſilvery underneath.
δ. O latifolia. *Broad-leaved European Olive.*
Ait. hort. kew. 1. 13. *Lin. hort. cliff.* 4.
O. hiſpanica. *Mill. dict. n.* 2.
O. ſativa. *Baub. pin.* 472. *Raii hiſt.* 1541. *Blackw. t.* 199.
Olea. *Dod. pempt.* 821. *Duham. arb.* 2. 57.
Leaves oblong flat hoary underneath.
ε. O. ferruginea. *Iron-coloured European Olive.*
Ait. hort. kew. 1. 13.
Leaves lanceolate ferruginous underneath.
ζ. O. obliqua. *Twiſted-leaved European Olive.*
Ait. hort. kew. 1. 13.
Leaves oblong, bent obliquely pale underneath.

η. O. buxifolia. *Box-leaved European Olive.*
Ait. hort. kew. 1. 13.
Leaves oblong-ovate, branches ſpreading divericated.
Leaves lanceolate quite entire, racemes axillary contracted.

[2. Olea capenſis. *Cape Olive.*
Lin. ſpec. 11. *Reich.* 1. 19. *Willd.* 45. *hort. cliff.* 4. *Berg. cap.* 1. *Thunb. prodr.* 2.

α. O. coriacea. *Leathery-leaved Cape Olive.*
Ait. hort. kew. 1. 13. *Dill. elth.* 193. *t.* 165. *f.* 194. (Liguſtrum).
Sideroxylum ſolis ſubrotundis integris. *Burm. afr.* 234. *t.* 81. *f.* 2.
Leaves ovate-oblong rigid flat, petiales red.
β. O. undulata. *Wave-leaved Cape Olive.*
Ait. hort. kew. 1. 13.
S. fol. oblongis integris. *Burm. afr.* 233. *t.* 81. *f.* 1.
Leaves elliptic waved, petioles green.
Leaves ovate quite entire, racemes panicle-ſhaped divaricate.

3. Olea americana. *American Olive.*
Lin. ſyſt. 57. *Reich.* 1. 19. *Willd.* 45. *mant.* 24. *Caſtell. cat.* 1. *t.* 61. (Liguſtrum).
Leaves lanceolate-elliptic quite entire, racemes narrowed, all the braëtes permanent connate ſmall.

4. Olea cernua. *Nodding-flowered Olive.*
Lin. ſpec. Willd. 45. *Vahl ſymb.* 3. 3. *Lamarck encycl.* 1. 8. *f.* 2.
Leaves oblong lanceolate very blunt, racemes axillary ſimple, flowers drooping.

5. Olea apetala. *Apetalous Olive.*
Lin. ſpec. Willd. 45. *Vahl ſymb.* 3. 3.
Leaves elliptic, flowers in racemes apetalous.

6. Olea excelſa. *Laurel-leaved Olive.*
Lin. ſpec. Willd. 46. *Vahl ſymb.* 3. 3. *Ait. hort. kew.* 1. 14.
Leaves elliptic acute, braëtes perfoliate, the loweſt cup-ſhaped permanent, the upper ones leafy large deciduous.

7 Olea fragrans. *Sweet-ſcented Olive.*
Lin. ſyſt. 57. *Willd.* 46. *Thunb. jap.* 18. *t.* 2.
Olinanthus fragrans. *Lour. cochinch.* 29. 35.
Quai-ſa. *Oſb. it.* 250. *engl. edit.* 2. 12.
Mokſei. *Kempf. amoen.* 5. 844.
Leaves lanceolate ſerrate, pedunckes lateral aggregate one-flowered.

DESCRIPTIONS, *&c.*

Theſe are evergreen trees. Leaves very ſeldom alternate. Flowers in panicles, axillary or terminating. The firſt ſpecies has one ſeed frequently abortive.[1]

1. α. The wild Olive grows naturally in woods, in the South of France, Spain and Italy, and is therefore not cultivated. The leaves are much ſhorter and ſtiffer than thoſe of the cultivated Olive. The branches are frequently armed with thorns, and the fruit is ſmall and of no value.

[β. Native of the Cape of Good Hope. Given by Thunberg as the common European Olive, of which it is a variety.]

γ. The inhabitants of the South of France chiefly cultivate this, from which they make the beſt oil, a great branch of trade in Provence and Languedoc; the young fruit is alſo the moſt eſteemed when pickled. Of this there are ſeveral varieties.

δ. This is chiefly cultivated in Spain, where the trees grow to a much larger ſize than the preceding; the leaves are much larger, and not ſo white on their under ſide. The fruit is near twice the ſize of the Provence Olive, but of a ſtrong rank flavour, and the oil is too ſtrong for moſt Engliſh palates.

The Olive ſeldom becomes a large tree; but two or three ſtems frequently riſe from the ſame root, from twenty to thirty feet high, putting out branches almoſt their whole length, covered with a gray bark. Leaves ſtiff, about two inches and a half long, and half an inch broad in the middle, gradually diminiſhing to both ends, of a dively green on their upper ſide, and hoary on their under, ſtanding oppoſite. The flowers are produced in ſmall axillary bunches; they are ſmall, white, and have ſhort tubes, ſpreading open at top.

[1] Juſſieu.

[The

[The fruit is a superior berried drupe, of an oblong spheroidal form, and of a yellowish green colour, turning black when ripe: flesh hardish, thick, glaucous: shell bony, ovate-oblong, acuminate at both ends, above at the tip marked with two oblong lateral callufes, the reft of the furface very obfcurely wrinkled; it is thick, and is divided within into two cells; one of them however is very frequently obliterated; one only being fertile, and that lined with a highly polifhed cartilaginous cruft. Receptacle filiform, fpringing from the bottom of the cell, and faftened to the fide of it, reaching upwards to the feed, and inferted a little below the tip into the umbilical fcar. Seed oblong, roundifh, acuminate downwards, pale dun or ftraw-coloured*.

The common mode of making oil from Olives in the kingdom of Naples, is to crufh the fruit to a paffe with a perpendicular mill-ftone, running round a trough. This paffe is put into flat round baskets, made of rufhes, piled one upon another under the preis. After the firft preffure, fcalding water is poured into each baffcet, its contents ftirred up, and the operation repeated till no more oil can be fkimmed off the furface of the tubs beneath. By this method the oil is feldom pure, keeps ill, and foon grows rancid.

Another procefs is recommended, which is performed by pounding the fruit in a mortar. A handful of the crufhed fubftance is thrown into a long woollen bag, which is rubbed very hard upon a floping board, and then wrung; afterwards hot water is added, and it continues to be preffed as long as a drop of oil can be drawn from it. This is fuppofed to have been the original mode of extraction, and if performed by a fkilful ftout workman, to be much more effectual than the common one †.

The Olive, in all ages, has been held in peculiar eftimation, as the bounteous gift of heaven. It is ftill conidered as emblematic of peace and plenty; and the great quantity of oil which it produces in fome countries, effectually realizes the latter of thefe bleffings.

Unripe Olives pickled, efpecially the Provence and Lucca forts, are to many perfons extremely grateful, and are fuppofed to excite appetite and promote digeftion. They are prepared by repeatedly fteeping them in water, to which fome add alkaline falt or quick lime, in order to fhorten the operation; after this they are waffied, and preferved in a pickle of common falt and water, to which an aromatic is fometimes added.

But the principal confumption of Olives is in the preparation of common falad oil. The beft is of a bright pale amber colour, bland to the tafte, and without any fmell. It becomes rancid by age, efpecially if kept in a warm place. It congeals by cold at 38° of Fahrenheit's thermometer, and does not become rancid if kept in a degree of cold equal to the freezing point of water. All the mild expreffed oils of vegetables are nearly of the fame nature; a preference however is generally given to the moft fluid; hence the oils of Olives and Almonds are moft commonly directed for internal ufe in medicine. Oil, in fome fhape, forms a confiderable part of our food, both animal and vegetable, and affords much nourifhment: but with fome oily fubftances do not unite with the contents of the ftomach, efpecially where acids abound. Oil as a medicine is fuppofed to correct acrimony, to lubricate and relax the fibres, and hence is prefcribed in coughs, catarrhal affections and ereufips; in worm cafes, in nephritic pains, fpafms, colics, conftipations of the bowels, &c. Externally it has been found an ufeful application to bites and ftings of poifonous animals, to burns, tumours, &c. both alone and mixed in liniments and poultices.

Oil was much ufed by the ancients to rub over their bodies: this has been found of great fervice in dropfies, particularly in afcites: it is faid to have been fuccefsful even in rabies canina, but having been fince tried in a fimilar cafe without fuccefs, little confidence is to be placed on a folitary inftance. Though the effects of oil taken internally extend over the primæ viæ, yet it may be doubted, whether it produces any medicinal effect after having paffed into the blood.

Oil enters feveral officinal compofitions, and when united with water, by the intervention of alkali, is ufually given in coughs, hoarfenefs, &c.‡

The Olive is commonly fuppofed to be a native of the fouthern countries of Europe: but it feems probable that although it be now found wild in fome parts of our continent, it came originally from Afia. It grows abundantly about Aleppo, mount Lebanon, and many parts of Paleftine. In the northern parts of Africa; and one of the varieties (β) at the Cape of Good Hope.

It appears by the catalogue of the botanic garden at Oxford, that it was cultivated there in 1648*.]

Several Olive trees were planted againft a warm wall at Camden houfe near Kenfington, which fucceeded very well, till their tops advanced above the wall; after which they were generally cut down to the top of the wall in winter. Thefe in 1719 produced a good number of fruit, which grew fo large as to be fit for pickling, but after that time their fruit feldom grew to any fize. With a little protection in fevere froft, the Olive-tree may be maintained againft a wall, in the latitude of London; but in Devonfhire there are fome of thefe trees, which have grown in the open air many years, and are feldom injured by froft, but their fummers are not warm enough to bring the fruit to maturity.

The olive was, by the ancients, confidered as a maritime tree, and they fuppofed it would not thrive at any diftance from the fea; but by experience, we find it will fucceed very well in any country, where the air is of a proper temperature, though it is found to bear the fpray of the fea better than moft other trees.

[The varieties of this tree are numerous, as in moft vegetables that have much attracted the attention of mankind. Several diftinctions from the form of the leaves have been recited in the enumeration of the fpecies: others are taken from the fhape, fize and colour of the fruit.

Virgil enumerates only three varieties—

"Orchites, et radii, et amara pauſia bacca."

The firft bears a fmall round fruit, called Olivola by Cæfalpinus, and Olivaftre by Matthiolus. The Radius is a long Olive, fo called from its fimilitude to a weaver's fhuttle. The Pauſia is called bitter becaufe it was gathered unripe; and then it has a very auftere tafte.

Cato mentions eight, and Columella ten varieties of Olives, among which thefe three of Virgil are enumerated. Many more are recited by Pliny and other authors. It is remarkable that Matthiolus informs us, there were no more than three forts known in his time in Tufcany †.]

In Languedoc they chiefly propagate the Cormean, the Ampoulan, and Mourrau. [In Provence the fmall oblong, the oblong dark green, the fmall roundifh white or Aglandan, the large fleſhy or royal, the large round or Ampoulan, and the fmall round reddifh-black Olive. In Spain they have feveral varieties of their large fruit. In Italy, the fmall Lucca Olive is much eſteemed: and in the fouthern provinces of the kingdom of Naples, where this tree is much cultivated, they have, 1. The Salentine Olive, called by the peafants Ogliarola. 2. Faule, which bears a fmall Olive, kept for eating. 3. Cellina, Scuranefe or Cafcia, yielding leſs oil than the firft in the proportion of two to three; but the tree grows to a greater fize, refifts weather better, and is more fruitful. 4. A Wild fort; the fruit of which grows white as it ripens; the ancients fpeak of fuch a fort; but this is not cultivated ‡.

2. Cape Olive is a fmall tree or rather fhrub, not branching much. Trunk ftraight, with many joints; bark fubaurate, blackifh brown with aſh-coloured dots and lines. Leaves conjugate, decuſſated, fometimes fituated in the end, but commonly entire, denſe and rigid, moderately concave, paler or deeper green, but

* Garner. † Salisburne's travels, 1. 373.

* Woodville. † Hort. kew.
‡ Virg. georg. ed. Mart. 2. 86. not. § Salisburne.

always

always paler underneath, with oblique ſmooth veins, leſs conſpicuous underneath than above. From the axils and at the end of the branches the flowers come out in racemes in june and july, ſometimes thinly diſpoſed, but ſometimes ſo numerous that the racemes hang down. The corolla is white and ſmall.

Native of the Cape of Good Hope[1]. Cultivated 1732 by James Sherard, M. D.[2] Dillenius ſpeaks of the plant at Eltham as being then, ten or eleven years old.

3. Leaves oppoſite, evergreen, petioled, ſhining. Racemes ſhort, axillary, brachiate, with oppoſite pedicels. Segments of the corolla revolute. Style ſo ſhort as to be ſcarcely any. Stigma bifid. Drupe globular, even, handſome. Nut obovate, ſubſtriated, perforated at the baſe. There are male and female flowers on the ſame plant with the hermaphrodites[3].

Native of Carolina and Florida. Cultivated in 1758 by Mr. Miller. It flowers in june[4].

4. Branches round, ſmooth, with an aſh-coloured bark, and raiſed ſcattered dots, compreſſed a little at the top. Leaves oppoſite, coriaceous, broad-lanceolate, attenuated at the baſe, acute, rounded at the tip, frequently emarginate, quite entire, ſmooth, even, veinleſs, an inch and half long, bent back at the edge. Petiole a quarter of an inch long, convex underneath. Racemes a little longer than the petiole, two or three, but ſometimes ſolitary. Pedicels oppoſite. Bracte minute, ovate at the baſe of the pedicels, and two others lanceolate under the calyx. Flowers twice as large as in the common ſort.—Native of Madagaſcar, where it was found by Thouin.

5. Branches round at bottom, with an aſh-coloured dotted bark, alternately compreſſed towards the top. Leaves oppoſite, two inches long and more, ſpreading very much, ſharp at both ends, quite entire, coriaceous, ſmooth, without veins or nerves. Petiole half an inch long. Racemes axillary, oppoſite, ſubſolitary, quite ſimple, a little longer than the petiole. Pedicels oppoſite. Bractes none, except two oppoſite ovate ſcales at the baſe of the common peduncle. Calyx four-cleft, with minute acute ſegments. Filaments very ſhort. Anthers diverging.—Native of New Zealand.

6. Branches round, with an aſh-coloured bark, ſmooth, having raiſed dots ſcattered over them; branchlets alternately compreſſed at top, as in all the ſpecies, with the joints narrower at the baſe, a little dilated above. Leaves oppoſite and alternate, two or three inches in length, or a little longer, an inch and half wide, attenuated to both ends, quite entire, ſmooth, even, coriaceous, veinleſs, paler underneath, obſcurely nerved. Petiole half an inch long, flat above, convex underneath. Racemes axillary, oppoſite, commonly ſolitary, ſeldom in pairs, an inch long, ſimple. Peduncle from a cyathiform bracte, bifid, with divaricated ſegments, like the pedicels, angular. Pedicels oppoſite, one-flowered, the length of the corolla. Bractes oblong, membranaceous, concave, ſometimes villoſe at the edge, the upper ones larger and deciduous, the four loweſt permanent. The flowers twice as large as thoſe of the common Olive. Calyx very ſmall, with very blunt teeth. Corolla four times as large as the calyx, deeply four-cleft. Filaments ſcarcely any. Anthers the length of the corolla. Germ conical, acuminate, ſhorter than the anthers[5].

Native of Madeira, where it was found by Mr. Francis Maſſon. Introduced in 1784[6].

7. This is a large tree. Branches and branchlets trichotomous, obſcurely four-cornered, ſmooth. Leaves deciſſated, oblong, ſharp, a little bent back at the edge, parallel-nerved, reticulated, ſmooth, deep green above, paler underneath, ſpreading, frequent on the branchlets, a finger's length. Petioles ſemicylindric, grooved, ſmooth, a quarter of an inch in length. Flowers on the branchlets, aggregate in umbels, about ſix or eight together, peduncles filiform, one-flowered, ſmooth, half an inch long. Calyx very ſmall, obſcurely four-toothed, whitiſh, ſmooth. Corolla wheel-ſhaped, yellowiſh-white, with ſcarcely any tube, and a ſpreading four-cleft border; the ſegments ovate, blunt, concave, thickiſh. Filaments very ſhort, inſerted into the mouth of the tube: anthers ovate, largiſh, twin[7].

Loureiro, taking this tree to be of a different genus from the Olive, named it *Oſmanthus*, from the remarkable ſweetneſs of the flower. He never could find any fruit, and ſuppoſed the flowers to be always abortive. He deſcribes it as an upright ſhrub, about ſeven feet in height, with aſcending branches, ſometimes climbing. Leaves curved inwards, ſmooth, oppoſite, on ſhort petioles. Flowers pale, ſmall, on ſhort, ſubfaſtigiate, axillary and terminating racemes, on ſhort pedicels. Filaments flat. Anthers lateral, two on each filament. Styles two, thick, awl-ſhaped, embracing the germ with their dilated baſe.

Oſbeck mentions it as one of the ornamental trees in the Chineſe gardens. He ſays it is about ſix yards high, with ſmall, white, ſweet-ſcented flowers, three or four in one involucre.

Native of Cochinchina, China and Japan. It was introduced in 1771, by Benjamin Torin, Eſq. and flowers in july and auguſt[8].]

PROPAGATION AND CULTURE.

In Languedoc and Provence, they propagate the Olive by truncheons, ſplit from the roots of the trees. When their tops are killed by hard froſts in winter, they ſend up ſeveral ſtalks from the root; when theſe are grown pretty ſtrong, they ſeparate them with an axe from the root, in doing which they are careful to preſerve a few roots to them. They are cut off in the ſpring, after the danger of froſt is over, and planted about two feet deep in the ground, covering the ſurface with litter or mulch, to prevent the ſun and wind from penetrating the ground and drying the roots: when the plants have taken new root, they ſtir the ground, and deſtroy the weeds.

In countries where the inhabitants are curious in making oil, they graft their trumcheons with that ſort of Olive which they prefer.

The Olive will grow in almoſt any ſoil, but when it is planted in rich moiſt ground, the tree grows larger and makes a finer appearance than in poor land; but the oil is not ſo good as in a leaner ſoil. Calcareous ground is eſteemed the beſt for theſe trees; the oil being finer and keeping longer than in any other.

[Accordingly we commonly find the Olive in the South of Europe, on white marl or potter's clay, or on limeſtone rock, in mountainous ſituations, unfit for Vines. Virgil's direction correſponds:

> " Difficiles primum terræ, collesque maligni,
> " Tenuis ubi argilla, & dumoſis calculus arvis,
> " Palladia gaudent ſylva vivacis Olivæ
> " Indicio eſt, tractu ſurgens oleaſter eodem
> " Plurimus, et ſtrati baccis ſylveſtribus agri."

Stubborn lands and unkindly hills, where the ſoil is a potter's clay mixed with pebbles, and producing only buſhes, are adapted to the Olive, which is a long-lived ſlow-growing tree. That ſuch lands are congenial to this tree is evident from the abundance of wild Olives that ſpring in them, and the quantity of berries ſtrewed over them. It may be remarked that *Argilla* is not common clay, but white potter's clay; as appears from Columella: " Creta, qua utuntur " figuli, quamque nonnulli *argillam* vocant, inimicif- " ſima eſt viti, nec minus jejuna ſabulo." It may be remarked farther, that *Creta* is never put for chalk, of which there is none in Italy, but for this potter's-clay, or a ſort of white marl.

Virgil, Cato, and Columella recommend the propagation of the Olive by truncheons as the beſt method: and Virgil affirms that even pieces of the trunk will grow. For the culture of Olives, ſee Bernard de l'Olivier. Couture, Traité de l'Olivier, 1786. Duhamel, Traité des Arbres, &c.]

In England the Olive may be propagated by laying down the tender branches (in the manner practiſed for other trees,) which ſhould remain undiſturbed two

[1] Dillenius. [2] Hort. kew. [3] Hort. kew. [4] Vahl. [5] Hort. kew. [6] Thunberg. [7] Linn. mant. [8] Hort. kew.

years;

years; in which time they will have put out roots, and may then be taken off from the old plants, and transplanted either into pots filled with fresh light earth, or into the open ground in a warm situation. The beſt ſeaſon for tranſplanting is the beginning of april, when you ſhould, if poſſible, take the opportunity of a moiſt ſeaſon; and thoſe which are planted in pots, ſhould be placed in a ſhady part of the greenhouſe until they have taken root; but thoſe planted in the ground ſhould have mulch laid about their roots, to prevent the earth from drying too faſt, and now and then refreſhed with water; but you muſt by no means let them have too much moiſture, which will rot the tender fibres of their roots, and deſtroy the trees. When the plants have taken freſh root, thoſe in the pots may be expoſed to the open air, with other hardy exotics, with which they ſhould be hooſed in winter, and treated as Myrtles, and other leſs tender trees and ſhrubs; but thoſe in the open air will require no farther care until the winter following, when you ſhould mulch the ground about their roots, to prevent the froſt from penetrating deep into it; and if the froſt ſhould prove very ſevere, you ſhould cover them with mats, which will defend them from being injured thereby; but you muſt be cautious not to let the mats continue over them after the froſt is paſt, leſt by keeping them too cloſe, their leaves and tender branches ſhould turn mouldy for want of free air; which will be of as bad conſequence to the trees, as if they had been expoſed to the froſt, and many times worſe; for it ſeldom happens, if they have taken much of this mould, or have been long covered, ſo that it has entered the bark, that they are ever recoverable again; whereas it often happens, that the froſt only deſtroys the tender ſhoots, but the body and larger branches remaining unhurt, put out again the ſucceeding ſpring.

Theſe trees are generally brought over from Italy every ſpring, by the perſons who import Orange-trees, Jaſmines, &c. from whom they may be procured pretty reaſonable; which is a better method than to raiſe them from layers in this country, that being too tedious; and thoſe which are thus brought over, have many times very large ſtems, to which ſize young plants in this country would not arrive in ten or twelve years. When you firſt procure theſe ſtems, you ſhould (after having ſoaked their roots twenty four hours in water, and cleaned them from the filth they have contracted in their paſſage) plant them in pots filled with freſh light ſandy earth, and plunge them into a moderate hot-bed, obſerving to ſcreen them from the violence of the ſun in the heat of the day, and alſo to refreſh them with water, as you ſhall find the earth in the pots dry. In this ſituation they will begin to ſhoot in ſix weeks or two months after, when you ſhould let them have air in proportion to the warmth of the ſeaſon; and after they have made pretty good ſhoots, you ſhould inure them to the open air by degrees, into which they ſhould be removed, placing them in a ſituation where they may be defended from ſtrong winds; in this place they ſhould remain till October following, when they muſt be removed into the green-houſe, as was before directed. Having thus managed theſe plants until they have acquired ſtrong roots, and made tolerable good heads, you may draw them out of the pots, preſerving the earth to their roots, and plant them in the open air in a warm ſituation, where you muſt manage them as was before directed for the young ones; and theſe will in two or three years produce flowers, and in very warm ſeaſons ſome fruit, provided they do well. The Laurea and Box-leaved Olives are the hardieſt, for which reaſon they ſhould be preferred to plant in the open air, but the firſt ſort will grow to be the largeſt trees.

[Olea fragrans may be increaſed from cuttings, in the ſame manner as Gardenia.

Olea barbadenſis. See *Bontia*.
—— malabarica. See *Melia*.
—— ſylveſtris. See *Elaagnus*.

Oleander. See *Nerium*.

Oleaster. See *Elaagnus*.

Olive. See *Olea*.

Olearia. See *Lychnis*.

Olusatrum. See *Smyrnium*.

Olus calappoides. See *Cycas*.
—— crudum. See *Apocynum*.
—— ſcrophium. See *Cucubalus*.
—— ſquillarum. See *Allochrum*.
—— vagum. See *Convolvulus*.

OLYRA. (Olyra of Homer, Herodotus, Hippocrates, Dioſcorides, &c.)

Lin. gen. n. 1045. *Reich. n.* 1136. *Schreb. n.* 1406. *Juſſ.* 33. *Swartz obſ.* 347.

Claſſ. 21. 3. Monoecia Triandria.

Nat. order of *Gramina*, *Graminea* or *Graſſes*.

GENERIC CHARACTER.

* *Male* Flowers, below the females.

Cal. *Glume* two-valved, one-flowered: *valves* equal, lanceolate: *outer* ſubventricoſe, terminating in a capillary, ſtraight, even *awn*; *inner* narrower, acute, folded in on both ſides.

Cor. none.

Nectary two-leaved, very ſmall: *leaflets* obovate, ſubemarginate, membranaceous, erect.

Stam. *Filaments* three, capillary, very ſhort. *Anthers* linear, acute at both ends.

* *Females* ſolitary, terminating on the ſame panicle, much larger than the males.

Cal. *Glume* two-valved, one-flowered, large, ſpreading: *valves* almoſt equal, ovate, concave, nerved: *outer* terminating in a long, awl-ſhaped, ſubflexuoſe *awn* villoſe at *bottom*: *inner* narrower, acuminate.

Cor. *Glume* two-valved, much ſhorter than the calyx, coriaceous, ſhining, awnleſs, blunt: *outer* much longer.

Nectary three-leaved, very ſmall: leaflets obovate, membranaceous, erect.

Pist. *Germ* oblong. *Style* filiform, almoſt the length of the calyx. *Stigma* capillary, pubeſcent.

Per. *Glume* of the corolla involving, filling.

Seed ovate.

ESSENTIAL CHARACTER.

Male. *Cal.* Glume one-flowered, awned. *Cor.* glume awnleſs, (*Cor.* none. *Sw.*)

Fem. *Cal.* Glume one-flowered, ſpreading, ovate. *Style* bifid. *Seed* cartilaginous.

SPECIES.

1. Olyra paniculata.

Swartz prodr. 21. *obſ.* 347.

O. latifolia. *Lin. ſpec.* 1379. *Reich. 4. 97. amoen.* 5 408. *Sloan. jam.* 1. 107. *t.* 64. *f.* 2. (Gramen paniceum). *Brown. jam.* 335. (Cola).

Panicle terminating, culm branched.

2. Olyra paniciflora.

Swartz prodr. 21. *ſuppl.* 125. *Leſſ. it.* 243. 100.

Flowers axillary.

DESCRIPTIONS, &c.

1. Roots fibrous, long, thicker. Culm erect, a fathom high, jointed, round, branched at bottom. Joints ſimple. Leaves ſheathing, as it were ſhortly petioled at the end of the ſheath, broad-lanceolate, acuminate, horizontal, ſpreading, ſmooth, ſtriated, marked with lines below. Sheaths pubeſcent. Panicle terminating, erect, ſpreading, many-flowered. Branches angular, rugged, flexuoſe. Male ſpikelets numerous, preſſed cloſe to the branches of the panicle, alternate, pedicelled, three commonly contiguous. Pedicels flexuoſe, filiform, ſhort. Female flowers ſolitary, terminating the male ſpikes, and three times the ſize of the males.

Native of Jamaica, in dry coppices; flowering from january to july [1]. Introduced in 1783, by Mr. William Forſyth [2].

2. This alſo is a native of Jamaica [1]. Loureiro has a third ſpecies, which he names O. orientalis.

Omphalandria. See *Omphalea*.

OMPHALEA. (*From* Ομφαλος, *umbilicus*. *Altered by Linnæus from* Omphalandria *of Browne.*

Lin. gen. Schreb. n. 1468. *Swartz prodr.* 95. *obſ.* 349. *t.* 10. *f.* 6. *Juſſ.* 392. Omphalandria. *Brown.*

Claſſ. 21. 8. Monoecia Monadelphia.

Nat. order of *Tricoccæ*. *Euphorbiæ*, Juſſ.

[1] Swartz. [2] Hort. kew. Swartz.

GENERIC CHARACTER.

* *Male* flowers.

CAL. *Perianth* four or five-leaved, spreading: *leaflets* two opposite larger, ovate, convex, coloured.

COR. none.

Nectary. Glands four, or a fleshy ring encircling the germ.

STAM. *Filament* one, columnar, thick, short. *Anthers* two, oblong, incumbent, connate at top, pollniferous at the edge: or one, plano-convex, trifid.

* *Female* flowers, in the same raceme.

CAL. *Perianth* five-leaved: *leaflets* three larger, ovate, encircling the germ.

COR. none.

PIST. *Germ* ovate. *Style* none. *Stigma* trifid.

PER. *Capsule* oblong or roundish, fleshy, bluntly triangular, three-celled, three valved.

SEEDS. *Nuts* solitary, ovate, hard.

ESSENTIAL CHARACTER.

MALE. *Cal.* four-leaved. *Cor.* none. *Filam.* columnar, with the anthers inserted into it.

FEM. *Cal.* five-leaved. *Cor.* none. *Stigma* trifid. *Capf.* fleshy, three-celled. *Nuts* solitary.

SPECIES.

1. Omphalea axillaris.
Swartz prodr. 95.
Racemes axillary, leaves distich ovate acuminate shining, on very short petioles, stipules mucronate, stem shrubby.

2. Omphalea caulifiora.
Swartz prodr. 95.
Racemes cauline scaly at the base, leaves distich oblong acute shining, stem arborescent.

3 Omphalea cordata.
Swartz prodr. 95. *obf.* 350.
O. diandra. *Lin. fpec.* 1377. *Reich.* 4. 118. *Brown. jam.* 334. *Aubl. guian.* 843. *t.* 328.
Racemes compound leafy terminating, leaves scattered cordate villose underneath, biglandular at the base, stem scandent.

4. Omphalea nucifera.
Swartz prodr. 95. *obf.* 351.
O. triandra. *Lin. fpec.* 1377. *Reich.* 4. 118. *amoen.* 5. 408. *Brown. jam.* 335. fed non *t.* 22. *f.* 4. (Sw.)
Racemes compound leafy terminating, leaves scattered oblong very smooth biglandular at the base, stem arborcous.

DESCRIPTIONS, *&c.*

1, 2. Natives of Jamaica.

3. Stems shrubby, scandent, subdivided, diverging, round, pubescent. Leaves alternate, acuminate, subcoriaceous, thick, entire, smooth, pubescent underneath; on longish, loose, biglandular petioles: glands depressed, roundish. Stipules at the base of the leaves, small, lanceolate, deciduous. Racemes branched, diverging, loose. Bractes lanceolate, pedicelled, obtuse, smooth, at the base of the racemelets; which are many-flowered; the flowers in clusters, peduncled, small, green. Calyx four-parted, with roundish segments, two of which are larger. Filament from the centre of a coloured concave disk, convex at top; anthers purple, inserted into the margin of the filament. Germ roundish, three-cornered. Style very short, fleshy, three-cornered. Stigma trifid, villose. Capsule large, yellowish, containing three brittle nuts, with oblong, angular kernels.

Native of rocky coppices in Jamaica, and other parts of the West Indies.

4. This is a small tree, with an upright even trunk, from twelve to fifteen feet high: the branches spreading horizontally, bent down, warted, subdivided, elliptic-elongated, alternate, scattered, a foot and half long, nodding, attenuated at the base, blunt at top, entire, very smooth, nerved. Petioles bent down, long, roundish, smooth. Glands in pairs, flat, depressed, round, perforated in the middle, distilling moisture. Racemes solitary, the length of the leaves, nodding, loose. Bractes petioled, subaxillary, oblong, entire, biglandular at the base. Racemelets alternate, divaricating, with two or three male flowers on a pedicel, and one female in the middle of each. Calyx five-leaved, three of the leaflets larger, ovate, convex, membranaceous at the edge, coloured. Nectary a fleshy, blood-red ring. Filament purple, from the middle of the disk. Anther plano-convex, purple, trifid, with three pollniferous incisures. Germ oblong, three-cornered, striated with six lines. Stigma perforated. Capsule pendulous large, roundish, obtusely three-cornered, containing three very hard, black, oblong nuts, with a whitish kernel in each surrounded by a yellow membrane. Cotyledons two-leaved, compressed, veined, the length of the kernel.

Native of Jamaica, where it is frequently cultivated. It is called by the English Cobnut, by the French Noisettier. The kernels are esculent and sapid, the cotyledons only being emetic. The branches and petioles on being broken pour out a tenacious watery liquor[a].

Cultivated in 1763, by Mr. Miller. It flowers in june and july[b].]

OMPHALODES. See *Cynoglossum*.

ONAGRA. See [*Jussiæa, Mentzelia,*] *Oenothera*.

ONE-BERRY. See *Paris*.

ONION. See *Allium*.

[ONOBROMA. See *Carthamus*.]

ONOBRYCHIS. See [*Astragalus, Campanula,*] *Hedysarum*, [*Theffium*.

ONOCLEA.
Lin. gen. n. 1170. *Reich. n.* 1287. *Schreb. n.* 1624. *Juff.* 15. Angiopteris. *Miscb.* 29.
Claff. 24. 2. Cryptogamia Filices.
Nat. order of *Filices* or *Ferns*.

GENERIC CHARACTER.

Capsules under the recurved and contracted pinnules of the frond, resembling pericarps.

SPECIES.

1. Onoclea fenfibilis.
Lin. fyft. 926. *Reich.* 4. 376. *mant.* 504. *hort. cliff.* 372. *Gron. virg.* 196. (Osmunda).
Polypodium fenfibile. *Mant. bifl.* 290.
Filix mariana, Osmundæ facie, racemifera. *Pluk. mant.* 80. *t.* 404. *f.* 2.
Filix indica, polypodii facie. *Mentz. pug.* 6. *t.* 10.—Osmundæ facie. *Bed. à Stapel.* 320.
Polypodium virginianum majus, Osmundæ facie, tenerum. *Mor. bifl.* 3. 563. *f.* 14. *t.* 2. *f.* 10.
Fronds pinnate, fubracemofe at the tip.

2. Onoclea polypodioides.
Lin. fyft. 926. *Reich.* 4. 376. *mant.* 506.
Fronds bipinnate, fructifications three-valved.

DESCRIPTIONS, *&c.*

1. Fronds thin, pale green, even; the divisions oppofite, wide, finuate, fo very tender, that on being touched or ever fo little compreffed, they wither and perifh[c].

Native of Virginia. Cultivated in 1758, by Mr. Miller[d]. It muft have been many years before in the Oxford garden, fince in the third volume of the Hiftoria Oxonienfis (1699) it is faid, that they had not been able to remark the fructification, though they had received it feveral years fince from Virginia, and had cultivated it.

2. Root creeping, fibform, fhining, rufous. Frond compound. Leaflets bipinnate, oppofite, fpreading. Pinnas fuboppofite, remote, linear, pinnatifid to the very midrib, blunt ish. Fructifications as in Polypodium, marginal towards the base of the toothlets, thin, flattifh, covered. Calyx three-valved, or membranaceous three-parted, cloven from the centre towards the base.

Obf. Fructifications rounded, covered with a membranaceous three-valved lid, fixed at the edge, feem rather to indicate this to be an Onoclea than of any other genus; although the other fpecies has pinnate leaves fomewhat racemofe at top.

Native of the Cape of Good Hope, in fiffures of the rocks near the top of the Table Mountain; where it was found by Koenig[e].]

ONONIS (*of Pliny. Ovonis of Theophraftus. Ononis of Dioscorides. From* ὄνος, *afinus, &* ὄνησις, *q. afini oblectamentum.*)

[a] Swartz. [b] Hort. kew. [c] Morifon. [d] Hort. kew. [e] Linn mant.

Lin. gen. n. 863. *Reich. v.* 935. *Schreb. n.* 1173. *Gærtn.* 154. *Juſſ.* 354. Anonis. *Tournef. t.* 408.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, almoſt the length of the corolla: *ſegments* linear, acuminate, ſlightly arched upwards; the loweſt under the keel.

COR. papilionaceous. *Banner* cordate, ſtriated, depreſſed at the ſides more than the other petals. *Wings* ovate, ſhorter by half than the banner. *Keel* acuminate, as long as or longer than the wings.

STAM. *Filaments* ten, connate in an entire cylinder. *Anthers* ſimple.

PIST. *Germ* oblong, villoſe. *Style* ſimple, riſing. *Stigma* blunt.

PER. *Legume* rhomb-ſhaped, turgid, ſubvilloſe, one-celled, two-valved, ſeſſile.

SEEDS few, kidney-form.

ESSENTIAL CHARACTER.

Cal. five-parted, with linear ſegments. *Banner* ſtriated. *Legume* turgid, ſeſſile. *Filaments* connate without a fiſſure.

SPECIES.

* *With ſubſeſſile flowers.*

[1. Ononis antiquorum.
Lin. ſpec. 1006. *Reich.* 3. 424. *Allion. pedem. n.* 1161. *Villars dauph.* 3. 426.
Anonis legitima antiquorum. *Tournef. cor.* 28.
Flowers ſolitary larger than the leaflet, lower leaves ternate, branches almoſt even ſpiny.]

2. Ononis ſpinoſa. *Tearny Reſt-harrow.*
Lin. ſyſt. 651. *fl. ſuec. n.* 637. *hort. cliff.* 359. *Gærtn. fruct.* 2. 343. *Retz. obſ.* 2. 21. *n.* 68. *prodr. ſcandin.* 732. *Hudſ. angl.* 312. *Wither. arr. ed.* 3. 627. *Sibth. oxon. n.* 616. *Knipb. cent.* 5. *n.* 61. *Regn. bot.* (l'Arrete-bocuf). *Villars dauph.* 3. 427. *Krock. ſileſ. n.* 1151. *Fl. dan.* 783. *Fl. ruſſ.* 129.
O. ſpinoſa β. *Lin. ſpec.* 1006. *Neck. gallob.* 303.
Anonis ſpinoſa. *Scop. carn. n.* 877. *Hall. helv. n.* 356. *Mor. hiſt.* 2. 17. 1.—flore purpureo. *Bauh. pin.* 389. *Park. theat.* 994. 1. *Raii hiſt.* 957. *ſyn.* 332.
Anonis. *Fuchſ. hiſt.* 60. *Riv. cent. t.* 69. *Blackw.* 301.—ſ. Reſta bovis. *Ger.* 1141. 1. *emac.* 1322. 1.—vulgaris purpurea ſpinoſa. *Bauh. hiſt.* 2. 391. 2.—Reſta bovis. *Trag.* 869.
β. Floribus albis. *White thorny Reſt-harrow.*
Flowers axillary in pairs, leaves ternate, upper ones ſolitary, branches thorny villoſe.

3. Ononis arvenſis. *Hairy Reſt-harrow.*
Lin. ſyſt. 651. *Reich.* 3. 425. *Wither. arr. ed.* 3. 627. *Sibth. exon. n.* 615.
O. mitis. *Mill. dict. n.* 2.
O. inermis arvenſis. *Hudſ. angl.* 313. 2.
Anonis ſpinis carens purpurea. *Bauh. pin.* 389.
A. non ſpinoſa purpurea. *Ger.* 1142. 3. (non. ic.) *Raii hiſt.* 957. *ſyn.* 332.
A. non ſpinoſa flore purpureo. *Park. theat.* 993. 5. *Bauh. hiſt.* 2. 393.
β. O. repens. *Hudſ. angl.* 313. 2. β. *Wither. arr.* 628. *var.* 2.
A. procumbens maritima, fol. hirſutis pubeſcentibus. *Raii ſyn.* 332. *Dill. elth. t.* 23. *f.* 28.
Flowers axillary in pairs, leaves ternate, upper ones ſolitary, branches unarmed ſubvilloſe.

4. Ononis repens. *Creeping Reſt-harrow.*
Lin. ſpec. 1006. *ſyſt.* 651. *Reich.* 3. 425.
Stems diffuſed, branches erect, upper leaves ſolitary, branches unarmed ſubvilloſe.

[5. Ononis hircina. *Stinking Reſt-harrow.*
Lin. ſyſt. 651. *Ait. hort. kew.* 3. 21. *Jacqu. hort. t.* 40. *t.* 93. *Krock. ſileſ. n.* 1152.
O. foetens. *Allion. pedem. n.* 1164. *t.* 41. *f.* 1.
O. altiſſima. *Lamarck encycl.* 1. 506.
O. arvenſis. *Retz. obſ.* 2. 21. *n.* 67. *act. laud.* 1. 130.
O. minor flore purpureo. *Buxb. cent.* 10. *t.* 2. *f.* 2.
O. mitior 1. purp. flore. *Cluſ. hiſt.* 1. 99.
O. non ſpinoſa purpurea. *Ger.* 1142. 3. *it. emac.* 1322. 3. *ic.*

Anonis non ſpinoſa, flore thyrſoide carneo, polonica. *Barr. ic.* 1214.
Flowers ſubſpiked in pairs, lower leaves ternate, upper ſolitary ſomewhat villoſe, branches hairy-villoſe.

6. Ononis ſerrata. *Serrate-leaved Reſt-harrow.*
Vahl ſymb. 1. 52. *Forſk. deſcr.* 131.
Flowers ſubſeſſile ſolitary, lower leaves ternate ſerrate-toothed wedge-form, with three teeth uſually at the tip.]

7. Ononis minutiſſima. *Small-flowered Reſt-harrow.*
Lin. ſyſt. 651. *Reich.* 3. 425. *Jacqu. auſtr.* 3. 23. *t.* 240. *Villars dauph.* 3. 428. *Allion. pedem. n.* 1165.
O. lutea ſylveſtris minima. *Col. ecphr.* 1. 304. *t.* 301. *Raii hiſt.* 958.
Anonis ſpinoſa lutea minor. *Bauh. pin.* 389.
A. montana ſpin. lut. min. *Park. theat.* 993. 3.
Flowers ſubſeſſile lateral, leaves ternate ſmooth, ſtipules uniform, calyxes ſcarioſe longer than the corolla.

8. Ononis mitiſſima. *Cluſter-flowered annual Reſt-harrow.*
Lin. ſpec. 1007. *Reich.* 3. 425. *Dill. elth.* 28. *t.* 24. *f.* 27. *Mor. hiſt.* 2. 169. *ſ.* 2. *t.* 17. *f.* 4.
Flowers ſeſſile in ſpikes, bralles ſtipular ovate ventricoſe ſcarioſe imbricated.

9. Ononis alopecuroides. *Foxtail Reſt-harrow.*
Lin. ſpec. 1008. *Reich.* 3. 426. *hort. cliff.* 358. *Knipb. cent.* 8. *n.* 75.
Anonis ficula alopecuroides. *Tournef. inſt.* 408.
A. ſpicata ſ. alop. luſitanica non ſpinoſa. *Raii ſuppl.* 408.
A. purpurea ſpic. alop. major. *Boerh. ineiph.* 2. 32.
Spikes leafy, leaves ſimple ſheat, ſtipules dilated.

[10. Ononis variegata. *Variegated Reſt-harrow.*
Lin. ſpecc. 1008. *ſyſt.* 651. *Reich.* 3. 426.
Anonis lutea, trixaginia folio, maritima. *Barr. ic.* 776.
A. marit. mitis, fol. lucido ſerrato. *Bocc. ſic.* 7. *t.* 38. *f.* 3.
A. non ſpinoſa, flore luteo variegato, anguſtifolia marit. *Tournef. inſt.* 409.
A. lut. parva procumbens marit. *Raii hiſt.* 958.

** *Flowers peduncled, peduncle awnleſs.*

11. Ononis alba. *White Reſt-harrow.*
Pabl ſymb. 2. 80. *Pet. it.* 2. 210.
Peduncles awnleſs very ſhort, leaves ſimple, ſtipules dilated ſerrate at top.

12. Ononis pubeſcens. *Downy Reſt-harrow.*
Lin. ſyſt. 651. *mant.* 267. *Reich.* 3. 427.
O. Monſoni. *Gouan illuſtr.* 47.
Anonis purpurea procumbens verna ſ. præcox fructoſa annua viſcoſa, ſiliquis craſſioribus lenticularibus rarius diſpoſitis. *Mor. hiſt.* 2. 168. *Raii hiſt.* 958.
Peduncles awnleſs very ſhort, upper leaves ſimple, ſtipules ovate-lanceolate quite entire.]

13. Ononis cernua. *Hanging podded Reſt-harrow.*
Lin. ſpec 1011. *ſyſt.* 652. *Reich.* 3. 427. *amoen.* 6. *ofr.* 42.
Lotus africana annua hirſuta, floribus luteis. *Comm. hort.* 2. 163. *t.* 82.
β. Cytiſus æthiopicus.
Lin. ſpec. 1042. *Moll. dict. n.* 9. *Plak. phyt. t.* 278. *f.* 3?
Racemes ſtrict, leaves wedge-form, legumes drooping linear recurved.

[14. Ononis geminata. *Two-flowered Reſt-harrow.*
Ait. hort. kew. 3. 23.
Leaves ternate obovate, peduncles lateral two-flowered.

15. Ononis umbellata. *Umbelled Reſt-harrow.*
Lin. ſyſt. 652. *Reich.* 3. 428. *mant.* 266.
Peduncles awnleſs umbelled, leaves ternate ſmarginate, ſtems proſtrate.

16. Ononis argentea. *Silvery Reſt-harrow.*
Lin. ſyſt. 652. *ſuppl.* 324.
Twining, peduncles awnleſs umbelled, leaves ternate, leaflets ſeſſile ſilvery-tomentoſe.

17. Ononis involucrata. *Involucred Reſt-harrow.*
Lin. ſyſt. 652. *ſuppl.* 324.
Hirſute, proſtrate, peduncles awnleſs involucred, involucre four-leaved, leaves ternate wedge-form.

18. Ononis filiformis. *Threadly-ſtalked Reſt-harrow.*
Lin. ſyſt. 652. *Reich.* 3. 428. *mant.* 266. *Berg. cap.* 227. (Lotus).

Peduncles

Peduncles awnleſs ſubtriflorous, leaves ternate ſubſeſſile, leaflets ovate mucronate.

19. Ononis capenſis. *Cape Reſt-harrow.*
Lin. ſpec. 1011. *Reich.* 3. 428. *amoen.* 6. *aſc.* 41.
Racemes on long peduncles, leaves ternate ſubarticulate.

20. Ononis proſtrata. *Proſtrate Reſt-harrow.*
Lin. ſyſt. 652. *Reich.* 3. 428. *mant.* 268.
Lotus proſtratus. *Lin. ſpec.* 1090.
Peduncles awnleſs one-flowered very long, leaves ternate acute, ſtipules awl-ſhaped, ſtems proſtrate.

21. Ononis reclinata. *Spreading Reſt-harrow.*
Lin. ſpec. 1011. *ſyſt.* 652. *Reich.* 3. 429.
Anonis puſilla hirſuta, flore ex albo & rubro colore mixto. *Mor. hiſt.* 2. 171.
A. purpurea non ſpinoſa minor. *Barr. ic.* 354.
A. annua pumila, flore purpuraſcente. *Tournef. inſt.* 408.
Peduncles awnleſs one-flowered, leaves ternate roundiſh crenate, legumes drooping.]

22. Ononis cenſira. *Narrow-leaved trailing Reſt-harrow.*
Lin. ſyſt. 652. *Reich.* 3. 429. *mant.* 267. *Allion. pedem. n.* 1173. *t.* 10. *f.* 3. *Villars dauph.* 3. 433.
O. criſtata. *Mill. dict. n.* 9.
Anonis luteo-purpurea minima anguſtifolia. *Barr. ic.* 833 *t.* 1104.
Peduncles awnleſs one-flowered, leaves tern wedged, ſtipules ſerrate, ſtems proſtrate.

**** With awned peduncles.*

[23. Ononis vaginalis. *Sheathed Reſt-harrow.*
Vahl ſymb. 1. 53.
O. Cherleri. *Forſk. deſcr.* 131.
Peduncles one-flowered awned, leaves ſeſſile ternate and ſtipules ſheathing toothed.

24. Ononis Cherleri. *Dwarf Reſt-harrow.*
Lin. ſpec. 1007. *ſyſt.* 653. *Reich.* 3. 429. *Ger. prov.* 487. 6. *Sauv. monſp.* 189. *Allion. pedem. n.* 1167.
A. puſilla villoſa & viſcoſa, purpuraſcente flore. *Tournef. inſt.* 408.
A. trifoliis affinis minima hirſuta Cherleri. *Bauh. hiſt.* 2. 394. *Raii hiſt.* 959. 13. *Mor. hiſt. ſ.* 2. *t.* 17. *f.* 11.
Peduncles one-flowered awned, leaves ternate, ſtipules ſerrate.]

25. Ononis viſcoſa. *Clammy Reſt-harrow.*
Lin. ſpec. 1009. *ſyſt.* 653. *Reich.* 3. 430. *Ger. prov.* 486. 5. *Allion. pedem. n.* 1168.
Anonis lutea viſcoſa latifolia minor, flore pallido. *Barr. rar.* 840. *t.* 1039.
β. A. annua erectior latifolia glutinoſa luſitanica. *Tournef. inſt.* 409.
Peduncles one-flowered awned, leaves ſimple, the loweſt ternate.

26. Ononis ornithopodioides. *Bird's-foot Reſt-harrow.*
Lin. ſpec. 1009. *ſyſt.* 653. *Reich.* 3. 430.
Anonis luſitanis ornithopodii. *Raerb. lugdb.* 2. 34.
Foenum graecum ficulneum, ſil. arnith. *Tournef. inſt.* 409.
Peduncles two-flowered awned, legumes linear drooping.

[27. Ononis pinguis. *Greaſy Reſt-harrow.*
Lin. ſpec. 1009. *ſyſt.* 653. *Reich.* 3. 430. *Kroch. ſilef. n.* 1153.
Anonis non ſpinoſa, flore luteo variegato. *Bauh. pin.* 389. *Raii hiſt.* 958. 10.
A. lutea non ſpinoſa, Natrix Plinii. *Dalech. hiſt.* 449.
β. A. lutea mitis oxytriphylla ad foliorum petiolos caprioolata. *Pluk. phyt. t.* 135. *f.* 5.
Peduncles one-flowered awned, leaves ternate lanceolate, ſtipules quite entire.]

28. Ononis Natrix. *Yellow-flowered ſhrubby Reſt-harrow.*
Lin. ſpec. 1008. *ſyſt.* 653. *Reich.* 3. 431. *mant.* 440. *hort. cliff.* 358. *Sauv. monſp.* 189. *Villars dauph.* 3. 431. *Allion. pedem. n.* 1170. *Mill. fig. t.* 37. *Curt. magaz.* 329.
Anonis Natrix. *Scop. carn. n.* 878. *Hall. helv. n.* 358.
A. viſcoſa ſpinis carens lutea major. *Bauh. pin.* 389. *Raii hiſt.* 958.
A. lutea non ſpinoſa, Dalechampio Natrix. *Bauh. hiſt. Mor. hiſt. ſ.* 2. *t.* 17. *f.* 9.
A. f. Spina lutea. *Ger.* 1142. 4. *emac.* 1323. 4.
Ononis lutea. *Camer. epit.* 445.
Natrix. *Riv. tetr.* 68. *Lob. ic.* 2. 28.
N. Plinii f. Anonis non ſpinoſa lutea major. *Park. theat.* 994. 6.

Peduncles one-flowered awned, leaves ternate viſcid, ſtipules quite entire, ſtem ſhrubby.

***** Shrubby.*

29. Ononis tridentata. *Three-tooth-leaved Reſt-harrow.*
Lin. ſpec. 1009. *Reich.* 3. 431.
Anonis hiſpanica fruteſcens, folio tridentato carnoſo. *Tournef. inſt.* 408. *Magn. bot.* 16. *t.* 16. *Raii ſuppl.* 466.
Shrubby, leaves ternate fleſhy ſublinear three-toothed, peduncles two-flowered.

[30. Ononis criſpa. *Curled-leaved Reſt-harrow.*
Lin. ſpec. 1010. *ſyſt.* 653. *Reich.* 3. 432.
Anonis hiſpanica fruteſcens, folio rotundiore. *Magn. monſp.* 17. *t.* 17. *Raii ſuppl.* 466.
β. A. hiſp. frut. folio Roſae ſylveſtris. *Tournef. inſt.* 409.
Shrubby, leaves ternate waved roundiſh toothed viſcidpubeſcent, peduncles one-flowered awnleſs.

31. Ononis hiſpanica. *Spaniſh Reſt-harrow.*
Lin. ſyſt. 653. *ſuppl.* 324. *Forſk. deſcr.* 175.
Shrubby, peduncles awned one-two flowered, all the leaves ternate channelled recurved ſerrate all along the edge.]

32. Ononis fruticoſa. *Shrubby Reſt-harrow.*
Lin. ſpec. 1010. *ſyſt.* 653. *Reich.* 3. 432. *hort. cliff.* 358. *Ger. prov.* 487. 7. *Allion. pedem. n.* 1171. *Villars dauph.* 3. 432. *Mill. fig. t.* 36. *Curt. magaz.* 317.
Anonis purpurea fruteſcens non ſpinoſa. *Dodart. mem. t.* 57.
A. purp. verna praecox frut. flore rubro ampliſſ. *Alm. hiſt.* 2. 170. *Raii hiſt.* 960. *Dalech. ord.* 1. *t.* 58.
Cicer ſylveſtre alterum triphyllum. *Park. theat.* 1077. 6.
Shrubby, leaves ſeſſile ternate lanceolate ſerrate, ſtipules ſheathing, peduncles ſubtriflorous.

33. Ononis rotundifolia. *Round-leaved Reſt-harrow.*
Lin. ſpec. 1010. *ſyſt.* 653. *Reich.* 3. 432. *mant.* 440. *hort. cliff.* 348. *Ger. prov.* 488. *b. Villars dauph.* 3. 432. *Allion. pedem. n.* 1170. *Curt. maraz.* 335. *Jacqu. audr.* 5. 55. *app. t.* 49. *Hall. helv. n.* 357. (Anonis).
Cicer ſylveſtre latifolium triphyllum. *Bauh. pin.* 347.
C. ſylv. tertium. *Dod. pempt.* 525.
C. ſylv. verius. *Lob. ic.* 2. 73.
C. ſylv. triph. *Park. theat.* 1077. 5.
C. ſylv. latif. *Ger.* 1045. *emac.* 1223. 2.
Anonis latif, Cicer ſylv. trifolium. *Bauh. hiſt.* 2. 295. *Raii hiſt.* 959. 16.
A. purpurea perennis foliis latiſſimis rotundioribus profunde ſerratis. *Mor. hiſt.* 2. 170. *n.* 7.
Shrubby, leaves ternate ovate toothed, calyxes three-leaved awned, peduncles ſubtriflorous.

[34. Ononis microphylla. *Small leaved Reſt-harrow.*
Lin. ſyſt. 653. *ſuppl.* 324.
Shrubby, tberry, leaves minute ternate quite entire, legumes recurved.

35. Ononis maurianica. *Barbary Reſt-harrow.*
Lin. ſyſt. 653. *Reich.* 3. 433. *mant.* 267. 453.
Lotus mauritanicus. *Lin. ſpec.* 1091.
L. fruticoſus. *Berg. cap.* 226.
Shrubby, leaves quinate obovate mucronate ſilky underneath, ſtipules ſetiform, peduncles vacated.

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36. Ononis ſubecculta.
Villars dauph. 3. 429.
O. Columnae. *Allion. pedem. n.* 1166. *t.* 20. *f.* 3.
O. lutea ſylveſtris molina. *Col. ecphr.* 1. 304. *t.* 301?
Anonis ſpinoſa lutea minor. *Bauh. pin.* 389.
A. flore luteo parvo. *H. R. Par.* 20. *Tourn. par.* 98. *inſt.* 409. *Vaill. par.* 13.
Flowers ſeſſile, all the leaves ternate, leaflets orbiculate, ſtipules lanceolate ſerrate, calyxes of the ſame length with the corolla.

37. Ononis ſtriata.
Villars dauph. 3. 430. *Cavan. icon.* 4. 47.
Stems proſtrate, leaves ternate ſmooth ſtriated, ſtipules ovate acute ſerrate, peduncles one-flowered, calyxes and legumes hirſute.]

38. Ononis decumbens.
Mill. dict. n. 15.
Anonis americana anguſtifolia humilior & minus hirſuta. *Houſt. MSS.*
Leaves ternate linear-lanceolate, ſtems decumbent, flowers in axillary ſpikes, legumes ſmooth.

DESCRIP-

DESCRIPTIONS, &c.

[These are herbaceous plants or undershrubs. Leaves ternate, with the leaflets often serrulate. Stipules fastened to the bottom of the petiole. Flowers yellow or purple, axillary or terminating, sessile or more frequently peduncled, the peduncles sometimes awned, sometimes not, one or many-flowered. Legume in some oblong, in others very short, nearly equal to the calyx, containing one or two seeds[1].—N. 7. 8, 9, 10, 11, 12, 19, 21, 25, are annual; the others are perennial or shrubby.

1. Root perennial. Stems straight, hard, smooth and almost woody. Flowers purple. The leaves are smaller and less villose than those of the next species, of which perhaps it is no more than a variety[2]. According to Linneus, it is shorter, stiffer, more thorny, almost smooth; with solitary peduncles, twice as long as the bracte.

Native of the South of Europe, as Dauphiné, the county of Nice, &c. in meadows and pastures.

2. In our common thorny Rest-harrow, at the base of the branches are strong thorns, and the branches themselves terminate in soft thorns. Stem slightly hairy. Leaves almost smooth. Calyx hairy, with five awl-shaped unequal segments. Flowers twice as long as the calyx. The whole plant is more rigid and woody, than our thornless Rest-harrow[3]; for which, in its young state, before the thorns are formed, it has frequently been mistaken. The corolla is red[4].]

It has a strong creeping root, which spreads far in the ground, and is with great difficulty eradicated, hence its names of *Resta bovis* and *Arrete boeuf*. Stems a foot and half high, slender, purple, hairy, sending out many lateral branches, armed with sharp prickles. The flowers come out singly from the side of the branches, they are of a bright purple colour marked with lines, and are succeeded by small pods, containing one or two kidney-shaped seeds. [Four or five, according to Gaertner, shagreened with very minute dots.

It is thus described by Retzius:—stems decumbent, villose, red, thorny especially from the base to the middle. Thorns two inches long, awl-shaped, pungent, sometimes but seldom furnished with a small leaf or two. Leaves and petioles smaller than in his *arvensis*, which is our *hircina*, obovate, hairy on both sides, and not serrated along the whole circumference. Flowers remote, at the distance of one or two inches, and therefore scarcely racemed, commonly solitary, but if there be two together they are on a common bird peduncle. The corolla has the banner by no means emarginate, but furnished with a soft awl-shaped little point: keel more gaping underneath somewhat longer than the wings. The plant, except in length, is less than *hirsuta*, more woody, and of a darker colour.

Monsr. Villars does not distinguish our *arvensis* from this. He says that it has no spines whilst it is young, but acquires them with age, and that they become stronger as the plant grows older, especially in poor land. It is a little villose and viscid when young, or in strong land, but loses part of its down and all its clamminess in low poor wet grounds: it then approaches to the first sort. It varies with white flowers, but this variety differs no otherwise from the common sort. All the varieties have ternate leaves; the leaflets are oblong, elliptic, sharply toothed; the branches do not acquire thorns till the second or third year, the flowers form a spike in the young plant, and become axillary or lateral when it is older. Loeselius long since and Haller affirmed that the young plant of Rest-harrow is smooth, and acquires thorns with age. —See what is said on the next sort.

Native of Europe, chiefly in barren pastures, both in a sandy and strong soil. Flowering the greater part of the summer from June.

It is named in English *Thorny Rest-harrow*, *Cammock*, *Petty Whin*, *Ground Furze*, in Yorkshire *Rustburn*, perhaps corruptly from Rest-bourn. Gerarde says, the root is long and runneth far abroad, very tough and hard to be torn in pieces with the plough, insomuch that the oxen can hardly pass forward, whereupon it was called Rest Plough or Rest Harrow. I am at a loss to conceive how the latter name prevailed, since that implies a superficial impediment, whereas it proceeds from the roots. This quality of the plant makes it very fit to be sown on sea and fen banks.

A decoction of these roots has been recommended in cases of jaundice. Kine and goats eat it; sheep are fond of it; horses and swine refuse it[5]. Dr. Stokes says, that a horse refused the whole branch, but eat of the younger shoots when picked off.

Mr. Woodward remarks of the figure in the Flora Danica, that the leaves are too pointed, and too deeply serrated, and that spines are represented at the ends of the branches only.

3. Our hairy or thornless Rest-harrow has the stem, branches and leaves soft and whitish with down. Flowers numerous, mostly solitary, alternate on the young shoots: corolla but little longer than the calyx; the segments of which are more tapering than in *O. spinosa*[6].—This is a smaller plant than that. Stems and branches woody, cylindrical, a little hairy. Leaves set with glandular hairs; the upper oblong-ovate, toothed. Petioles short, fixed to a broad toothed stipule. Flowers scattered, intermixed with leaves. Calyx, some of the hairs long and tapering, others short and tipped with glands; segments, four of them pressing on the standard, the lowermost supporting the keel. Standard of the corolla circular, with a small point at the end, with short hairs on the outside, of a fine rose-colour, streaked with deeper coloured lines; wings more than half as long as the standard, ovate, white; keel coloured and streaked as the standard. Germ with hairs tipped with glands. Seeds about six. Flowers sometimes nearly white. The hairiness of the leaves, and the want of thorns, best distinguish this from *O. spinosa*, the leaves of which are scarcely, if at all hairy on the upper surface, though in both they are edged with hair-like glands terminating in a small globule[7].

Linneus and others suppose this to be a mere variety of the thorny Rest-harrow, or the same plant in the younger period of its life.] Mr. Miller affirms that he has cultivated both by seeds, and has always found the plants retain their difference; that the stalks of this are hairy and more diffused than those of the *spinosa*; the leaves broader and sitting closer on the branches; the stalks not so upright and without spines.

[Mr. Woodward relates, that in the autumn of 1779, he examined many hundred plants in the cornfields about Berkhamstead in Hertfordshire, without meeting with a single one thorny; whereas in the neighbourhood of Bungay he never met with one without spines in any part of the year. Dr. Withering also informs us that Mr. Pitt of Pendeford near Wolverhampton sent him specimens which never became thorny, and that the thorny sort is never found in that neighbourhood: and that he found it in great plenty on St. Vincent's rocks, without the least appearance of thorns on any of the plants, though he examined a great number. These accounts agree entirely with my experience. In the part of the country where I live, in the counties of Bedford and Huntingdon, the Ononis has never occurred to me without thorns. It is found in pastures and the borders of corn fields, chiefly in light lands. The arvensis of many places on the continent is the fifth species, which is not found wild in England. It varies with white flowers as well as the foregoing sort.

β. A variety of *O. arvensis* has been found on our sea coasts in Cornwal, near Deal in Kent and Yarmouth in Norfolk; also by Charlton Church, Woolwich, and Gravesend. At Sandscale, and in Walney, in Low Furness, &c. This was supposed to be the same with *O. repens* of Linneus, but according to Mr. Afzelius that species has not been found in England. Mr. Hudson cultivated both our plants four years, and could not discover any specific difference. Both, according to him, are villose and somewhat clammy, with the flowers solitary, or two together, sometimes

[1] Jussieu. [2] Villars. [3] Woodw. Mss. [4] Withering. [5] Linn. [6] Woodw. Mss. [7] Withering.

three. Mr. Woodward says it is not so downy as the arvenſis, that the flowers are larger and fewer, the ſegments of the calyx ſhorter and blunter, the leaves longer, broader at the extremity, and more tapering at the baſe (oblong wedge-ſhaped.) Removed into a garden it grows upright, and is more downy.

4. This is very nearly allied to the preceding, but differs in having the ſtems procumbent diffuſed every way, and in being ſmaller. Flowers ſolitary from the axils.

Native of the Levant[a], but not of England, as Linnæus ſuppoſed it to be. Perhaps it may not be really different from the preceding. The ſpecies ſeem to have been too much multiplied.

5. This has never any thorns. The branches and eſpecially the calyx are very villoſe. Leaves ſoft, finely hairy. Flowers terminating in a ſpike, two together, pedunculed. Standard reflex, almoſt flat; keel bent in at an obtuſe angle. Fruit ſhorter than the calyx, very hirſute. In the common Reſt-harrow the ſtipules are much ſmaller, hooked; the fruit leſs hirſute, longer than the calyx; the keel of the flower bent in at a right angle. Flowers ſolitary[b].

Retzius thus deſcribes his arvenſis, which is this ſpecies.—Stems almoſt upright, villoſe, green, viſcid, twice as thick as thoſe of the thorny Reſt-harrow, without any thorns. Leaves ſimple and ternate, ovate, ſerrate all round, naked underneath, above villoſe, with hairs having a globular gland at top. Petioles winged, ſtipule-ſhaped, with large, ſerrate, almoſt embracing wings. Flowers almoſt twice as large as thoſe of thorny Reſt-harrow, in a terminating raceme, commonly two together: both peduncles from the ſame point. Calyx villoſe, five-cleft, with linear, acuminate, ſtriated teeth, the two uppermoſt of which follow the back of the ſtandard; the two middle ones lie over the edges of the ſtandard, and the fifth covers the opening of the keel at bottom. Standard a little emarginate. Wings the length of the keel. The whole plant is larger than that of ſpinoſa, more ſucculent, paler, and has a goatiſh ſmell. It neither has thorns nor creeps. Cluſius ſays, that this goatiſh ſmell reſembles that of Fraxinella, than which nothing ſeems to me more different. In Ray's ſynopſis it is ſaid of our common thornleſs Reſt-harrow, *hircum olet hæc planta*.

Native of Sweden, Germany, Italy and Hungary. Introduced in 1774, by Joſeph Nicholas de Jacquin, M. D. It flowers from may to auguſt[c].

This ſpecies ſeems to be ſtronger than our common Reſt-harrow, and together with the Natrix and viſcoſa, is recommended by ſome, foreign phyſicians as a powerful diuretic, and ſerviceable for cleanſing the urinary paſſages, and in an incipient dropſy. The bark of the root is the moſt efficacious part of the plant.

6. Stem herbaceous, round, decumbent, ſubdichotomous. Branches ſlender. Lower leaves ternate, upper ſimple, at the tops of the branches scarcely any, all petioled. Leaflets wedge-form-linear, ſerrate-toothed with three teeth on each ſide, at top tranſverſe, three-toothed ſeldom five-toothed, a quarter of an inch in length; the lateral ones ſmaller. Petiole the length of the leaves. Stipules faſtened on each ſide to the petiole, and only half its length, ovate-lanceolate, ſtriated, toothletted. Flowers axillary, ſolitary, ſubſeſſile, the lower ones more remote, the uppermoſt ſupported by a ſtipule at the baſe. Calyx five-toothed, ſtriated, with lanceolate-linear ſegments, the length of the corolla. Legume villoſe, oblong, four-ſeeded, the length of the calyx'.]

7. This is an annual plant, about nine inches high, ſending out one or two ſide branches towards the bottom. Leaves ſmall, ovate, indented on their edges, and ſtanding upon pretty long foot-ſtalks. Flowers axillary, ſolitary, ſmall, yellow, ſeſſile, with a ſharp briſtly bracte. Pods very ſhort, turgid; containing two or three kidney-ſhaped ſeeds.

[Stems filiform, diffuſed, ſmooth, ſufrutticoſe. Stipules very much acuminated, ſubbipartite, quite entire. Leaflets ſomewhat oblong and rigid, ſerrate, recurved, ſcarcely mucronate. Petioles very ſhort. Flowers axillary, ſolitary. Calyxes ſmooth, deeply five-cleft, ſtraight, awl-ſhaped. Corolla yellow. Legume ovate, brown, ſhorter than the calyx. Upper floral leaves ſimple[e].

Villars remarks, that the ſtems are many, ſimple, from ſix to eight inches in height; leaves ternate, on a petiole ſupported by two ſtipules, lengthened out into an awn, and entire; leaflets ſmooth, very dark green, oblong a little enlarged at the ends, with ſharp teeth, not very deep. Flowers on the upper part of the ſtem and branches, yellow, ſmall, axillary, ſolitary. The leaves which ſupport theſe are often ſimple. Calyx cut to the baſe, briſtle-ſhaped, longer than the flower and fruit. Legume oval, blackiſh, ſmooth.

Native of the South of Europe. Cultivated in 1739, by Mr. Miller. It flowers in june and july[f].]

8. Stem upright, a foot and half high, ſending out ſmall ſide branches. Leaflets roundiſh, ſerrate, on ſhort foot-ſtalks. Flowers in ſhort leafy ſpikes at the ends of the branches; they are ſmall, and of a pale purple colour. Pods ſhort, turgid, containing two or three kidney-ſhaped ſeeds.

[According to Linnæus, the ſtem-leaves are ternate; the floral leaves ſimple. Stipules and bractes embracing, membranaceous-cartilaginous, even, ovate, concave, among the flowers imbricate in a ſpike, covering the calyxes. Calycine ſegments ovate, bent back at the ſides, having viſcid briſtles ſcattered over the inſide, as the legume has alſo.

Dillenius ſays that it is a mean between the upright and procumbent ſpecies, the principal ſtem being upright, from a foot to two feet in height, the other ſtems and branches procumbent; they are round and hairy; the ſhoots terminate in ſpikes of flowers from half an inch to an inch in length. Corolla ſmall, pale purple. It has no ſpines, it is not clammy, and it has not any ill ſmell.

Native of Spain and Portugal. Cultivated in 1732, by James Sherard, M. D.[g]]

9. This is an annual plant, riſing with upright branching ſtalks a foot high. Leaves ſingle, ſeſſile; the larger leaves oval, about an inch long, and three quarters of an inch broad; the upper leaves narrow, ending in obtuſe points, and ſlightly indented at their ends. Flowers in leafy ſpikes at the ends of the ſtalks ſet cloſe together, having hairy calyxes; they are pretty large, of a purple colour, and appear in july. Pods taper, about an inch long, incloſing four or five kidney-ſhaped ſeeds.

[Native of Spain and Portugal. Cultivated in 1696, by Mr. Jacob Bobart[h].

10. This has the appearance of an Euphraſia, branched, diffuſed, viſcid-pubeſcent. Stipules cordate, very wide, plaited, toothed, emarginate, wider than the leaves. Leaves ſimple, wedge-form-obovate, plaited, finely toothletted. Flowers axillary, ſolitary, ſubpeduncled. Calyxes ſhorter than the corolla[i].

Native of the South of Europe, on the ſea coaſt, as in Italy, and in Sicily very abundant. Annual.

11. Stem a foot high, diffuſed, round, a little flexuoſe at bottom, hairy-ſubviſcid, branched. Branches of the ſame ſtructure with the ſtem, quite ſimple, the lower ones procumbent, the upper ones ſpreading. Leaves alternate, half an inch long, remote, ſpreading, oblong, finely ſerrulate: floral leaves pubeſcent, of the ſame form with the ſtem-leaves, but ſmaller. Stipules the length of the petiole, narrower by half than the leaves, quite entire at bottom, finely ſerrate at top. Flowers from the upper axils, at firſt cloſe together in a ſhort ſpike, afterwards remote, on ſhort peduncles, ſolitary. Pedicels the length of the petiole. Bractes none. Calyx five-cleft, hairy viſcid; ſegments lanceolate, ciliate, the loweſt twice as broad as the reſt. Corolla the length of the calyx, pale red.

[a] Linn. [b] Allione. [c] Hort. kew. [d] Vahl. [e] Linn. ſyſt. [f] Hort. kew. [g] Idem. [h] Idem. [i] Linn. ſpec.

It is a mean between O. alopecuroides and pubescens. From the former it differs in its ferrate ſtipules, the floral leaves of the ſame ſtructure with the ſtem-leaves only ſmaller, not linear and narrower towards the baſe: from the latter, in having all the leaves ſimple, and the ſtipules ferrate [m].

Native of Barbary, on the ſea-ſhore, flowering in the month of june. The whole plant is covered with a ſlight down except the leaves, and it is a little viſcid [n].

12. Stems a foot high, branched, diffuſed, round. The whole plant pubeſcent-viſcid. The ends of the branches heaped with leaves and flowers, which gradually become more remote. Lower leaves ternate, the reſt ſimple. [o] Leaflets ovate or oval, obtuſe, acutely ſerrate. Stipules ovate-lanceolate, faſtened to a petiole of the ſame length, quite entire. Petioles the length of the leaves. Peduncles axillary, awnleſs, the length of the petioles. Calyxes lanceolate, bluntiſh, the length of the corolla [p].

Native of the South of Europe. Gouan had the ſeeds from Majorca or Minorca. Annual. Introduced in 1783, by Monſ. Thouin. It flowers in auguſt [q].

13. This is a ſhrub, having the appearance of Geniſta canarienſis. Branches round, purple, with whitiſh hairs ſcattered over them. Leaves ternate, petioled, ſmall, purpliſh underneath: leaflets ſeſſile, ſomewhat wedge-ſhaped, blunt, ſcarcely emarginate. Racemes erect, hairy, as are alſo the calyxes. Corollas ſmall, yellow. Stamens connate, with a cleft above. Legume linear, drooping, ſickled backwards, compreſſed toruloſe [r].

Linnæus firſt named it Cytiſus æthiopicus, under which name Mr. Miller deſcribes it thus.] Stalk ſoft, ſhrubby, eight or ten feet high, putting out many ſlender branches on every ſide. Leaves ſmall, wedge-ſhaped, indented at the top, dark green, ſmooth. Flowers frequently ſingle from the ſide of the branches, large and of a bright yellow. He ſays that it grows naturally about Algiers whence Dr. Shaw brought the ſeeds, which ſucceeded in the Cheliea garden.

[Native of the Cape of Good Hope. Introduced in 1774, by Mr. Francis Maſſon. It flowers from july to ſeptember.

14. This alſo is a native of the Cape, and was introduced by Maſſon in 1787 [s].

15. Stems a foot high, branched, rod-like, numerous, proſtrate, filiform. Leaflets ſeſſile, obcordate or obovate, obtuſe, naked. Petioles the length of the leaves, ſcarcely pubeſcent. Stipules minute, lanceolate. Flowers in umbels about five together (four to eight); ſometimes but ſeldom two flowers under the umbel, without any evident involucre. Common peduncles axillary and terminating, very long, filiform. Calyxes pubeſcent. Filaments connate. Legume with the dorſal ſuture rugged.

Native of the Cape of Good Hope [t].

16. This reſembles a Glycine, but has not the character. It was found at the Cape by Thunberg.

17. In appearance it agrees with O. umbellata. This alſo was found at the Cape by Thunberg [u].

18. This has the ſtature of Lotus corniculata. Root ſimple, deſcending. Stems numerous, branched, hardiſh, filiform, diffuſed, a ſpan high. Leaves ſubſeſſile. Leaflets ovate, mucronate, ſmall, ſubpubeſcent. Stipules none. Peduncles axillary, filiform, much longer than the leaves, ſubtriflorous at top: flowers alternate, pedicelled. Legume cylindric, acute.—Native of the Cape [v].

19. Herbaceous, pubeſcent. Stipules ſubcordate. Petioles longer than the leaflets, which are mucronate, the middle one on a longer petiole, and more retuſe. Racemes axillary, ſolitary, ſimple, twice as long as the leaves, compoſed of about ſix alternate flowers. Corolla yellow and violet purple. It is an annual plant, and native of the Cape [w].

20. Stems numerous, a ſpan long, filiform, weak, herbaceous. Leaves petioled, lanceolate, mucronate at both ends, ſmooth, pubeſcent underneath. Stipules very minute, acuminate. Peduncles filiform, jointed below the top. Calyx the ſize of the leaves. Legume ſubtomentoſe, mucronate, horizontal, twice as long as the calyx. This is believed to this genus, appears from the coaleſcent filaments [x]. Linnæus had firſt ranged it with Lotus. Native of the Cape.

21. This is an annual plant, pubeſcent viſcid, ſmall, diffuſed, ſpreading. Leaves petioled, orbiculate, thickiſh, plaited, pubeſcent-viſcid. Stipules oval, ſpreading, blunt, ſerrate. Peduncles axillary, ſcarcely the length of the leaves. Calyxes the length of the peduncle, blunt. Corollas white with the ſtandard purple underneath. Calyx after flowering bent back at top to the ſtem. Legume half as long again as the calyx, villoſe, cloſely bent back under the peduncle, brown. Native of Spain and Italy [y].

22. Stems a finger's length, ſomewhat branched, even. Leaflets even, rounded at the top, ſharply and very finely-ſerrate. Stipules lanceolate. Peduncles lateral, much longer than the leaves. Calyx ſhort, even. Standard purple, ſtriated [z].

It is ſmall, though woody; entirely ſmooth except the calyx. Stems thin and hard. At the baſe of the leaflets are two green pointed lanceolate toothed ſtipules. Leaflets oblong, ſharply toothed. Flowers large in proportion to the plant, growing one by one from the axils of the upper leaves, on a peduncle about an inch in length. Standard rounded, bent back at top, purple with darker red veins; wings and keel much ſhorter, white. Capſule ſmooth, ſhort, ſwelling [a].

Native of Italy, at the foot of mont Cenis, &c. and of Dauphiné. Villars is of opinion that Linnæus intended this plant, when he ſpeaks of the reclinata as a native of Dauphiné; and Allione ſuppoſes the reclinata of Linnæus to belong to this ſpecies. He ſays, that it varies with ſmooth and hairy leaves; with the flowers cloſe on ſhort peduncles, and remote on long peduncles. The whole plant is ſometimes covered with flowers, and ſometimes they are only at the ends of the branches.

Mr. Miller deſcribes it under the name of Ononis criſtata. He therefore cultivated it before 1759. According to the Kew catalogue it was introduced in 1778, *by Monſ. Thouin.*

23. Viſcid-villoſe, with a woody ſtem. Leaflets wedge-form, ſtriated, toothed, towards the baſe quite entire, the lateral ones ſmaller. Stipules cowled, covering the whole ſtem, oblique to the ſtem, bifid on the outſide, ſtriated, the lower ones dry. Peduncles alternate, from the middle to the end of the ſtem, ſolitary, awned a little below the calyx with a linear leaflet the length of the calyx, erect, an inch in length. Calyx ſtriated, with lanceolate ſegments, ſhorter than the corolla. Corolla yellow, with a purple-ſtriated ſtandard. Legume bent back. At one time of the year it puts on an appearance ſo different as to be eaſily taken for a diſtinct ſpecies: with the branchlets cluſtered, half an inch long, leaflets and the ſtipules ſmaller cloſely imbricate [b].

24. Allied to O. minutiſſima, but the leaves viſcid-villoſe underneath, and not ſmooth. Stipules diverging, ſerrate, lanceolate at the top, not ſheathing, quite entire or ſetaceous. Calyxes pubeſcent, the length of the corolla; not ſmooth and longer than the corolla [c].

Root woody. Stem procumbent, diffuſed, wrapped in ſtipules every way. Leaves ſubſeſſile, toothed at top. Stipules lanceolate, ſharp, ſerrate. Peduncles axillary, longer than the ſtem, villoſe and viſcid, terminated by a very ſhort truncated thread, coming out below the flower. Calyx five-cleft, villoſe and viſcid, with lanceolate-linear, acute, long ſegments. Standard large. Legume ovate, flat, nodding. Flowering peduncles erect; fruiting peduncles nodding.

Native of the South of Europe, introduced in 1771, by Monſ. Richard. It flowers in june and july [d].

25. This is an annual plant, with a ſtrong herbaceous hairy ſtalk, a foot and half high, ſending out branches the whole length. The middle leaflet is

[m] Vahl. [n] Poiret. [o] Linn. mant. [p] Hort. kew. [q] Linn. ſyſt. [r] Hort. kew. [s] Linn. mant. [t] Linn. ſuppl. [u] Linn. mant. [v] Linn. amœn. [w] Vahl. [x] Linn. ſpec. and ſyſt. [y] Linn. mant. [z] Villars. [a] Vahl. [b] Linn. ſpec. [c] Gou. prop. [d] Hort. kew.

large and oval, the ſide ones are long and narrow, rounded at their points, indented on their edges, and very clammy. Peduncles axillary, ſolitary, each ſuſtaining one pale-yellow flower, ſtanding erect in the middle of the peduncle.

[The whole plant is beſet with glutinous hairs. Stem angular, branched. Leaves on the ſtem often ternate, ſubferrate; on the branches ſimple. Stipules embracing, bifid. Peduncles terminated by a briſtle longer than the flower. Calyx deeply cut into linear ſegments. Legume ovate, turgid, nodding, longer than the calyx[f].

Native of the South of France and Spain. Cultivated by Mr. Miller in 1768[g].] He ſays that the ſeeds were ſent him from Portugal, where it grows naturally.

[8. Is larger, and the calyxes are longer than the corolla[h].

26. Stem erect, flexuoſe, with ſhort alternate branches. Leaves on oblong petioles, viſcid: leaflets obovate, ſerrate, the middle one double the ſize of the two others. Stipules ſemi-cordate. Peduncles longer than the petiole. Calycine leaflets filiform. Legumes compreſſed, toruloſe[i].]

Annual; nine inches high, with one or two branches towards the bottom. Leaves ſmall, on ſhort foot-ſtalks, each ſuſtaining two ſmall yellow flowers. Pods jointed, compreſſed like thoſe of Bird's-foot, having four or five ſeeds. It flowers in July, and the ſeeds ripen in the autumn.

Native of Sicily, [at Capo Paſſaro. Cultivated by Mr. Miller in 1759.

27. This reſembles O. Natrix very much, but the ſtem is more ſucculent and more angular; the leaves larger, lanceolate-oblong; the awns of the peduncles the length of the flower, ſhorter than in the preceding ſpecies. According to Monſ. Gerard it is a variety of O. Natrix[k].—Native of the South of Europe.

28. This is a very ſtrong-ſmelling plant, with the odour of Theriaca, and not very clammy. Leaves oval, flattiſh, ſerrate only at the top, not fleſhy. Peduncle the length of the awn. Calyxes viſcid[l].

Root large and wrinkled. Stems more or leſs upright, commonly a foot high. Leaflets oblong, villoſe, toothed at the end. Flowers large, yellow, ſolitary, on a peduncle elbowed at two thirds of its length, whence ſprings a thread like an awn. The upper part of the flower is rayed with red lines. Legumes oblong and villoſe. The whole plant is viſcid and has a reſinous ſmell[m].

Monſ. Villars inſiſts that O. viſcida of Linneus is no more than a variety of this, only more upright, more viſcid and ſucculent, with longer leaves, and growing in woods.

Native of the South of France, Spain and Portugal, Carniola and Switzerland. Ray obſerved it firſt in Sicily, at Capo Paſſaro, then by the river Arve near Geneva, and about Montpellier abundantly: he remarks that the Sicilian plant is larger and higher than the others.—It was cultivated here in 1683, by Mr. James Sutherland[n].

29. Stem erect, panicled. Stipules awl-ſhaped, minute. Leaflets ſomewhat channelled, three-toothed at top, with ſome obſolete toothlets at the ſides. Raceme terminating, ſmall, hiſpid-glutinous. Flowers purple[o].]

Stalks ſhrubby, a foot and half high, dividing into ſlender branches very full of joints. Leaflets narrow, thick, fleſhy, on ſhort foot-ſtalks. Flowers at the ends of the branches in looſe panicles, ſome of the peduncles ſuſtaining two, and others but one flower; they are of a fine purple colour, and appear in June; the ſeeds ripens in ſeptember.

Native of Spain and Portugal. [Cultivated before 1759, by Mr. Miller.

30. Stem erect, panicled, pubeſcent-viſcid. Leaflets obovate, blunt, recurved, channelled, plaited, ſomewhat toothed, curled. Stipules bifid, embracing, toothed, hairy and viſcid, as is the whole plant. Flowers lateral, axillary, ſolitary, on a very ſhort peduncle. Calyx five-parted; ſegments ſhorter by half than the corolla, almoſt equal, three-toothed. Corolla yellow, the ſize of the leaves; with the ſtandard ſtreaked of a blood-red colour on the outſide, as in O. Natrix, which it reſembles very much; but differs in being curled, more viſcid, and having awnleſs peduncles, which, when the flowering is paſt, are very much recurved, inſomuch that the fruit approximates to the ſtem[p].

Native of Spain. Cultivated in 1752, by Mr. Miller[q]. It is omitted in the ſeventh and eighth editions of the Dictionary.

31. Plant ſtrict, viſcid, inodorous. Leaves thickiſh, leſs than thoſe of O. Natrix but thicker. Stipules ſpreading, recurved. Peduncles lateral, with an awn the length of the petiole. Flowers like thoſe of O. Natrix, yellow ſtreaked with red. Perhaps it may be a variety of O. criſpa.—Native of Spain[r].]

32. This is a very beautiful low ſhrub, riſing with ſlender ſtalks about two feet high, dividing into many branches. The flowers come out in panicles at the ends of the branches upon long peduncles, which for the moſt part ſuſtain three large purple flowers. Legumes turgid, about an inch long, hairy, incloſing three or four ſeeds.

[Stems many, woody, a foot high, ſmooth, round, ſtraight, with frequent joints, divided into ſhort branches. Stem-leaves ſeſſile; branch-leaves petioled. Leaflets ſmooth, unequally ſerrate, fleſhy, ſhining. Stipules ſtriated, dividing into unequal ſegments at top; according to Linneus four-awned and dry. Peduncles alternate, longer, contained within leafleſs ſheaths. Calyx five-parted, ſubvilloſe, with equal linear ſegments. Flowers nodding, forming handſome bunches, red or purple. Legumes hoary, longer[s].

Native of the South of France, on hills and mountains. Cultivated in 1748, by Mr. Miller. It flowers in may and june; and varies with white flowers[t].

33. Stem round, ſtriated, ſomewhat villoſe, a foot and half or two feet in height. Leaves petioled, ſerrate-toothed, with the teeth alternately larger and ſmaller, villoſe, large; the end leaflet larger and rounder than the others. Stipules green, ſheathing, obſoletely ſerrate, with longitudinal prominent nerves. The flowers form handſome bunches at the ends of the branches; they are on a long peduncle, frequently three together, each on its proper pedicel, of a purple colour. The ſtandard is very large, roundiſh[u], and pubeſcent. The wings ſhorter than the keel: the calyxes ſurrounded by three, cordate, approximating, ſhorter bractes.

It differs from the preceding in having a higher ſtalk, with wider leaflets. The ſtipules alſo in this are of the ſame colour with the leaves, and always leafy; whereas in the preceding they are ſhrivelled, and on the flowering ſtem leafleſs[x].

Mr. Miller deſcribes the corolla as pale yellow, which is certainly a miſtake, it being purple: in other reſpects his deſcription accords well enough with the plant.—It is a native of Switzerland, and was cultivated here in 1570, by Mr. Hugh Morgan, as appears from Lobel. It flowers from may to july[y].

34. This ſhrub is very much branched, ſomewhat ſpreading, and armed with ſtout thorns. Leaves petioled. Leaflets oblong, bluntiſh, even. Legumes petioled, linear, toruloſe, acute, even: containing five or ſix ſeeds.

Native of the Cape of Good Hope, where it was found by Thunberg[z].

35. Leaflets in fives, beſides the minute ſtipules[a].—Native of the Cape.

In the Species Plantarum Linneus deſcribes it under the name of Lotus, as a ſmall ſhrub, with filiform ſtiffiſh branches. Leaves petioled, with white hairs ſcattered over them on both ſides. Stipules the ſize of the leaves, lanceolate-ovate. Peduncles axillary,

[f] Ger. prov. [g] Hort. kew. [h] Linn. ſpec. [i] Linn. ſpec. and ſyſt. [k] Idem. [l] Linn ſpec. [m] Villars. [n] Hort. kew. [o] Linn. ſpec. [p] Linn. ſpec. [q] Hort. kew. from Mill. dict. ed. 6. [r] Linn. ſuppl. [s] Gerard and Villars. [t] Hort. kew. [u] Gerard and Villars. [x] Linn. [y] Gerard. [z] Hort. kew. [a] Linn. ſuppl. [b] Linn. ſyſt.

long.

long. Legumes smooth, half as long again as the leaves.

36. This resembles O. minutissima, and has been taken by most authors for the same plant. Allione and Villars however regard it as distinct. The stems are of the same size, and have the same habit; but in this the whole plant, not excepting the fruit is villose and a little clammy; the leaflets are round, with the teeth straight and shallow; the stipules are russet, less hard and toothed, not blackish awned and entire; the calycine leaflets are less hard, shorter, and do not terminate in an awn; the flower is smaller, and yet is of the same length with the calyx, as well as the fruit.

It is singular, that in autumn, the petals become so small, as to be concealed under the germ, at the bottom of the calyx, so as not to be seen; the fruit however is not on this account abortive. All parts of the flower are straight, distinct, not touching each other, but pale and flat, and seeming to be the commencement of a regular flower of four unequal petals. This plant is more frequently found thus, than with the flowers developed, coloured, and equal in length to the calyx. Hence the name of fubocculta[1].

Native of Dauphiné, the county of Nice, &c. Allione affirms it to be perennial; but Villars rather takes it to be biennial.

37. This approaches to the preceding and the minutissima in size, but is a little different in habit. A hard, knobbed, perennial root, full of tubercles, furnishes several creeping stems, commonly simple, from four to six inches in length. They have few leaves on their lower part, and at top have a parcel of yellow flowers in a raceme. Stipules small, acute, toothed, semicordate. Leaflets almost triangular, truncated on the upper edge which is toothed, rayed or grooved on their upper surface, of a deep green colour. Peduncle a line and half in length. Calyx villose, almost as long as the corolla, with linear segments. Petals yellow. Legume villose, a little clammy, oval, inclosed within the calyx. The whole plant has the habit rather of Medicago falcata than an Ononis.

Native of Dauphiné, but rare[2]. Monf. Villars does not think that the fynonyms of Monf. Gouan belong to this plant.]

38. This is a perennial plant, from whose roots come out several pretty strong branches, which spread and incline towards the ground. Leaves narrow, very little hairy. The flowers come out in loose panicles at the end of the branches; they are yellow, and are succeeded by smooth turgid pods about half an inch long, each containing two or three kidney-shaped seeds. It flowers in july; and the seeds sometimes ripen here in the autumn. It was discovered by Dr. Houstoun, at La Vera Cruz in New Spain, whence he sent the seeds to England. This species is omitted in the quarto edition of the Dictionary.

PROPAGATION AND CULTURE.

2, 3. The common wild sorts of Ononis are very troublesome weeds in pastures and corn fields; the roots spreading and multiplying greatly in the ground, and being so tough and strong, that the plough-share will scarcely cut through them. They are only cultivated in botanic gardens.

1. 4, 5. Are hardy plants, like the others, cultivated only in botanic gardens.

7. A hardy annual plant, propagated by seeds, sown in the place where they are to remain, and requiring no other care but to thin them where they are too close, and to keep them clean from weeds.

8. This rises easily from seeds in the open air, and may be managed as the preceding, together with the other annual hardy sorts.

28. This is propagated by seeds, sown thin in drills upon a bed of light earth. When the plants come up, keep them clean from weeds till autumn; then take them up carefully, and transplant them into the borders of the pleasure garden, where they are to remain: the second year they will flower and produce ripe seeds, but the roots will continue several years, and are very hardy.

[The general practice is to consider this species as tender. Mr. Miller's treatment may suit it in mild winters; but it will be prudent to keep some plants in the green-house. In the course of two or three years it is apt to grow out of form, and therefore is generally renewed by seeds, which it produces in abundance; or kept closely cut in. It is also easily increased by cuttings[3].]

29, &c. The shrubby sorts are propagated by seeds sown upon a bed of light earth in april. The plants will come up in may, when they must be kept clean from weeds, and if they are too close, some of them should be carefully drawn up in moist weather, and transplanted at four or five inches distance: in the autumn they should be transplanted again to the places where they are to remain. Those plants which were left growing in the bed where they were sown, must be treated in the same way. These will not thrive in pots. They flower the second year, when they make a fine appearance, during the continuance of their flowers.

The twenty-ninth sort is too tender to thrive in the open air in England, unless it be planted in a warm situation, and in very severe frost covered to protect it. The seeds of this must be sown on a warm sheltered border, being impatient of cold.

The thirty-second will thrive very well in a shady border, and produce seeds in plenty.

[According to Mr. Curtis, the situation it affects is dry and sandy, but it is by no means nice as to soil or place, and is so hardy as to bear the severity even of a hard winter. In the collections about London it is frequently found in pots, and kept with greenhouse plants. The best mode of raising it is from seed.

The thirty-third sort flowers in our open borders, and ripens its seed, by which it is in general propagated. It may also be increased by slips, is very hardy, and easy of culture. Its beauty has gained it a general admission into our nurseries[4].]

ONONIS. See *Anthyllis, Glycine, Lotus, Pisolea.*]

ONOPORDUM (*of Pliny, l. 27, c. 11. From ove and πορδη, q. crepitus asini.*)

Lin. gen. n. 927. *Reich. n.* 1006. *Schreb. n.* 1256. *Vaill. mem. par.* 1718. 152. *f.* 37. *Juss.* 173. *Gærtn.* 161. Cardui species. *Tournef. t.* 253.

Class. 19. 1. Syngenesia Polygamia Æqualis.

Nat. order of *Compositæ Capitatæ. Cinarocephalæ*, Juss.

GENERIC CHARACTER.

CAL. *Common* roundish, ventricose, imbricate; *scales* numerous, spiny, prominent every way.

COR. *Compound* tubular, uniform: *corollets* hermaphrodite, equal.

Proper one-petalled, funnel-form: *tube* very slender; *border* upright, ventricose, five-cleft: *segments* equal, *one* more deeply separated.

STAM. *Filaments* five, capillary, very short. *Anther* cylindric, tubular, the length of the corolla, five-toothed.

PIST. *Germ* ovate. *Style* filiform, longer than the stamens. *Stigma* crowned.

PER. none. *Calyx* slightly converging.

SEEDS solitary. *Down* cavillary, sessile.

REC. chaffy: *chaffs* enadiate into the cells, truncate, mucronate, shorter than the seeds.

ESSENTIAL CHARACTER.

Cal. scales mucronate. *Recept.* honey-combed.

SPECIES.

1. Onopordum Acanthium. *Woolly Onopordum or Cotton Thistle.*

Lin. spec. 1158. *fil.* 728. *Reich.* 3. 690. *Bot. cliff.* 393. *fl. suec. n.* 724. *Hudf. angl.* 354. *Wither. arr. ed.* 3. 704. *Curt. lond. f.* 57. 334. *Lightf. scot.* 459. *Relh. cant. n.* 595. *Huds. hebr. n.* 259. *Pollich pal. n.* 772. *Nack. gallob.* 340. *Allion. pedem. n.* 525. *Villars dauph.* 3. 26. *Kruck. filef. n.* 1351. *Fl. dan. t.* 909.

Acanos Spina. *Scop. carn. n.* 1013.

Spina alba. *Fuchs. hist.* 57.—sylvestris Fuchsii. *Bauh. hist.* 3. 54. 2.—tomentosa latifolia sylvestris. *Bauh. pin.* 382. *Lobel. pruff.* 261. *t.* 82.

Acanthium. *Dod. pempt.* 721. *Matth.* 671. *Mer. hist. f.* 7. *t.* 30. *f.* 1. *ord. i* & 2.—vulgare. *Park.*

[1] Villars. [2] Ibid. [3] Curtis. [4] Hom.

theat. 979. 1. *Raii hift.* 313.—album. *Ger.* 988. 1. *emac.* 1149. 1. & 1174. 5. *ic.*

Carduus tomentofus, Acanthium dictus, vulgaris. *Raii fyn.* 196. *Petiv. brit. t.* 21. *f.* 10.

Calyxes fquarrofe, fcales fpreading, leaves ovate-oblong finuated.

2. Onopordum illyricum. *Illyrian Onopordum.*

Lin. fpec. 1158. *fyft.* 728. *Reich.* 3. 691. *Jacqu. hort.* 2. 69. *t.* 148. *Gouan monfp.* 424. *Sauv. monfp.* 290. *Villars dauph.* 3. 96. *Gerin. fruct.* 2. 376.

Spina tomentofa altera fpinofior. *Bauh. pin.* 382.

Carduus quibufdam dictus Acanthium illyricum, aliis Onopordon. *Bauh. hift.* 3. 55.

Acanthium illyricum. *Lob. ic.* 1. *Barr. ic.* 501. *Park. theat.* 979. *f.* 2. *Raii hift.* 313. *Mor. hift. f.* 7. *t.* 30. *f.* 3.—purpureum. *Ger.* 988. 2. *emac.* 1149. 2.

Calyxes fquarrofe, lower fcales hooked, leaves lanceolate pinnatifid.

[3. Onopordum deltoides. *Siberian Onopordum.*

Ait. hort. kew. 3. 147.

Calyxes fquarrofe cobwebbed-tomentofe, leaves petioled ovate angular tomentofe underneath.]

4. Onopordum arabicum. *Arabian Onopordum.*

Lin. fpec. 1159. *fyft.* 728. *Reich.* 3. 691. *hort. upf.* 249. *Jacqu. hort.* 2. 70. *t.* 149.

Carduus tomentofus, Acanthi folio, altiffimus lufitanicus. *Tournef. inft.* 441. *Barr. ic.* 591.

C. toment. Acanthium dictus arabicus. *Pluk. phyt. t.* 154. *f.* 5.

Acanthium lufitanicum. *Mor. blæt. Raii hift.* 313.—altiffimum. *Hort. reg. par. Mor. hift.* 3. 153. *n.* 5.

Calyxes imbricated.

5. Onopordum græcum. *Grecian Onopordum.*

Lin. fyft. 728. *fuppl.* 349. *Gouan obf.* 64. *t.* 25.

Carduus græcus parvus, Acanthi folio tomentofo, flore minore. *Tournef. cor.* 31.

Calyxes fquarrofe cobwebbed-tomentofe, leaves fpiny fabulate-lanceolate finuate tomentofe.

6. Onopordum acaulon. *Dwarf Onopordum.*

Lin. fpec. 1159. *fyft.* 728. *Reich.* 3. 691. *Jacqu. mifc.* 2. 310.

O. acaulon ferine, flore albicante. *Juff. Vaill. act.* 153. *Hall. goett.* 357.

O. uniflorum. *Cavan. hifp.* 60. *n.* 96. *t.* 88?

Stemlefs.

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7. Onopordum orientale. *Oriental Onopordum.*

Mill. dict. n. 4.

Carduus tomentofus, Acanthi folio aleppicus, magno flore. *Tournef. inft.* 441.

Calyxes fquarrofe, leaves oblong pinnate-finuate decurrent, beard large.

DESCRIPTIONS, *&c.*

Thefe are in general tall large herbaceous plants, with great leaves like thofe of Acanthus, prickly and frequently tomentofe. Roots biennial. The fixth has the flower growing clofe to the ground; and the third is faid to be perennial.]

1. Cotton Thiftle the firft year puts out many large downy leaves, finuated on their edges and very prickly; they fpread on the ground, and continue the following winter. In the fpring the ftalk arifes in the middle of the leaves, upon dunghills or good ground growing five or fix feet high, and dividing at top into many branches, which have leafy borders running along them, indented, and each indenture terminated by a fpine. The ftalks are terminated by fcaly heads of purple flowers, appearing in june. To thefe fucceed oblong angular feeds crowned with a hairy down.

[The whole plant is generally covered with a clofe down, giving it a whitifh green colour. Root-leaves finall, waved and pinnatifid. Stem-leaves oval-lanceolate, decurrent, the lower ones very large, with deep triangular teeth; thefe again toothed, each tooth terminated with a fharp whitifh fpine, being the elongated nerves increafed in thicknefs and rendered rigid juft before they approach the margin. Upper leaves lanceolate, with a few diftant teeth terminated by fpines. The decurrent membranes are alfo irregularly toothed, each tooth furnifhed with fimilar fpines, which proceed from the ftem, and extend the membranes. Flowers fimple, upright, terminating. Calyx of numerous expanding awl-fhaped fcales, terminating in fharp fpines. Florets purple, fometimes white [a]. Seeds obovate, a little flattened, faintly angular, wrinkled, blackifh; crowned with a down, which is flightly hifpid when magnified. Receptacle reticulated with fquare membranous cells, like a honeycomb. It is diftinguifhed from the Thiftles by the laft circumftance; and when the flowering is over, the innermoft fcales of the calyx clofe ftrongly together. In the Thiftles, as foon as the feed is ripe, the firft hot day opens the heads, expands the pappus, and the leaft wind carries away the feeds: but in this plant they remain fhut up, and ftrongly defended; nor can they commit themfelves to the earth, or be eaten by birds, till long expofure to the weather has decayed the calyx; on this account, they afford fuftenance to birds late in the year. It is not very fubject to the depredations of infects, and it is defended by its ftrong fpines from the attacks of moft quadrupeds [b]; the afs alone will fometimes browze on it.

The receptacle of the flowers, and the tender ftalks peeled and boiled, may be eaten in the fame manner as Artichokes and Cardoons. The ancients thought this plant a fpecific in cancerous cafes [c]; fome of the moderns recommend its ufe externally in a cancer of the lips and face. According to Scopoli, a decoction of the root is reckoned a fpecific in a recent gonorrhœa.

Native of Europe, on dry banks and in wafte places near habitations, feldom in open fields. It flowers in june and july.

Its names in Engliſh are Cotton Thiftle, Oat Thiftle, wild White Thiftle, Argentine or Silver Thiftle; in Yorfhire Pig-leaves.]

2. This rifes with a taller ftalk than the former; the leaves are much longer and narrower, and the indentures on their fides are regular, ending in fharp fpines. The heads of flowers are larger, and the fpines of the calyx are longer than thofe of the firft fort.

[The ftem has fix prickly wings; the peduncles are naked. The feeds have tranfverfe wrinkles, and are crowned by a feffile egret of open feathered hairs, fhorter than the tube of the floret, and even than the calyx: the feeds are more lengthened out than thofe of the preceding, which have none of the tranfverfe wrinkles, and the hairs of the egret are lefs feathered [d].

According to Linnæus, it is a hoary afh-coloured plant; the ftem has waved wings ending for a fpace below the calyx, the lower fcales of which are lanceolate, bent back and hooked.

Receptacle flat, alveolate, and within each cell accompanied with a very fmall chaff, adhering to the bafe of the feed, and falling with it. Seeds obovate, compreffed-rhomb-fhaped, ftriated with a few longitudinal raifed lines, and tranfverfe obfolete wrinkles between them, afh-coloured. Pappus, egret or down twice as long as the feed, caducous, with filiform rays, very frequently toothletted, almoft equal, united at the bafe in a ring.

The feeds of the firft fpecies are in every refpect like this, except that they are fomewhat fmaller and rufefcent. The falling of the chaff with the feed is fingular in this genus [e].

Native of the South of Europe.] Mr. Miller fays, Spain, Portugal and the Levant. [Mr. Ray is furprifed that Botanifts fhould fetch this plant from Illyria, when it is common not only in Italy and Sicily, but in the South of France: he found it abundantly about Orange.—It was cultivated here in 1640, as appears from Parkinſon.

3. Native of Siberia. Introduced in 1784, by Mr. John Bell. It flowers in auguſt, and is perennial [f].]

4. This grows to the height of nine or ten feet; the ſtalks divide into many branches; the leaves are

[a] Woodw. Mſs. [b] Curtis. [c] Withering. [d] Villars. [e] Gærtner. [f] Hort. kew.

longer than in any of the other species; the heads of flowers are large and of a purple colour.

[Native of the South of Europe. Miller says, Spain and Portugal; Linnæus, Portugal and the South of France.—Cultivated in 1692, in the botanic garden at Oxford, as appears from Plukenet[a]. Ray muſt have had it much earlier, for in his hiſtory, publiſhed in 1686, he ſays: "Carduum hunc Cantabrigiæ olim "in hortulo noſtro ahimus, e ſemine Londino ac- "cepto ortum."

5. This is an annual plant, of a middle nature between the *arabicum* and *Acanthium*. Stem from a palm or foot to three feet in height, and very tomentoſe. Root-leaves lanceolate, a foot and half long or more, a palm in width, cloſely tomentoſe and hoary; ending in a pinnatifid petiole, ſinuate-pinnatifid and prickly. Stem-leaves running down the ſtem. Peduncles ſolitary, one-flowered, ſhort, ſcarcely an inch long, curled with one or two decurrent leaflets. Calyx more ovate, and more cobwebbed-tomentoſe than in the reſt, the ſize of a large walnut: ſcales more erect and more lanceolate than in *O. Acanthium*, leſs than in *O. arabicum*; hence the calyxes are leſs ſquarroſe, or more imbricate. Corollas purple, very narrow.

It differs therefore from *O. Acanthium* by its lanceolate tomentoſe-hoary leaves; which in that are ovate and greeniſh, ſcarcely tomentoſe except the young ones: by its imbricate calyxes, with lanceolate ſcales, the lower and outer ſhorter: whereas in *O. Acanthium* the calyxes are ſquarroſe, with awl-ſhaped ſcales, all nearly equal, namely the outer of the ſame length with the inner ones.—Native of the Levant[b].

6. Root biennial, fuſiform, half a foot long, ſtraight, black and irregular on the outſide. Stem ſingle, not more than two inches in height, erect, terminated by a ſeſſile flower. Leaves of the firſt year radical; of the ſecond cauline, many, cluſtered eſpecially at the top of the ſtalk and ſpreading out in a ring, ſo that the plant when ſeen from above appears to be ſtemleſs; they are petioled, tomentoſe and hoary on both ſides, oblong, pinnatifid, thickiſh, veined, ſomewhat wrinkled at the back, tooth-ſpiny at the edges, pungent and ſquarroſe. The petioles of ſome of the inner leaves bear a ſeſſile flower, and are then round and thick, whereas at other times they are flat at top; they may perhaps more properly be called pedunckes, or one-flowered branchlets, ſpringing from the ſtem, and furniſhed with a leaf next the flower. Calyx ſmooth, green, pungent and ſquarroſe, with the inner ſcales erect and purple. Florets quite white. Seeds angular. Down hairy, prickly-hiſpid when examined by a glaſs[c].

The native place of this ſpecies is not known. It was cultivated in 1739, by Mr. Miller, and flowers in July and auguſt[d].

Cavanilles has a plant, which he names O. uniflorum, a native of Catalonia, that ſeems to be the ſame with this. He deſcribes the root as brown, the ſpines of the leaves as yellow, the flowers as ſolitary and ſeſſile, the ſcales of the calyx as numerous and ſmooth, the outer ones ſhorter, all ending in a rigid thorny point. Receptacle naked, honeycombed. Seeds crowned with a long down. He makes no mention of any ſecondary heads of flowers, nor are any repreſented in the figure. He does not mention the colour of the florets.]

7. This riſes with an upright branching ſtalk ſeven or eight feet high; the leaves are long and regularly ſinuated on their borders, like pinnatifid leaves; the heads of flowers are very large, and the calyxes very ſquarroſe and prickly. It grows naturally about Aleppo.

PROPAGATION AND CULTURE.

Some of theſe plants were formerly cultivated for the table, but it was before the Engliſh gardens were well ſtocked with other eſculent plants; at preſent they are rarely eaten here. They require no culture, and if the ſeeds are permitted to fall, the plants will come up faſt enough.

[ONOPERDIS. See *Aſplenium*.]

[a] Hort. kew. [b] Gouan. [c] Jacquin. [d] Hort. kew.

ONOSMA. (*The name of an herb in Dioſcorides and Galen, from ονος, aſs.*)

Lin. gen. n. 187. *Reich. n.* 199. *Schreb. n.* 247. *Gærtn. t.* 67. *Juſſ.* 130.

Claſs 5. 1. Pentandria Monogynia.

Nat. order of *Aſperifolia. Borragineæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five parted: *ſegments* lanceolate, erect, permanent.

COR. one-petalled, bell-ſhaped. *Tube* very ſhort. *Border* tubular-ventricoſe, a little thicker than the tube: *mouth* ſubquinquefid. *Throat* naked, pervious.

STAM. *Filaments* five, awl-ſhaped, very ſhort. *Anthers* ſagittate, erect, the length of the corolla.

PIST. *Germ* four-parted. *Style* filiform, the length of the corolla. *Stigma* blunt.

PER. none. *Calyx* unchanged.

SEEDS four ovate.

ESSENTIAL CHARACTER.

Cor. bell-ſhaped, with the throat pervious. *Seeds* four.

SPECIES.

1. Onoſma ſimpliciſſima. *Simple Onoſma.*
Lin. ſpec. 196 *ſyſt.* 183. *Reich.* 1. 396. *Gmel. ſib.* 4. 76. *t.* 40. *Pallas it.* 2. 84.
O. ſimplex. *Gærtn. fruct.* 1. 325.
Echium creticum. *Alp. exot.* 130. *t.* 129. *Mer. bib.* 3. 439. *f.* 11. *t.* 27. *f.* 3?
Leaves cluſtered lanceolate-linear hairy.
2. Onoſma orientalis. *Oriental Onoſma.*
Lin. ſpec. 196. *Reich.* 1. 396.
Cerinthe orientalis. *Lin. amœn.* 4. 267.
Leaves lanceolate biſpid, fruits pendulous.
3. Onoſma echioides. *Hairy Onoſma.*
Lin. ſpec. 196. *ſyſt.* 188. *Reich.* 1. 396. *Jacqu. auſtr.* 3. 52. *t.* 295. *Pallas it.* 1. 254. & 2. 463. *Plenck, ic.* 81. *Allion. pedem. n.* 1719. *Villars dauph.* 2. 453. *Krock. ſilef. n.* 286. *Gærtn. fruct.* 1. 326.
Cerinthe echioides. *Scop. carn. n.* 197. *Lin. hort. cliff.* 48.
Symphytum foliis lingulatis hiſpidis. *Haill. helv. n.* 601.
Anchuſa lutea minor. *Bauh. pin.* 255. *Bauh. hiſt. Park. theat.* 515. *Raii hiſt.* 497. *Sabb. hort.* 2. *t.* 32.
A. echioides lutea, Cerinthes flore, montana. *Col. ephr.* 1. 182. *t.* 183.
Symphytum anguſtifolium apulum. *Park.*
β. Anchuſa lutea. *Dalech. hiſt.* 1102. *Bauh. hiſt. Ger.* 656. 2. *emac.* 800. 2. *Raii hiſt.* 497.
A. lut. major. *Bauh. pin.* 255. *Park. theat.* 516. *f.* 1.
A. tertia. *Cumer. epit.* 736.
Leaves lanceolate biſpid, fruits erect.

DESCRIPTIONS, &c.

1. [Flowering top nodding, yelloviſh white. Corolla of Symphytum, ſcarcely five-cleft: but it has none of the rays which that has, ſo that the throat is naked. Corolla conſtantly white. The wild plant is never more than a foot high, and ſoft to the touch. Seeds, which Gærtner calls nuts, ſmall, ſtony, ovate, with a little beak, ſlightly convex on one ſide, angular on the other, with a triangular little area at the baſe, not perforated; the reſt highly poliſhed and ſhining, whitiſh aſh-colour, variegated with teſtaceous dots and very ſlender lines, one-celled, valveleſs. Seed ovate-acuminate, compreſſed a little, brown-bay, flattened by a capillary chord at the apex.

Native of Siberia: abundant on the calcareous rocks by the Wolga, but not deſcending to the Ukraine, where the laſt ſpecies is very common[a].

2. Native of the Levant. Pallas thinks that he has given a figure of this ſpecies, which he found growing near the Caſpian ſea, in the ſecond volume of his travels, *tab. L.* It is marked as a ſhrub by Linnæus.] Miller ſays that this and the preceding are generally biennial plants, at leaſt here; though ſometimes, when they grow out of the joints of walls, or the fiſſures of rocks, they will abide three or four years.

[a] Linn. [b] Gærtner.

3. [Root-

3. [Root fusiform, with a bark peeling off in scales, which are red as vermillion. Leaves long and narrow, rough, villose and whitish. Flowers terminating, resembling those of Symphytum[1]. Seeds or nuts larger by half than those of the first sort, bay ash-coloured all over, frequently marked on the side of the back with two whitish eyes surrounded with a brown ring; they are very smooth and shining, and sharply keeled[2].

Native of the South of Europe: Italy, France, Switzerland, Austria, Hungary. Cultivated here in 1683, by Mr. James Sutherland. It flowers from march to june[3].

β. The larger variety was observed by John Bauhin between Vienne and Lyons, and on the Euganean hills by Padua; by Ray near Lyons, on the road to Geneva[4]. The roots of both yielding a very fine red dye, might serve all the purposes of Anchusa tinctoria or Alkanet[5].

Dr. Smith thinks that Columna's plant is a different species from this, being less hairy, and the bristles on the leaves curiously stellated at their base[6].]

PROPAGATION AND CULTURE.

These plants being natives of rocks, are best cultivated on a wall or rubbish. Sow the seeds soon after they are ripe, laying the stalks over the place, to shade them from the sun. When the plants are well established, if they are permitted to scatter their seeds, they will maintain themselves very well. In the common ground they are short-lived and apt to rot.

[OOSTREDYKIA. See *Crusnia*.

OPERCULARIA. (*From* operculum, *a lid.*)
Lin. gen. Schreb. n. 152. & *p.* 819. *Gærtn. t.* 24.
Rubioides. *Soland.* An Pomax. *Soland.*
Class. 4. 1. Tetrandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth common* one-leafed, bell-shaped, three to six-flowered, six to nine-toothed: teeth acute, unequal: permanent.
Perianth proper none.
COR. *Universal* equal.
Proper one-petalled, funnel-form: *mouth* four or five-cleft, erect.
STAM. *Filaments* four, inserted into the receptacle. *Anthers* distinct.
PIST. *Germ* inferior, immersed in the receptacle. *Style* filiform. *Stigma* thickish, bifid.
PER. none.
SEEDS solitary, convex on one side, grooved on the other.
REC. *Common*, flat above, closing the aperture of the calyx below the teeth, below pyramidal, grooved-angular: the angles continued into partitions, by which the cavity of the calyx is divided into cells equal to the number of seeds: deciduous.

ESSENTIAL CHARACTER.

Flower compound. *Cal. common* one-leafed, unequally toothed, closed by a common receptacle, flowering above, seeding below, falling when ripe.

SPECIES.

1. Opercularia umbellata.
Gærtn. fruct. 1. 112.
Pomax umbellata. *Soland. Mss.*
Florets in the disk three, corollets three-toothed.
2. Opercularia aspera.
Gærtn. fruct. 1. 112.
Rubioides aspera. *Soland. Mss.*
Corollets four or six, border four or five-parted.
3. Opercularia diphylla.
Gærtn. fruct. 1. 113.
Rubioides diphylla. *Soland. Mss.*
Common calyxes hispid.

DESCRIPTIONS, *&c.*

1. Florets in the disk three, separate. Corollets three-toothed. Stamen one. Style one, or sometimes but seldom two. Pericarp none, unless the common calyx of the flower be reckoned as such; it is bell-shaped, cut with seven or nine unequal teeth; the seeds are inclosed within the cavity of it, equal in number to the corollets. Common receptacle fungous, above flat, corolliferous, rounded, exactly closing the aperture of the calyx near the teeth. Proper receptacle a small scar at the inner angle of the cells, from which the seeds hang downward. Seeds in each partial cell one, in the whole fruit commonly three, seldom four, obovate, variously shagreened with tubercles and wrinkles, slightly convex on one side, angular with a prominent groove on the other, black.—Native of New Holland.

2. Corollets to each calyx four or six, funnel-form, white: tube widening at top, twice as long as the calyx; border four or five-parted, segments lanceolate, acute, shorter than the tube. Stamens four or five, inserted into the receptacle not the corolla. Anthers separate. Style deeply bifid. Common calyxes heaped into a globular pedunculed head, almost hemispherical, grooved, with from six to nine unequal acuminate teeth. Common receptacle almost hemispherical, four or six-grooved. Seeds four or six, obovate, brown, convex on one side, and having two raised fungous white grooves on the other.—Native of New Zealand.

3. Heads as in the preceding, but little more than half the size. Common calyxes hispid with rigid bristles. Cells three or four, below as many four-flattened flowers. Seeds small, elliptic, white, roughened on every side with irregular tubercles, slightly convex on one side, angular on the other with a raised wrinkled longitudinal groove.—Native of New Zealand[7].

OPHIOGLOSSUM (*of Pliny. From* οφις, *a serpent, and* γλωσσα, *a tongue.*)
[*Lin. gen. n.* 1172. *Reich. n.* 1288. *Schreb. n.* 1621. *Tournef. t.* 325. *Juss.* 14. *Hedw. theor.* 41. *t.* 4. *f.* 21—23.
Class. 24. 2. Cryptogamia Filices.
Nat. order of *Filices* or *Ferns.*

GENERIC CHARACTER.

Capsules numerous, connected by a membrane into a distich spike, subglobular, when ripe opening transversely, without any elastic ring.
Seeds very many, extremely minute.
OBS. Ophioglossum scandens, *and perhaps those species which are very nearly allied to this with a twining stem, recede in some degree from the common sort and those which resemble it, in the fructification.*

SPECIES.

1. Ophioglossum vulgatum. *Common Adder's-tongue.*
Lin. spec. 1518. *fil.* 926. *Reich.* 4. 377. *A. suec. n.* 932. *hort. cliff.* 472. *Hudf. angl.* 449. *Wither. arr. ed.* 3. 761. *Engl. bot.* 708. *Lightf. scot.* 631. *Relh. cant. n.* 754. *Sibth. oxon. n.* 737. *Hall. helv. n.* 1685. *Sup. carn. n.* 1246. *Pollich pal. n.* 953. *Weis. crypt.* 283. *Fl. dan.* 147. *Villars dauph.* 3. 836. *Knoph. cent.* 6. *n.* 64. *Knorr. del. hort.* 2. *t.* O. 3. *Blackw. t.* 416. *Sibeldr.* 28. *Baub. pin.* 354. *Plum. fil.* 36. *t.* B. *f.* 5. *Mor. hift.* 3. 595. *f.* 14. *t.* 5. *f.* 1. *Bellon* 3.
Ophioglossum. *Baub. hift.* 3. 768. 2. *Camer. epit.* 364. *Ger.* 327. *emac.* 404. 1. *Raii hift.* 126. *fyn.* 128. *Trag.* 323. *Matth.* 594. *Fuchf.* 577. *Dod. pempt.* 139. 1. *Lonic.* 1. 103. *Lob. obf.* 271. 1. *ic.* 1. 808. 2.
O. 6. Lingua serpentina. *Park. theat.* 506.
Serpentaria secunda. *Brunfels.*
Lingua serpentina. *Cæsalp.*
α. Folio sinuato.
β. Folio anguloso. *Baub. pin.* 354. 2. *prodr.* 150. 1.
γ. Minus subrotundo folio. *Baub. pin.* 354. 3. *prodr.* 150. 2.
δ. Spica multiplici.
Wither. arr. var. 2. *Blackw.* 416. 3. *Relh.* 1. 1. *Lob. ic.* 1. 809. 1. *Ger. emac.* 404. 2. *Mor. f.* 2—6. *Camer. epit.* 304. *Park. theat.* 506.
Fronds ovate swinless bearing the spike.

[1] Villars. [2] Gærtner. [3] Hort. kew. [4] Ray hift. [5] Villars. [6] Travels 2. 308. [7] Gærtner.

2. Ophioglossum nudicaule. *Naked Adder's-tongue.*
Lin. syst. 926. *suppl.* 443.
Fronds ovate, scape leafless.

3. Ophioglossum lusitanicum. *Portugueze Adder's-tongue.*
Lin. spec. 1518. *Reich.* 4. 377. *Gris. hist. Barr. rar.* 1280. *t.* 252. *f.* 2. *Lour. cochinch.* 672.
Frond lanceolate.

4. Ophioglossum reticulatum. *Netted Adder's-tongue.*
Lin. spec. 1518. *Reich.* 4. 377. *Brown. jam.* 108. 1. *Plum. fil.* 141. *t.* 164. *Pet. fil.* 179. *t.* 10. *f.* 4.
Frond cordate.

5. Ophioglossum palmatum. *Palmate-leaved Adder's-tongue.*
Lin. spec. 1518. *Reich.* 4. 377. *Plum. fil.* 139. *t.* 163. *Pet. fil.* 178. *t.* 11. *f.* 2.
Frond palmate with the spike at the base.

6. Ophioglossum pendulum. *Pendulous Adder's-tongue.*
Lin. spec. 1518. *Reich.* 4. 377.
Scolopendra major. *Rumph. amb.* 6. 84. *t.* 37. *f.* 3.
Fronds linear very long undivided.

7. Ophioglossum scandens. *Climbing Adder's-tongue.*
Lin. spec. 1518. *Reich.* 4. 378. *hort. cliff.* 473. *fl. zeyl. n.* 374. *Lour. cochinch.* 672. *Burm. ind.* 227. *Brown. jam.* 100, 24. (Polypodium).
Filix scandens pulchra brasiliana. *Breyn. cent.* 185. *t.* 96.
Lonchitis scand. bras. pinnulis eleganter laciniatis. *Mor. hist.* 3. 568. *s.* 14. *t.* 3. *f.* 15.
Adiantum volubile. *Rumph. amb.* 6. 75. *t.* 32. *f.* 2.
Tseru-valli-panna. *Rheed. mal.* 12. 65. *t.* 33.
Stem flexuose round, fronds conjugate pinnate, leaflets spike-bearing on both sides.

8. Ophioglossum flexuosum. *Winding-stalked Adder's-tongue.*
Lin. spec. 1519. *syst.* 926. *Reich.* 4. 378. *suppl.* 443. *fl. zeyl. n.* 375.
Adiantum volubile majus. *Rumph. amb.* 6. 75. *t.* 32.
Valli-panna. *Rheed. mal.* 12. 6. *t.* 32.
Scape flexuose round, fronds opposite petioled palmate, pinnas lanceolate quite entire smooth.

9. Ophioglossum japonicum. *Japonese Adder's-tongue.*
Lin. syst. 926. *Thunb. jap.* 328.
Stem flexuose angular, fronds superdecompound, pinnules alternate gashed.

DESCRIPTIONS, *&c.*

These are Ferns in habit and fructification, but not having the seed on the back of the frond, Ray did not include them among his hypophyllospermæ or true Ferns, nor has Dr. Smith treated of them among his Dorsiferæ.

According to Jussieu, the genuine Ophioglossums have a radical leaf, not convoluted, generally simple and nerveless, putting forth a spike usually simple and pedunculed. The spurious sorts have branched fronds, several times pinnate, or superdecompound, when young convoluted like the true Ferns, when older radiately spike-bearing in the circumference of the leaflets, the spikes sessile imbricately and distichally scaled: the genus therefore ought to be divided, as it is it constitutes a middle link between the Mosses and Ferns. Jussieu doubts whether the spike be male only, or as Hedwig is inclined to think, has both sexes in each cell of it.

1. Common Adder's-tongue has a fibrous root, and a single stem, round, very smooth, upright, simple or unbranched, from a hand or finger's length to a span or more in height; terminated by a distich, jointed, tongue-shaped, greenish spike, brown when ripe; subtended by a single, long-ovate, succulent, nerveless leaf, embracing the stalk with its base: the joints burst transversely when ripe, and throw out numerous very minute seeds[a]. The leaf is commonly quite entire, but it is sometimes sinuated, angular, or slightly lobed with small appendages on one or both sides. Bauhin has also described a variety which is smaller with a roundish leaf. The spike is naturally simple, but sometimes the stalk divides at top, each branch supporting a spike, and the spike itself sometimes divides into two or three[b].

[a] Lightfoot. [b] Bolton and Withering.

Many of the stalks are barren, producing a leaf only, without a spike.

The common people make an ointment with the fresh leaves, and use it to green wounds, calling it Adder-spear ointment. It is a very ancient application, recommended by Matthiolus, Tragus and others[a].

Native of Europe, in moist meadows. In England it is not uncommon; in Scotland, but not very common; in Ireland, in meadows by the banks of rivers, that leave sand and mud after floods. With us it was found by Mr. Newton by Bow, Hackney Marsh; by Dr. Sibthorp at Bosley, Cowley, Headington and South Leigh in Oxfordshire. In Granchester meadow, Whitwell, &c. in Cambridgeshire. At Bedingham near Bungay, and near Mettingham-castle in Suffolk. Broadmoore near Birmingham; and near Blymhill in Staffordshire. Love-lane near Derby. Observed in meadows and by the sides of rivulets in the north of Yorkshire by Mr. Curtis. Between Otpringe and Ore in Kent. Near Hampstead and Harefield in Middlesex. Eastwood and Gedling in Nottinghamshire.

2. This is a very small plant, not an inch high. Root bundled, filiform. Leaves few, radical, petioled, quite entire. Scape filiform. Spike the length of the scape, a little thicker.—Native of the Cape of Good Hope. Found there by Thunberg[a].

3. Herb annual, stemless, two inches high, erect. Leaf single, petioled, acute, quite entire, smooth, the length three times as great as the breadth. Spike solitary, fastened to the base of the leaf, simple, linear, compressed, straight, equal, divided on both sides by many lateral notches, emitting a yellow pollen, or rather perhaps very minute seeds[a].—Native of Portugal, China and Cochinchina.

4. This plant rises commonly to the height of five or six inches above the root[a].—Native of Jamaica and the continent of South America.

5. Native of South America.

6. Native of the East Indies, parasitical on trees, from which it hangs down[a].

7. This is a climber, and rises to a considerable height on trees: the stalk is smooth and slender, the leaves of a nervous texture, and sometimes divided into two or more unequal parts[a]. Pinnas cordate-hastate or hastate-lanceolate. Fronds not opposite, but conjugate at the tubercles of the branches.

Stem fustiruncose, long, slender, round, branched. Fronds unequally pinnate, with about four pairs of leaflets; which are hastate-lanceolate, the lobes rounded at the base. Spikes linear, distich, longish, fastened to the leaflets[a].

Native of both Indies, China and Cochinchina, and every where within the tropics.

8. Very nearly allied to the preceding. Fronds remote on the stem, three or four-lobed.—Native of the East Indies[a].

9. Stem filiform, two-angled, smooth, scandent. Fronds alternate; lower three-parted, the middle lobe lanceolate, gash-serrate; lateral ones bifid, serrate, smaller; the upper bipinnate with gashed pinnules; the uppermost flowering, with linear, equal, entire pinnules.

It differs from O. flexuosum in its superdecompound frond, alternate not opposite pinnæ, alternate pinnules, gash-pinnatifid, with serrate incisures, and the flowering pinnules linear. It differs from O. scandens in having the outmost pinna not elongated, not eared at the base, and the frond decompound with about three pinnæ, three-gashed.—Native of Japan[a].

Ophioglossum zeilanicum. *Heart.* the same with Acrostichum quercifolium of Retzius, and Osmunda trifida. *Jacq. collect.* 1.

OPHIORHIZA. (*From* ὀφις, *a serpent, and* ῥιζα, *a root.*)

Lin. gen. n. 210. *Reich. n.* 273. *Schreb. n.* 273. *Fl. zeyl.—Gærtn. t.* 55. *Juss.* 193.
Mitreola, *edit. prior.* Mitra. *Houst.*

[a] Lightfoot. [a] Linn. suppl. [a] Loureiro.
[b] Browne. [a] Linn. [a] Browne. [a] Loureiro.
[a] Linn. suppl. [a] Thunberg.

Class. 5. 1. Pentandria Monogynia.
Nat. order of *Stellatæ*. *Gentianæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, erect, compreſſed, five-toothed, equal, permanent.
COR. one-petalled, funnel-form: *tube* inflated at the baſe: *throat* almoſt cloſed with hairs: *border* five-cleft, blunt, ſpreading.
STAM. *Filaments* five, filiform, very ſhort, inſerted into the tube. *Anthers* oblong, the height of the tube.
PIST. *Germ* biſid, ſuperior. *Style* filiform, the length of the ſtamens, thicker above. *Stigmas* two, blunt.
PER. *Capſule* two-lobed, wide, bluntiſh: lobes oblong, divaricated, two-celled: opening inwards with a contrary partition.
SEEDS numerous, angular, fixed all round to an oblong pedicelled receptacle, looſe in the middle of each cell.

ESSENTIAL CHARACTER.

Cor. funnel-form. *Germ* biſid. *Stigmas* two. *Fruit* two-lobed.

SPECIES.

1. Ophiorhiza Mungos.
Lin. ſpec. 213. *ſyſt.* 197. *Reich.* 1. 426. *fl. zeyl. n.* 402. *mat. med.* 59. *t.* 1. *amœn.* 2. 118. *Pluk. ic.* 90. *Gærtn. fruct.* 1. 264.
Leaves lanceolate-ovate.
2. Ophiorhiza Mitreola.
Lin. ſpec. 213. *ſyſt.* 197. *Reich.* 1. 426. *Swartz obſ.* 59. *t.* 3. *f.* 2.
Mitreola. *Lin. hort. cliff.* 492. *Gron. virg.* 28.
Mitra. *Houſt.*
Leaves ovate.
3. Ophiorhiza ſubumbellata.
Forſt. flor. auſtral. n. 66.
Stem ſhrubby, leaves lanceolate acute, umbels axillary trifid.

DESCRIPTIONS, *&c.*

1. Stem ſimple. Leaves oppoſite, quite entire, ſmooth, with obliquely tranſverſe nerves, petioled. Peduncle terminating the ſtem with a corymb of ſimple or biſid ſpikes, digeſted umbel-wiſe, from one centre, and ſpreading. Flowers ſeſſile from the upper ſide of the horizontal ſpike[a]. Capſule tranſverſely wider or two-lobed: lobes oblong, diverging, blunt, above compreſſed to a membranaceous edge, below ſubventricoſe, with a groove along the middle on each ſide, two-celled, opening along the upper edge: partition very narrow, contrary to the valves. Receptacle long, ſlender, cylindric-acuminate, attenuated below into a very ſhort pedunele, and faſtened on both ſides to the middle of the partition, in other parts looſe, aſcending from the horizontal line, deciduous in maturity. Seeds very numerous and ſlender, variouſly angular, remarkably acuminate towards the navel, ferruginous[b].

Native of the Eaſt Indies. Called in Ceylon *Ekanteeya* and *Naphawalli*, from Nagha the Ribband Snake, for the bite of which the leaves of this plant are accounted a ſpecific[c]. This is quite different from the true *Radix Mungos, Kæmpf. amœn.* 573. as appears, from a compariſon of the fruits[d].

2. Roots from the lower joints of the ſtem in bundles, long, filiform, white. Stem herbaceous, a foot high, ſimple or branched, erect, four-cornered at bottom, towards the upper part roundiſh, ſmooth, looſe. Leaves petioled, oppoſite, lanceolate-ovate, acuminate, entire, ſmooth on both ſides. Leaflets in the axils of the larger ones. Peduncles terminating, dichotomous, looſe; flowers minute, ſeſſile, directed one way, diſtinct, white: and a ſolitary flower in the forks of the peduncles. Calyx minute, five-parted, with erect ſegments. Corolla tubular, longer than the calyx; ſegments of the border ovate, acute, erect, often bent in: throat villoſe, white. Filaments from the middle of the tube. Anthers converging under the pile of hairs above the ſtigmas. Germ two-parted at the baſe, oblong. Styles two. Stigmas roundiſh, white, pubeſcent. Capſule at the baſe biſid, one-celled, two-valved; the valves opening at the ſide within longitudinally. Seeds numerous, inſerted into two receptacles faſtened to each valve. Annual; flowering in ſpring[e].—Native of America: in Virginia, and in Jamaica, in wet meadows on the banks of rivers.

3. Native of the iſland of Otaheite or Taheiti[f].

OPHIOXYLON. See *Buddlea*.

OPHIOXYLUM. (*From οφις and ξυλον. Serpentine wood.*)
Lin. gen. n. 1142. *Reich. n.* 1264. *Schreb. n.* 1578. *Gærtn. t.* 109. *Juſſ.* 149.
Claſs. 23. 1. Polygamia Monœcia.
Nat. order of *Apocineæ*, Juſſ.

GENERIC CHARACTER.

* *Hermaphrodite* flowers.
CAL. *Perianth* five-cleft, acute, erect, very ſmall.
COR. one-petalled, funnel-form: *tube* long, filiform, thickened in the middle: *border* five-parted, ſpreading a little, without a nectary.
STAM. *Filaments* five, very ſhort, in the middle of the tube. *Anthers* acuminate.
PIST. *Germ* ſuperior, roundiſh. *Style* filiform, the length of the ſtamens. *Stigma* capitate.
PER. *Berry* twin, two-celled.
SEEDS ſolitary, roundiſh.
* *Male* flowers on the ſame plant.
CAL. as in the hermaphrodites (biſid, *ſyſt. &c. G.*)
COR. one-petalled, funnel-form: *tube* long; *border* five-cleft.
Nectary in the mouth of the corolla, cylindric, quite entire.
STAM. *Filaments* two, very ſhort. *Anthers* acuminate, converging within the nectary.

ESSENTIAL CHARACTER.

HERM. *Cal.* five-cleft. *Cor.* five-cleft, funnel-form. *Stam.* five. *Piſt.* one.
MALE. *Cal.* biſid. *Cor.* five-cleft, with a funnel-form mouth. *Nect.* cylindric. *Stam.* two.

SPECIES.

1. Ophioxylum ſerpentinum. *Scarlet-flowered Ophioxylum.*
Lin. ſpec. 1478. *ſyſt.* 921. *Reich.* 4. 329. *fl. zeyl. n.* 398. *mat. med.* 219.
O. triſoliatum. *Gærtn. fruct.* 2. 129.
Liguſtrum foliis ad lingula geniculata ternis. *Burm. zeyl.* 141. *t.* 64.
Radix muſtelæ rubra. *Rumph. amb.* 7. *p.* 30. *doctr. non ſi.* ſec. Gærtn.
Tajovanna. *Rheed. mal.* 6. 87. *t.* 7.
Clematis indica, perſicæ foliis, fructu periclymeni. *Bauh. pin.* 304.

DESCRIPTION, *&c.*

Stem upright, round, quite ſimple. Leaves in fours placed croſs-wiſe, lanceolate-ovate, ſmooth, acuminate, petioled. Nectary like that of Narciſſus. Calyx biſid. Stamens two in the mouth of the corolla[g].

According to Burmann the ſtem is three-cornered, jointed, ſtriated, at each joint are three leaves, which are oblong acuminate, entire not ſerrate, in which they differ from thoſe of the Peaca-tree, whoſe form they reſemble: petioles ſhort. At the top of the ſtem are many ſhorts in a ſort of umbel. Stamens two.

This ſhrub, as Juſſieu deſcribes it, has three or four leaves in whorls: flowers glomerate, terminating, males mixed with the hermaphrodites, two-ſtamened only, with a cylindric entire crown at the throat of the tube, without any germ.

Berry ſeſſile, two-lobed, within a very ſmall three or five-cleft calyx, lenticular-compreſſed, two-celled, of a brick-red: pulp thin, firm: ſtones ovate, acuminate at both ends, but moſt towards the baſe, obſoletely wrinkled, thick, lenticular-compreſſed, one-celled. Seeds ſolitary, ovate, narrowed upwards, compreſſed a little, pale.—The freſh fruits, according to Rumphius, have a twin and very blunt berry, compoſed of two globes, as in the Honeyſuckle, and filled with a watery pulp. Gærtner has deſcribed them as they appeared to him, and as Burmann has repreſented them. Rumphius's figure is not of this ſpecies, but of another, which Gærtner names *alba*, with

[a] Linn. zeyl. [b] Gærtner. [c] Linn. zeyl. [d] Gærtner. [e] Swartz. [f] Forſter. [g] Linn. zeyl.

oppofite cruciate leaves, white flowers, and black berries*.

They are both natives of the Eaft Indies.—Scarlet-flowered Ophioxylum was cultivated in 1690, in the Royal Garden at Hampton Court. It flowers in may and june*.

OPHIRA.

Lin. gen. Reich. n. 525. *Schreb. n.* 662. *Juff.* 321. *a Fe. Burmanno.*

Claff. 8. 1. Octandria Monogynia.

Nat. order of *Onagræ*, Juff.

GENERIC CHARACTER.

CAL. *Involucre* two-valved, three-flowered: *valves* lateral, kidney-form, emarginate, conduplicate, permanent.

COR. four-petalled, fuperior. *Petals* oblong, converging.

STAM. *Filaments* eight, the length of the corolla. *Anthers* ovate.

PIST. *Germ* inferior, turbinate, hifpid. *Style* filiform, fhorter than the ftamens. *Stigma* emarginate.

PER. *Berry* one-celled.

SEEDS two.

OBS. *It bears much refemblance to* Grubbia *of Berg-ius, which has a fuperior germ and fimple ftigma.* Mantiff.

ESSENTIAL CHARACTER.

Involucre two-valved, three-flowered. *Cor.* four-petalled, fuperior. *Berry* one-celled.

SPECIES.

1. Ophira ftricta.

Lin. fyft. 371. *Reich. 2. 189. mant.* 229.

DESCRIPTION, *&c.*

This is an upright fhrub, with oppofite, ovate-linear leaves, and lateral feffile flowers. Found in Africa by Burmann †.

Juffieu remarks that it is allied to Cornus, and that hence Grubbia is allied to Empetrum.]

OPHRYS (*of Pliny. From* οφις, *the eye-brow; one fpecies having been ufed either to blacken the eye-brows or to make them grow.*)

Lin. gen. n. 1011. *Reich. n.* 1096. *Schreb. n.* 1369. *Tournef. t.* 250. *Juff.* 65.

Claff. 20. 1. Gynandria Diandria.

Nat. order of *Orchidex.*

GENERIC CHARACTER.

CAL. *Spathes* wandering. *Spadix* fimple. *Perianth* none.

COR. *Petals* five oblong, converging upwards, equal: two of the fe exterior.

Nectary longer than the petals, hanging down, poſteriorly one fomewhat keeled.

STAM. *Filaments* two, very fhort; placed on the piſtil. *Anthers* erect, covered with the inner margin of the nectary.

PIST. *Germ* oblong, contorted, inferior. *Style* faſtened to the inner margin of the nectary. *Stigma* abſidete.

PER. *Capſule* fubovate, three-cornered, blunt, ſtriated, three-valved, one-celled, opening at the keeled angles.

SEEDS numerous, like faw-duſt. *Receptacle* linear, faſtened to each valve of the pericarp.

OBS. *O. Corallorhiza has four ſtamens or two in each cell.*

ESSENTIAL CHARACTER.

Nectary fomewhat keeled underneath.

SPECIES.

* *With branched Bulbs.*

1. Ophrys Nidus avis. *Bird's-neſt Ophrys.*

Lin. ſpec. 1339. *fyſt.* 812. *Reich. 2. 21. mant.* 488. *ſ. ſuec. n.* 815. *Huſſ. angl.* 388. *Wither. arr. ed.* 3. 32. *Engl. bot.* 48. *Lightf. ſcot.* 522. *Relh. cant. n.* 652. *Sibth. oxon.* 12. *Fl. dan. t.* 181. *Scop. carn. n.* 1131. *Pollich pal. n.* 853. *Gmel. ſib. t.* 25. *n.* 24. *Villars dauph. 2.* 45.

Epipactis Nidus avis. *Hall. helv. n.* 1290. *t.* 37. *Allion. pedem. n.* 1849.

Nidus avis. *Lob. ic. 1.* 195. 1. *Dalech.* 1673. *Raii ſyn.* 382. *Petiv. brit. t.* 70. *f.* 3. *Riv. hex. t.* 7.

Orchis abortiva fuſca. *Bauh. pin.* 86. *Mor. hiſt. ſ.* 12. *t.* 16. *f.* 18.

Or. abortiva ruſa. ſ. Nidus avis. *Park. theat.* 1362.

* Gærtner † Hort. kew. ‡ Linn. mant.

Satyrion abortivum C. Nidus avis. *Ger.* 166. *emac.* 228.

Orobanche affinis Nidus avis. *Bauh. hiſt.* 2. 782. *Raii hiſt.* 1228.

Neottia. *Dod. pempt.* 553. 2. *Act. upſ.* 1740. *p.* 33. *Bulbs in bundles of fibres, ſtem ſheathed leaſleſs, lip of the nectary bifid.*

[2. Ophrys Corallorhiza. *Coral-rooted Ophrys.*

Lin. ſpec. 1339. *fyſt.* 812. *Reich. 4. 21. ſ. ſuec. n.* 816. *Huſſ. angl.* 388. *Wither. arr. ed.* 3. 32. *Lightf. ſcot.* 523. *t.* 23. *Fl. dan. t.* 451. *Villars dauph. 2.* 45.

Corallorhiza. *Gmel. ſib. 1.* 26. *Gunn. norv. 2. t.* 6. *f.* 3. *Hall. helv. n.* 1301. *t.* 44.

C. Neottia. *Scop. carn. n.* 1134.

Neottia. *Act. upſ.* 1740. *p.* 34. *Lin. ſuec. ed. 2. n.* 743. *lapp. n.* 315.

Dentaria aphyllos minor. *Tabern. ic.* 848. *Bauh. hiſt. 2.* 785. *Ger.* 1387. *emac.* 1585. 2. *Park. theat.* 1363. 5.

D. corallodes radice 3. *Cluſ. pannon.* 450.—ſ. aphyllos 3. *hiſt. 2.* 120. 2.

Orobanche radice coralloide. *Bauh. pin.* 88. *Raii hiſt.* 1229. *Mor. hiſt. ſ. 12. t.* 16. *f.* 21.

O. laconum rad. coralli flore albo. *Rudb. elyſ. 2.* 234. *f.* 16.

O. ſpuria ſ. Corallorhiza. *Rupp. gen.* 284. *t.* 2.

O. rad. coralloide ruberrima. *Mentz. pug. 1. 9. f.* 1.

O. virginiana. *Pluk. phyt. t.* 211. *f.* 1, 2.

Bulbs branched fleſhy, ſtem ſheathed leaſleſs, lip of the nectary trifid.]

3. Ophrys ſpiralis. *Spiral Ophrys*, or *Triple Lady's Traces.*

Lin. ſpec. 1340. *fyſt.* 812. *Reich. 4.* 22. *Huſſ. angl.* 389. *Wither. arr. ed.* 3. 33. *Curt. lond. 4.* 59. 270. *Relh. cant. n.* 654. *Sibth. oxon. n.* 34. *Fl. dan. t.* 387. *Segu. ver. t.* 8. *f.* 9. *Valli. par.* 147. *Pollich pal. n.* 854. *Villars dauph. 2.* 46. *Act. upſ.* 1740. *p.* 32.

Epipactis ſpiralis. *Allion. pedem. n.* 1852. *Hall. helv. n.* 1294. *f.* 38.

Scrapias ſpiralis. *Scop. carn. n.* 1135.

Orchis ſpiralis. *Riv. hex. t.* 14.—alba odorata. *Bauh. hiſt. 2.* 769. *Raii hiſt.* 1217. *ſyn.* 378.

Triorchis. *Ger.* 167. *emac.* 218.—alba odorata minor. *Bauh. pin.* 84. *Park. theat.* 1354. 3.

Satyrium 3. vel odoriferum. *Bruſf. herb. 1.* 105.

Teſticulus odoratus. *Lob. obſ.* 89. 2. *ic.* 186. 1. *Dalech.* 1555.—minor. *Dod. pempt.* 239. 2.

Orchiaſtrum autumnale pratenſe ſpirale album odoratum. *Mich. gen.* 30. *Segu. ſuppl.* 253.

β. Triorchis vel terrorchis alba odorata major. *Bauh. pin.* 84. *Pollich, 854.* 3. *Mor. hiſt.* 3. 496.

Teſticulus odoratus major. *Dod.* 239. 1.

γ. Orchiaſtrum æſtivum paluſtre album odoratum. *Mich. gen.* 30. *t.* 26.

δ. Epipactis foliis pleriſque ex lineari-lanceolatis. *Gmel. ſib. 2.* 13. *t.* 3. *f.* 1.

Bulbs aggregate oblong, ſtem ſomewhat leafy, flowers in a ſpiral directed one way, lip of the nectary undivided crenulate.

[4. Ophrys cernua. *Nodding Ophrys.*

Lin. ſpec. 1340. *Reich. 4.* 22.

Bulbs in bundles, ſtem leafy, flowers drooping, lip of the nectary oblong entire acute.

5. Ophrys ovata. *Common Ophrys* or *Twayblade.*

Lin. ſpec. 1340. *fyſt.* 813. *Reich. 4.* 22. *hort. cliff.* 429. *act. upſ.* 1740. *p.* 28. *ſ. ſuec. n.* 808. *Huſſ. angl.* 388. *Wither. arr. ed.* 3. 34. *Curt. lond.* 3. 60. 177. *Lightf. ſcot.* 523. *Relh. cant. n.* 653. *Sibth. oxon. n.* 35. *Fl. dan. t.* 137. *Scop. carn. n.* 1132. *Neck. gallob.* 373. *Pollich pal. n.* 855. *Gmel. ſib. t.* 25. *Villars dauph. 2.* 46.

Ophrys. *Fuchſ. hiſt.* 565. *Matth.* 1225. *Dalech. hiſt.* 1261. *Camer. epit.* 943.

O. biſolia. *Ger.* 326. *emac.* 402. *Bauh. pin.* 87.

Pſeudo-orchis biſ. rad. fibroſa major. *Mor. hiſt. ſ.* 12. *t.* 12. *f.* 1.

Biſolium. *Dod. pempt.* 242. 1. *Lob. obſ.* 161. 3. *ic.* 1. 302. 2. *Lanic.* 1. 241. 2. *Riv. hex. t.* 7.

Bifolium fylveſtre vulgare. *Park. theat.* 504. 1. *Raii ſyn.* 385. *Petiv. brit. t.* 50. *f.* 10.
B. majus ſ. *O.* major. *Bauh. hiſt.* 3. 533. 2. *Raii hiſt.* 1232.
Epipactis ovata. *Allion. pedem. n.* 1850. *Hall. helv. n.* 1291. *t.* 37. 1.
Perfoliata fylveſtris mas. *Bruuf.*
Satyrium 10 & bifolium. *Trag.*
Aliſma. *Cord.*
β. Ophrys triſolia. *Bauh. pin.* 87.
Bulb fibrous, ſtem two-leaved, leaves ovate, lip of the neƈtary bifid.]
6. Ophrys cordata. *Mountain Ophrys or leaſt Twayblade. Lin. ſpec.* 1340. *ſyſt.* 813. *Reich.* 4. 23. *fl. lapp. n.* 247. *ſuec. n.* 809. *act. upſ.* 1740. *p.* 29. *Hudſ. angl.* 388. *Wither. arr. ed.* 3. 35. *Lightf. ſcot.* 524. *Engl. bot.* 358. *Scop. carn. n.* 1133. *Gunn. norv.* 2. *t.* 3. *f.* 6. *Gagn. act. helv.* 2. *p.* 75. *t.* 6. *Guel. ſib.* 1. 25. *Villars dauph.* 2. 47.
O. minima. *Bauh. pin.* 87. *prodr.* 31.
Pſeudo-orchis minima bif. floribus purpuro-croceis. *Mor. hiſt. ſ.* 12. *t.* 11. *f.* 4.
Bifolium minimum. *Bauh. hiſt.* 3. 534. 2. *Raii hiſt.* 1233. *ſyn.* 385. *Petiv. brit. t.* 70. *f.* 1.
Epipactis cordata. *Allion. pedem. n.* 1851. *Hall. helv. n.* 1292. *t.* 22. *f.* 4.
Bulb fibrous, ſtem two-leaved, leaves cordate.

* *With round Bulbs.*

[7. Ophrys lilifolia. *Lily-leaved Ophrys. Lin. ſpec.* 1341. *ſyſt.* 813. *Reich.* 4. 23. *Gron. virg.* 185. 138. *Ehret in phileſ. tranſ.* 1764. *n.* 53. *p.* 81. *t.* 4.
Bulb roundiſh, ſcape naked, leaves lanceolate, lip of the neƈtary entire, uperſal petals linear.
8. Ophrys Loeſelii. *Dwarf Ophrys* or *Twayblade. Lin. ſpec.* 1341. *Reich.* 4. 24. *Wither. arr. ed.* 3. 35. *Engl. bot.* 47. *Relh. cant. ſuppl. alt. n.* 1074. *Fl. dan. t.* 877.
O. lilifolia Loeſelii. *Hudſ. angl.* 390.
O. diphyllos bulboſa. *Loeſ. pruſſ.* 180. *t.* 58.
Bulb roundiſh, ſcape naked three-cornered, lip of the neƈtary ovate.
9. Ophrys paludoſa. *Marſh Ophrys* or *Twayblade. Lin. ſpec.* 1341. *ſyſt.* 813. *Reich.* 4. 24. *fl. ſuec. n.* 813. *Hudſ. angl.* 389. *Lightf. ſcot.* 525. *Engl. bot.* 72. *Relh. cant. n.* 656. *Reſz. t.* 2. *f.* 2. *Pallich pal. n.* 856. *Act. pal.* 2. 460. *Pallas, it.* 3. 265. *Knipb. cent.* 9.
Malaxis paludoſa. *Withr. arr. ed.* 3. 39.
Orchis minima bulboſa. *Raii ſuppl.* 587.
Or. biſolia minor paluſtris. *Pluk. phyt. t.* 247. *f.* 2?
Bifolium paluſtre. *Park. theat.* 505. *Raii ſyn.* 385.
Bulb roundiſh, ſcape almoſt naked five-cornered, leaves rugged at the top, lip of the neƈtary entire.
10. Ophrys monophyllos. *One-leaved Ophrys. Lin. ſpec.* 1342. *ſyſt.* 813. *Reich.* 4. 24.
O. monoph. bulboſa. *Loeſ. pruſſ.* 180. *t.* 57.
Monorchis ophioglofſoides. *Mentz. pug. t.* 5. *f.* 1, 2.
Pſeudo-orchis monophyllos. *Cluſ. hiſt.* 1. 269.
Epipactis. *Hall. helv. n.* 1293. *t.* 36.
Bulb round, ſcape naked, leaf ovate, lip of the neƈtary entire.
11. Ophrys alata. *Lin. ſyſt.* 813. *ſuppl.* 404. *Thunb. prodr. cap.* 2.
Bulbs round, ſtem leafy, leaves lanceolate, lip trifid, the middle ſegment very ſhort.]
12. Ophrys muſcifera. *Fly Ophrys. Hudſ. angl.* 391. *Withcr. arr. ed.* 3. 37. *Relh. cant. n.* 659. *Engl. bot.* 64.
O. myodes. *Lin. ſyſt.* 813. *Jacqu. miſc.* 2. 373.
O. inſectifera. *Mill. dict. n.* 6.
O. inſ. myodes. *Lin. ſpec.* 1343. *Reich.* 4. 27. *Gunn. norv.* 2. *t.* 5. *f.* 1.
Orchis muſciflora. *Hall. helv. n.* 1265. *t.* 24.
Orc. muſcaria. *Scop. carn. n.* 1114.
Orc. myodes. *Ger. emac.* 213. 6. — minor. *Park. theat.* 1352.—& major 1351. 10 & 12.—galea & alis herbidis. *Bauh. hiſt.* 2. 767. *Raii hiſt.* 1219. *ſyn.* 379. *Petiv. brit. t.* 68. *f.* 10.
Ore. muſcæ corpus referens minor, galea & alis herbidis. *Bauh. pin.* 83. *Vaill. par.* 147. *t.* 31. *f.* 17, 18. *Knipb. cent.* 3. *n.* 68.

Orchis myodes prima, floribus muſcam exprimens. *Lob. ic.* 1. 181. 1.
Orch. Serapias tertius. *Dod. pempt.* 238. 3.
Teſticulus muſcarius 3. luteus. *Tabern.* 662.
β. Orchis muſcam referens major. *Bauh. pin.* 83. *Mor. hiſt. ſ.* 12. *t.* 14. *f.* 12.
γ. O. muſcam referens lutea. *Bauh. pin.* 83. *Mor. hiſt. ſ.* 12. *t.* 13. *f.* 14. & *t.* 14. *f.* 14.
δ. O. muſcam coeruleam majorem repræſentans. *Breyn. Mor. hiſt.* 3. 494. *f.* 12. *t.* 13. *f.* 11.
ε. O. myodes lutea luſitanica. *Breyn. cent.* 75. *Mor.* 495. *f.* 15.
ζ. O myodes fuſca luſitanica. *Breyn. cent.* 41.
Bulbs roundiſh, ſtem leafy, lip of the neƈtary convex, with three diviſions, the middle ſegment cloven.
13. Ophrys apifera. *Bee Ophrys. Hudſ. angl.* 391. *Withcr. arr. ed.* 3. 38. *Relh. cant. n.* 660. *Sibth. oxon. n.* 36. *Curt. lond.* 1. 66. *magaz.* 383. *Shaw. nat. miſc. Berg. phyt.* 1. 65.
O. adrachnites. *Mill. dict. n.* 7.
O. inſectifera 1. *Lin. ſpec.* 1343. *Reich.* 4. 27.
Orchis fucum referens major, foliolis ſuperioribus candidis & purpuraſcentibus. *Bauh. pin.* 83. *Fauk. par.* 146. *t.* 30. *f.* 9. *Mor. hiſt. ſ.* 12. *t.* 14. *f.* 8.
Or. fuciflora. *Hall. helv. n.* 1266. *t.* 24. *f.* 2.—galea & alis purpuraſcentibus. *Bauh. hiſt.* 2. 767. 1. *Raii hiſt.* 1220. *ſyn.* 379. *Petiv. brit. t.* 69. *f.* 2.
Or. ſerapias ſecundus major. *Dod. pempt.* 238. 1.
Or. ſexta & Satyrium alterum. *Trag.* 783.
Or. ſ. teſticulus vulpinus, 2 ſphegodes. *Ger.* 166. 13. *emac.* 212. 3.
Or. ſpheg. ſ. fucum referens. *Park. theat.* 1351. 5.
Or. ſpheg. *Lob. obſ.* 91. 2. *ic.* 1. 180. 1.
Or. ſ. Teſticulus minor violaceis floribus. *Cord.*
Teſticuli ſpecies 2. *Matth.* 880. 2.
Teſticulus figura & colore apem referens. *Cæſalp.*
Triorchis foemina. *Fuchſ.* 560.
Satyrium quartum. *Bruuf.*
Bulbs roundiſh, ſtem leafy, lip of the neƈtary three-lobed, the lobes bent in underneath, ſhorter than the petals.
14. Ophrys aranifera. *Spider Ophrys. Hudſ. angl.* 392. *Withcr. arr. ed.* 3. 39. *Engl. bot.* 65. *Relh. cant. n.* 661. *Sibth. oxon. n.* 37.
O. fucifera. *Curt. lond. n.* 68.
O. inſectifera 2. *Lin. ſpec.* 1343. *Reich.* 4. 27.
O. ſphegodes. *Mill dict. n.* 8.
Orchis ſ. Teſticulus ſphegodes hirſuto flore. *Bauh. hiſt.* 2. 767. *Raii hiſt.* 1221. *ſyn.* 380. *Petiv. brit. t.* 69. *f.* 3.
Or. fucum referens, colore rubiginoſo. *Bauh. pin.* 83. *Vaill. par.* 146. *t.* 31. *f.* 15, 16.
Or. ſphegodes altera. *Park. theat.* 1350. 4. fig.
Or. andrachnitis. *Lob. ic.* 1. 179. 2.
Teſticulus vulpinus major ſphegodes. *Ger. emac.* 212. 3.
Bulbs roundiſh, ſtem leafy, lip of the neƈtary roundiſh entire emarginate convex longer than the petals.
15. Ophrys Monorchis. *Yellow* or *Musk Ophrys. Lin. ſpec.* 1342. *ſyſt.* 814. *Reich.* 4. 25. *fl. ſuec. n.* 810. *Hudſ. angl.* 390. *Withcr. arr. ed.* 3. 36. *Engl. bot.* 71. *Relh. cant. n.* 657. *Pallich pal. n.* 857. *Fl. dan. t.* 102.
Herminium. *Lin. lapp. n.* 317. *ſuec. ed.* 1. 740. *act. upſ.* 1740. *p.* 29.
Orchis monorchis. *Crantz. auſtr.* 478. *Scop. carn. n.* 1116. *Hall. helv. n.* 1262. *t.* 22. 3. *Guel. ſib.* 1. 18. *t.* 4. *f.* 1.
Or. odorata moſchata ſ. monorchis. *Bauh. pin.* 84. *Raii hiſt.* 1217. *ſyn.* 378.
Or. puſilla odorata. *Park. theat.* 1354.
Or. parva autumnalis lutea. *Bauh. hiſt.* 2. 768. 3.
Or. triſolia flor. ſpicatis herbaceis. *Segu. ver.* 2. 13. *t.* 16.
Or. coleo unico ſ. Monorchis floſculis pallide viridibus. *Loeſ. pruſſ.* 184. *t.* 61.
Monorchis. *Mich. gen.* 30. *t.* 26. *Rupp. gen.* 421. *t.* 2.
Bulb globular, ſcape naked, lip of the neƈtary trifid croſs-ſhaped.
[16. Ophrys alpina. *Alpine Ophrys. Lin. ſpec.* 1342. *ſyſt.* 814. *Reich.* 4. 25. *mant.* 469. *fl. ſuec. n.* 817. *Fl. dan. t.* 452. *Jacqu. vind.* 295. *t.* 9. *Villars dauph.* 2. 48.

Orchis alpina. *Sweert. corn. n. 1117. Hall. helv. n. 1263. t. 22. f. 1. Allion. pedem. n. 1837.*
Or. graminea. *Cranz. austr. 480.*
Chamæorchis alpina folio gramineo. *Bauh. pin. 81. prodr. 29. 4. Raii hift. 1216.*—flore viridi. *Park. Bulbs ovate, scape naked, leaves awl-shaped, lip of the nectary undivided blunt notched on each side.*

17. Ophrys camtschatea. *Siberian Ophrys.*
Lin. spec. 1343. Reich. 4. 26.
Neottia nectarii labio bifido lineari. *Lin. amœn. 2. 361. t. 4. f. 12.*
Scape fistulous sheathed, raceme loose, lip of the nectary linear bifid.

18. Ophrys anthropophora. *Man Ophrys.*
Lin. spec. 1343. fil. 814. Reich. 4. 26. mant. 289. Huds. angl. 390. Wither. arr. ed. 3. 37. Engl. bot. 29. Curt. lond. n. 70. Relh. cant. n. 658. Fl. dan. t. 103. Villars dauph. 2. 49. Ger. prov. 131. 3.
Neottia bulbis subrotundis, nectarii labio quadrifido. *Act. upf. 1740. p. 32.*
Orchis. *Hall. helv. n. 1264. t. 23. Allion. pedem. n. 1835.*
Or. flore nidi luminis effigiem repræsentans, fœmina. *Bonh. pin. 82. Vaill. par. 147. t. 31. f. 19, 20. Mor. hist. f. 12. t. 12. f. 2. ord. 2.*
Or. anthropophora ovoides. *Col. ecphr. 1. 320. 1. Raii hist. 1217. syn. 379.*—fœmina. *Park. theat. 1348. Petiv. brit. t. 68. f. 8.*
Bulbs roundish, stem leafy, lip of the nectary linear three parted, the middle segment elongated bifid.

[19. Ophrys cruciger.
Lin. fil. 814. Jacq. collect.
Bulbs roundish, stem leafy, lip of the nectary undivided marked with a crooked cross.

20. Ophrys vomeria.
Lin. fil. 814. suppl. 403. Thunb. prodr. cap. 2.
Bulbs roundish, leaves sheathing the stem, lip cut out ovate.

21. Ophrys bracteata.
Lin. fil. 814. suppl. 403.
Bulbs roundish, spike mixed with longer bractes, lip three-lobed.

22. Ophrys strata.
Lin. fil. 814. Reich. 4. 28. mant. 121. Thunb. prodr. cap. 2.
Leaves linear-obtuse, lip cordate spatulate.

23. Ophrys cathedra.
Lin. spec. 1344. Reich. 4. 28. amœn. 6. afr. 94.
Orchidi affinis, flore luteo. *Bush. cent. 3. 12. t. 21.*
Bulbs fibrous, flowers three-petalled, helmet ventricose large, lip cruciform, stem leafy.

24. Ophrys cucumifera.
Lin. spec. 1344. Reich. 4. 28. amœn. 6. afr. 95.
Orchis bursa carnea, flore luteo viridi. *Bush. cent. 3. 8. t. 13.*
Bulbs undivided, flowers three-petalled, wings emarginate, lip trifid, the lateral segments bent round.

25. Ophrys cassida.
Lin. spec. 1344. Reich. 4. 28. amœn. 6. afr. 96. Thunb. prodr. cap. 2.
Stem three-leaved, lip bifid.

26. Ophrys bivalvata.
Lin. fil. 814. suppl. 403.
Flowers in bundles, lip lanceolate.

27. Ophrys clavis.
Lin. fil. 814. suppl. 404.
Lip of the nectary entire clawed.

28. Ophrys parens.
Lin. fil. 814. suppl. 404.
Leaves awl-shaped, lip of the nectary very short ear-pillared.

29. Ophrys nervosa.
Lin. fil. 814. Thunb. jap. 27.
Stem naked angular, leaves ovate nerved, lip of the nectary entire retuse.

30. Ophrys triphylla.
Thunb. prodr. cap. 2.
Stem three-leaved, lip triangular notched at the base.

31. Ophrys inversa.
Thunb. prodr. cap. 2.
Leaves cuneiform, lip bifid entire.

32. Ophrys bicolor.
Thunb. prodr. cap. 2.
Leaves linear-cuniform, lip cut out bifid.

33. Ophrys squamata.
Forsk. flor. arabiæ. n. 310.
Bulbs bundled, scape elongated lanceolate spiked, root-leaves imbricate oblong ovate keeled, lip of the nectary fringed bent down.

34. Ophrys monofolia.
Forsk. flor. arabiæ. n. 311.
Bulb ovate, scape round scorbed, leaf round fistular reflex, perforated in the middle to let the scape past.

DESCRIPTIONS, *&c.*

These plants are of the same natural genus with the Orchis, and all the elder botanical writers confounded them. Linnæus distinguished this natural order into genera from the nectarium, as he calls it; which in Orchis forms a horn or spur at the back of the flower, whereas the lip of it in this is a petal hanging down with a ridge or keel running along the back.

Some modern writers have very unadvisedly cancelled the whole class Gynandria, and removed this natural order into the class Diandria.]

1. The root is composed of many strong fibres, from which arise two oval veined leaves, three inches long, and two broad, joined at their base; between these springs up a naked stalk about eight inches high, terminated by a loose spike of herbaceous flowers, resembling gnats, composed of five petals, with a long bifid lip to the nectarium, a creft or standard above, and two wings on the side. Capsule angular, opening in six parts, and filled with small seeds like dust.

[Root affixed laterally to the stem, consisting of a thick bundle of fleshy fibres, more numerous and intricate than those of O. ovata. Stem from twelve to fifteen inches high, thickest at the base, firm and remaining long after the seeds are shed; without leaves, but cloathed with numerous embracing dry scales. Spike four or five inches long, cylindrical; flowers at the base rather scattered, upwards crowded. Bractes shorter than the germ, acutely lanceolate. Petals closely converging, oval; lip of the nectarium long, at first linear, but divided at the base into blunt divaricated lobes. Stamens inserted in two cavities in the upper lip of the nectarium; anthers yellow. Capsule on a triangular fruit-stalk, having a prominent rib at each angle, and one on each side, with intermediate furrows. The whole plant is brown, and closely connected in habit with Orobanche, Lathræa and Monotropa [x].

Native of several parts of Europe, as Sweden, Denmark, Britain, Germany, France, Austria, Switzerland, Italy, in woods and shady places. With us about Charlton, Gravesend, Maidstone, and Rochill in Kent; Selborne in Hampshire by Mr. White; Madingley-wood in Cambridgeshire; Aldborough in Suffolk by Ray; Heydon in Norfolk. Near Ingleton, and in Ossley park. Buckham wood in Cumberland. Near Kendal in Westmoreland. Not uncommon about Newton Cartmel; found there by Mr. Hall, who observes, that the woods in the part of Lancashire where he lives, are cut down every fifteen years; that for six or eight years after they are cut, this plant is not to be found, but as soon as the grasses are chiefly destroyed by the shade, it again makes its appearance, and in some places is pretty plentiful [y]. Mr. Blackstone observed it in White-Heath-wood by Harefield. It is also found in some woods in Scotland, but not common. It flowers in may and june. The names of Nidus avis, Bird's-nest, and Nid d'oiseau, are derived from the matting and twisting of the fibrous roots.

2. The root consists of thick white succulent obtuse fibres, branched like coral. Stem six or eight inches high, without any other leaves except sheathing stipulæ. Flowers in a thin spike, eight or ten in number, verging a little to one side of the stalk, and subtended each by an oval-lanceolate greenish bracte. Upper petals green, oval-lanceolate, converging in form of

[x] Woodw. Mss. [y] Withering.

pellucid puckered skin, giving them a silvery hue. Upper part of the stem naked, yellowish green, nearly round, smooth. Bractes linear-lanceolate, much longer than the germ, pale yellowish green. Flowers in a long thinly scattered spike; sometimes fifteen in number, but seldom more than four or five: the three outer petals linear, with reflexed margins, the upper one forming right angles with the others; the two inner thread-shaped, spreading, resembling the antennæ of an insect, deep reddish brown, fringed with short hairs, fixed to the upper lip of the nectarium, which is hooded, covering the stamens; lower lip three-lobed, side lobes linear, entire, middle somewhat ovate, bifid with reflexed margins, covered with a velvety down reddish brown, and with a blueish spot on the centre, which is naked. The whole extremely resembles a fly, to which this blue spot, as Dr. Withering observes, contributes much. The stamens are very short and loose, the anthers yellow[3].

According to Haller, the stem is eighteen inches high; the leaves scarcely an inch in breadth; the spike remarkably thin of flowers, seldom more than eight; the stipule (or bractæ) ovate-lanceolate, equal to the germ or longer; the germ sessile, long and slender; the staminous column without any beak; the anthers are evolved or come out of their case very readily.

Mr. Relhan remarks the slenderness of the stem, which is a character that strikes at first sight, adding that it is round, and smooth or even; bractes longer than the germs; flowers from four to eight, distant, which is another obvious character; lip of the nectary wide, hanging down, longer than the germ, dark purple, reflex at the sides, the segments rounded; the three outer petals spreading, green, the two inner filiform, dark purple.

Linnæus has not considered this as specifically distinct from the Bee Ophrys: but it is now generally agreed that they are different, as Haller, Jacquin, and our English botanists have decided them to be. Jacquin has given a full and exact description of the Fly Ophrys in his Miscellanea.

Native of Sweden, Norway, Switzerland, Austria, Carniola, France, Italy. I found it in flower at Vevay, on the banks of the lake of Geneva, may 24th 1779. In England it is not uncommon; as in Boston church-yard, and about Wrotham and Northfleet in Kent; Hatcfield in Middlesex; Croydon in Surrey; Hinton, Teversham, Fulbourn, Linton, the Devil's-ditch and Chippenham in Cambridgeshire; Bath-hills near Bungay, and Eartham-wood in Suffolk; Ray observed it in Essex, as well as the last two counties; St. Vincent's rocks near Bristol; Plumpton-woods near Ulverston; Rushton in Northamptonshire; Aslpy in Nottinghamshire: Barrowfield-wood, and Brigstear-moss in Westmoreland; generally in calcareous pastures. It flowers in may and june.

Some varieties of the Fly Ophrys are mentioned as growing in foreign countries: and Mr. Ray has a larger sort found by Mr. Dale in a pasture near Pestingford in Suffolk, and by Dr. Eales near Welwyn in Hertfordshire, at Greenhithe and by North Gray, by James Sherard, M. D. From the figure of John Bauhin, to which Ray refers, it will probably prove, says Dr. Withering, to be a different species.

13. Bee Ophrys has the stem about a foot high, leafy, round except between the fructifications, where it is compressed. Leaves alternate, lanceolate, sheathing, pubescent, nerved. Bractes longer than the germs, lanceolate. The three outer petals large, spreading, purple, with the keel and two nerves green; the two inner petals very small, hairy, reflex, green; lower lip of the nectary large, wide, but shorter than the petals, dusky purple mixed with yellow, three-lobed, the side lobes smaller, hairy, reflex, triangular, acuminate; the middle one very large, pubescent, three-lobed, bent down, the middle segment longer, acuminate; upper lip narrowed above with a point, longer than the lower lip, of a green colour. Filaments long: anthers very large. Germ longer than the petals, but shorter than the bractæ, large, deeply grooved.

[3] Woods. Mf.

The above description, which I made with great care from a living plant, is asserted by Haller to belong to the Ophrys muscifiora, and to contain nothing common to O. fuciflora. Let the skilful compare and judge.

According to Mr. Woodward, the stem is shorter than the foregoing, the leaves broader and shorter; the spike of fewer flowers; the bractes broader and shorter, but still longer than the germ; the three outer petals lanceolate, patent and even reflected, as long as the germ, purple with the keel and two nerves green, the tips green and folded; the two inner petals patent, linear, purplish on the inside, green without; upper lip of the nectarium lengthened into a deep-green proboscis, under which are the filaments and yellow anthers; lower lip of the nectarium large and broad, hairy, mottled brownish purple and yellow, divided into three lobes, the two upper near the top, short lanceolate, at first bent upwards, afterwards reflected, the middle one very large, three-lobed, the side ones short, angular, the middle one long, tapering to a point which is greenish yellow, and reflected.

Dr. Stokes describes the lower lip of the nectary as rusty brown, very much resembling a small humble-bee, inversely ovate, the side-lobes bent down, woolly, the edges bent in, the upper angles loose and upright, resembling the wings of the bee. Stamens yellow, inserted into the upper edge of the stigma, bursting, when the flower is expanded, from the membranaceous cases of the upper lip, and bending down on the surface of the stigma, continuing fixed to its edge. Anthers club-shaped, compound, resembling those of Orchis. Germ not wreathed (scrobed). It agrees much more nearly to Orchis in its structure, and confirms the propriety of Haller's generic characters.

According to Mr. Curtis, the stalk is from half a foot to a foot high; the leaves ovate-lanceolate, underneath silvery, with linear fibres, frequently imperfect and of a brown colour; bractes large, sheathing, green, and of equal length with the flowers, which are from three to six. Style long, upright, at the tip bending downwards, and again upwards. Filaments arising from the bottom of the style out of a nectariferous scale, hanging down, frequently adhering to the stigma, furnished at bottom with a small transparent gland or globule. Stigma covered with a viscid substance like honey, to which some small particles of the anthers frequently adhere. Capsule about an inch in length, brown. Seeds oblong, at each end membranous, transparent, reticulated, placed lengthwise to the inside of the keel of each valve.

Native of every part of Europe. In England this singularly beautiful plant is not uncommon on a calcareous soil near woods, and in meadows. Near London it is become so rare, as scarcely to be found with any certainty, owing to the rapacity of florists and dealers, who as Mr. Curtis observes very justly, root up all they find, without leaving a single specimen to chear the heart of the student in his botanic excursions. Mr. Aichorne has frequently gathered it near Charlton-church, and Chiffelhurst in Kent. It grows also on Trundle-down in the same county. Mr. Blackstone found it about Hatcfield. In Cambridgeshire it is abundant about Madingley-wood, Hinton, Teversham, Fulbourn, Burrough-green, Chippenham and Linton. In Bedfordshire at Bolnhurst. In Buckinghamshire at Brandenham. In Northamptonshire at Blatherwick and Asply. In Oxfordshire at Pently Hangings. About Eartham in Suffolk and Mulharton. On St. Vincent's rocks near Bristol. Carisbrook Castle in the isle of Wight. Great Comberton towards Woller's-hill, and Ledestone near Whitbourne in Worcestershire.

It flowers in june and july, and the seed is ripe at the end of august. The root appears to possess the same virtues with those of the Orchis whence Salep is made, but being much smaller is not worth cultivating on that account[4].

14. Stem six inches high, more or less according to its place of growth, round, smooth, covered below with leaves embracing it. Leaves next the root an

[4] Bibliotheca Botanica, p. 307. [5] Curtis.

inch

inch and half long, almoſt an inch broad, ovate-lanceolate, ſomewhat blunt, marked with impreſſed lines, ſmooth, ſpreading on the ground; thoſe of the ſtalk few, narrower and more pointed. Flowers from three to ſix, in a thin ſpike. Petals pale green, the three outer largeſt and the length of the lip, of theſe the two oppoſite ovate-lanceolate, obtuſe, bent ſomewhat inwardly, the uppermoſt narrowed, with the edges rolled back, the two innermoſt ſhorter, lanceolate, upright or bent a little back, generally ſomewhat truncated at the tip: the lip nearly orbicular, below concave, above convex, the ſides bent down, at firſt of a bright purple brown colour, ſoon changing to a yelloviſh hue, marked in the middle with a ſpot conſiderably reſembling the Hebrew letter ת, differing however in its form in different flowers, covered thickly with ſhort hairs, eſpecially at the ſides, where it for the moſt part projects, the ſpots excepted, which are ſmooth and gloſſy. Filaments whitiſh. Anthers club-ſhaped, yelloviſh; the cafes in which they are contained open through their whole length, their edges membranaceous, and near the top, ſo tranſparent, that the colour of the anthers is ſeen through them. Stigma concave, purpliſh, marked on each ſide with a greeniſh gland[1].

Mr. Woodward diſtinguiſhes it from O. apifera with which Linneus and foreign botaniſts in general have confounded it. The ſtem is not near ſo high, the leaves are ſhorter, but otherwiſe ſimilar, the bractes narrower, the flowers ſmaller, the three outer petals bluntly ovate-lanceolate, greeniſh, ſhorter than the lip; which is ſomewhat heart-ſhaped, but not lobed.

It is ſurpriſing that Linneus, who allows that theſe three plants are conſtant in their differences, ſhould not diſtinguiſh them, when the lip of the nectarium in one is four-lobed, in another five-lobed, and in the third only ſlightly emarginate; not to mention the comparative length of the petals and lip in the two laſt, which are moſt alike; a ſpecific character ſtrictly juſt and admiſſible.

It is a ſtrange aſſertion of Haller, that in an advanced ſtate the projection of the lip being bent back, and the lip then appearing heart-ſhaped, Ophrys apifera becomes the ſame with O. aranifera. It is ſufficient on this to obſerve, that O. aranifera is the earlieſt of the three, appearing in may; whereas the Fly appears in june, and the Bee uſually in july[2].—Our aranifera however is not the *arachnites* of foreign authors, or Orchis araneam referens of Caſp. Bauhin, which is not a native of Britain, but of Switzerland, Italy and other parts of the continent. Dr. Smith found it abundant in all the graſs-plats of the Villa Borgheſe near Rome, with a ſtem twelve or fourteen inches high; the lip of the nectary is more expanded, membranous and undulated in the margin. It is well figured in Beſler's Hortus Eyſtettenſis, and an accurate figure and deſcription of it is given by Haller. It flowered in Mr. Curtis's garden at Brompton, june 18. 1794.

Our plant is commonly known in this country by the name of Bee Orchis with green wings, the petals being altogether of an herbaceous colour, whereas in the *apifera* three of them are pale purple; but they differ not only in colour, but very materially in ſhape, as obſerved above: this flowers alſo in mild ſeaſons as early as march. The nectary, which at firſt is of a bright and very rich brown colour, ſoon changes to a faded yellow green: when the flowering is over, the petals incline forward, and cloſe over the nectary[3].

The flower is not ſo beautiful as that of the two preceding ſpecies: it is fancied by ſome to reſemble a bee, by others a ſpider; from the breadth of the lip, and its being marked with different ſhades of brown it derives its reſemblance to the latter[4]. Others have diſcovered a likeneſs to a ſmall bird in the flower[5].

Native of England, in chalky paſtures, as about Northfleet, Bocton church-yard and other places in Kent; Leatherhead in Surrey; near Wheatley, between Witney and Burford, Caverſham Warren, and Stansfield in Oxfordſhire; about Bratham near Tadcaſter; about Bury in Suffolk; found by Sir Thomas Gery Cullum; ſeveral places in Cambridgeſhire; as Shelford, Abington, Hilderſham, Bartlow. At Hilderſham I have frequently found it in very great abundance, but the exterminators are very diligent wherever they can find it.

15. Bulb ſingle, round or ſomewhat oblong, with a few thick fibres from the crown. Stem about ſix inches high, round and ſmooth. Root-leaves two or three, ſheathing the ſtem, lanceolate, acute, ſmooth, of a ſhining yelloviſh green, marked with parallel veins; on the ſtem one or two ſeſſile awl-ſhaped leaves. Spike an inch or an inch and half long, of numerous flowers. Bractes lanceolate, acuminate, at the lower part of the ſpike equal to or ſomewhat longer, on the upper part ſomewhat ſhorter than the germ; which is oval, ſeſſile, the upper part tapering to a ſort of fruit-ſtalk, whence hangs the flower obliquely nodding; the three outer petals ovate-lanceolate, ſomewhat converging; the two inner broad at the baſe, with a linear-lanceolate termination: lip of the nectarium deeply trifid, cruciform; ſegments lanceolate. The flowers are greeniſh yellow, with a faint muſky ſmell. Anthers ferruginous[6].

Native of many parts of Europe; Sweden, Denmark, Lapland, England, Germany, Switzerland, Auſtria, Pruſſia, Italy, &c. With us near Enfield in Middleſex; chalk-pits near Gogmagog hills in Cambridgeſhire; Marham near Swaffham, and near Snettiſham in Norfolk. It flowers in july.

16. The root conſiſts of two roundiſh bulbs, (and not of one rooting at bottom, as in *paludoſa*, *monophyllos*, and *Monorchis*), rooting at top. Root-leaves generally four, filiform, awl-ſhaped, an inch long. Stem naked, the length of the leaves. The ſpike conſiſts of four or five alternate flowers. Petals five, converging: beard ovate-oblong, entire, ſcarcely longer than the petals. Two ſheaths inveſt the baſe of the plant, and incloſe the leaves with the ſcape at the bottom[1].

Native of the mountains of Lapland, Denmark, Switzerland, Dauphiné, Piedmont, Carniola, Auſtria, &c.

17. Native of Siberia.

18. Stem about a foot high, firm, ſmooth, round at the baſe, ſomewhat angular upwards. Root-leaves four or five, ſheathing the ſtem at the baſe, lanceolate but varying in breadth, ſpreading: above theſe one or two more, cloſely embracing the ſtem. Flowers numerous, in a long looſe ſpike. Bractes membranaceous, lanceolate, awned, half as long as the germ. Petals converging; the three outer ovate-lanceolate, greeniſh with purple lines and margins; the two inner linear: lip of the nectarium long, dependent, yellow, divided into three lobes, the two outer half as long as the middle one, linear and ſlender; the middle lobe divided again half way into two acute ſomewhat divaricated ſegments[2].

It varies in ſize, and in the colour of its flowers, from yellow green to bright ferruginous. The root, and indeed the whole plant, emits a ſtrong odour[3]. The flowers vary in number from ten to fifty. Germs oblong, ſeſſile[4], round, green, twiſted. Petals cloſing ſo as to form a hood. A little below the ſtigma, which is deeply hollowed out, are two pellucid ſhining glands, very conſpicuous. The filaments are very ſhort[5]. The lip of the nectary is ſo divided as to bear a coarſe reſemblance to the human arms and legs, whence old authors named it the Man Orchis.

Native of the ſouthern parts of Europe, and England. With us principally in dry paſtures and old chalk-pits; in ſuch ſituations it is one of the moſt common of the tribe in Kent, as near Northfleet, Greenhithe, between Graveſend and Cliffe, Dartford, Bocton church-yard, and in the way to Branley, Trunhill, &c. In Surry about Croydon and Leatherhead. Near Linton in Cambridgeſhire. Kimbolton

[1] Curtis. [2] Woodw. Mſs. [3] Curtis. [4] Withering. [5] Curtis.

[1] Woodw. Mſs. [2] Linn. [3] Woodw. Mſs. [4] Curtis. [5] Relham. [6] Curtis.

in Huntingdonſhire. Dalington near Sudbury in Suffolk. Athwelthorpe near Norwich. It flowers in june.

19. Dr. Smith ſuſpects this to be a variety of O. apifera, perhaps inaccurately drawn [a].

20. Stem a foot high. Stem-leaves embracing, ovate, oblong, acuminate, nerved. Spike oblong, many-flowered, the flowers diſtant. Firſt petal between the following, lanceolate, erect: ſecond and third upper, outer, obovate, erect: fourth and fifth ovate, concave, reflex, much ſhorter than the former: lip triangular, ſagittate; the leſs above the ſtamens, before the firſt petal; the largeſt obcordate, ſubpedicelled.—Native of the Cape of Good Hope.

21. Stem a ſpan high. Root-leaves ovate, nerved: ſtem-leaves ovate-oblong, ſeveral. Spike many-flowered, cloſe, mixed with bractes longer than the flower, ovate, ſpreading: upper petal roundiſh, arched; lip ſhorter, three-lobed.—Native alſo of the Cape [b].

22. Stem ſimple, a hand high. Leaves ſcattered, half embracing, numerous, wider towards the baſe, towards the top long-awl-ſhaped or linear. Spike terminating. Flowers ſeſſile, remote; under each a briſtle-ſhaped bracte the length of the flower. Petals ovate or lanceolate, obtuſe. Arch of the ſtamens of the ſame length with the petals, terminated by two erect linear parallel horns. The whole plant in drying becomes black.—Native of the Cape [c].

23. Scape a foot high. Leaves three, alternate, embracing, lanceolate; the root-leaves ſhorter. Raceme four or five-flowered. Bracte the length of the corolla: helmet one-leafed; the two lateral petals lanceolate, ſpreading: lip ſmall, lanceolate, bent in under the helmet with the lateral ſegments ſpreading very much, widening at the baſe with a lobe on each ſide.

24. Bulb roundiſh. Leaves lanceolate. Spike five-flowered or thereabouts, with ventricoſe bractes. Helmet very much arched, hemiſpherical, mucronate at top; the two wings ſpreading, two-lobed, the upper lobe larger: lip of the nectary erect, trifid, the middle ſegment acute, the lateral ones membranaceous, lineaf.

25. Scape a foot high, even, leafy. Leaves three or four, alternate, lanceolate. Flowers in a raceme, three or four, yellow.—Theſe are all natives of the Cape of Good Hope [d].

26. Stem a ſpan or a foot high. Leaves alternate, many (about ſixteen) over the whole ſtem, lanceolate-ſubulate, ſheathing with a wider baſe. Spike corymbed, without a diſtinct peduncle. Germ ſtreaked. The three upper petals nearly equal, ovate, uppermoſt arched, ſide ones ſpreading, the two lower ſide ones inſerted into the piſtil, thickiſh, oblong, blunt, ſmaller than the former petals: lip thickiſh, reſembling the lower ſide-petals, lanceolate.

27. Stem a ſpan high and more. Stem-leaves three, the firſt obſolete, the ſecond oval-lanceolate, the third ſpathe-form. Spike few-flowered, with ovate, acute bractes. The firſt petal lanceolate, concave, the ſecond and third very wide, roundiſh, the length of the firſt, the fourth and fifth ſemicordate, acuminate, of the ſame length: lip from the piſtil itſelf, ſmaller, ovate-lanceolate, waved.

28. Stem hardly a hand high, longitudinally imbricated with leaves. Root-leaves ſhort, linear. Stem-leaves ſheathing, awl-ſhaped, acuminate. Flowers two to four, rather large. Firſt petal cordate, acute, ſecond and third minute, oblong, under the firſt; fourth and fifth ſemicordate, ſublanceolate, the length of the firſt, ſpreading: lip ſubcapillary, linear, very ſhort.

All theſe are alſo natives of the Cape of Good Hope [e].

29. Leaves ſubradical, alternate, with a grooved, many-angled ſheath, acute, waved, concave, grooved, ſtreaked, entire, ſmooth, erect, a hand in length, two inches wide, three, four or five in number. Scape ſurrounded with leaves at the baſe, with acute angles, ſmooth, erect, longer than the leaves. Flowers at the top of the ſcape elongated, in a ſpike, alternate, drooping, purple. Spike ſharply angular, erect, ſmooth, about a ſpan in length. Perianth three-leaved, the two upper ſegments lateral, and one lower horizontal; they are equal, linear, and bent back on the edges and at the tip. Corolla three-petalled: uppermoſt petal ovate, jointed and reflex in the middle, having two calluſes at the baſe, grooved, emarginate, forming a hood or helmet, twice as wide as the reſt; the two lower lateral, bent down at the baſe, then bent back, linear, like the leaflets of the calyx, and of the ſame length: two calluſes at the baſe of the uppermoſt petal between the petal and the ſtyle. Anthers two, ſeſſile, under the top of the ſtigma. Style ſemicylindrical, curved towards the upper petal, a line in length, white. Stigma blunt. Capſule cylindric-triſorm, twiſted, erect, drooping at top, ſmooth, purple, half an inch long. Under each flower a very ſhort, ovate, purple bracte.

Native of Japan near Oſacca and Jedo; flowering in may and june. Its name in Japoneſe is Gin Ran [f].

30, 31, 32. Natives of the Cape of Good Hope [g].

33. Native of New Caledonia.

34. Native of New Zealand [h].

PROPAGATION AND CULTURE.

1. This plant refuſes culture, but may be tranſplanted from the places where it grows naturally into a ſhady part of the garden, where, if the roots are not diſturbed, it will continue many years, and flower, but not increaſe. The beſt time to remove the roots is in july or auguſt, when the leaves are decaying; for it will be difficult to find the roots after the leaves are gone.

[2. This may be treated in the ſame manner.

3. Is ſeldom cultivated in gardens, but not being nice in its ſoil or ſituation, grows more readily in a garden than moiſt of the Orchis tribe [i]. Johnſon however ſays he could not get them to grow in a garden, and that none of the Satyrions love to be pent up in ſuch ſtrait bounds [k].

5. Common Twayblade growing naturally in woods and thickets, will proſper very well in any ſhady part of a garden, eſpecially in a moiſt ſoil.

7, 8, 9. Require to be planted in bog earth, in a moiſt ſhady border, or in pots with bog moſs and earth, ſet in pans of water.]

12, 13, 14, 15, 18. All theſe may be preſerved in gardens, though not propagated there. The beſt time to remove the roots from the places where they naturally grow, is juſt before the ſtalks fall, for at that time they may be eaſily diſcovered, and are beginning to reſt, ſo that the bulb will be fully formed for flowering the following year, and will not ſhrink: but when they are removed at the time when they are in action, the bulb deſigned for flowering the following year, not being fully ripened, will ſhrink, and frequently periſh.

When they are removed into a garden, the ſoil ſhould be adapted to the ſorts. Such as grow in moiſt paſtures ſhould be planted in ſhady moiſt borders; thoſe which are inhabitants of woods may be planted under trees; but ſuch as grow upon chalk-hills ſhould have a bed of chalk prepared for them in an open ſituation; and when they are fixed in their ſeveral places, they ſhould not be diſturbed: for provided they are kept clean from weeds, the leſs the ground is diſturbed, the better the plants will thrive, and the longer they will continue.

[Theſe plants were cultivated with great ſucceſs by the late Peter Collinſon, Eſq. whoſe memory is revered by every botaniſt, in his garden at Mill-hill. His method was to place them in a ſoil and ſituation as natural to them as poſſible, and to ſuffer the herbage to grow round them [l]. They are commonly taken up with a large ball of earth and the graſs, &c. in which they grow, when they are coming in flower, or at leaſt when they are puſhing up their flowering-ſtem in ſpring, ſo that the ſpecies may be diſtinguiſhed:

[a] Tour. 2. 295. [b] Linn. ſuppl. [c] Linn. mant. [d] Linn. amoen. [e] Linn. ſpec. [f] Thunberg. [g] Thunb. cap. [h] Forſter. [i] Curtis. [k] Ger. emac. 219 [l] Curtis, lond.

in this ſtate they ſeldom continue in a garden more than one year, or at moſt two years, ſo that by this means vaſt quantities of theſe beautiful flowers are deſtroyed annually.

Mr. Curtis remarks, that he has not yet heard of theſe plants being propagated by ſeed; and that it is to be wiſhed ſome intelligent gardener would exert himſelf in making ſome experiments to raiſe them in this way.—They produce abundance of ſeed, and there can be no doubt of their increaſing by ſeed in their natural ſtate of growth.

14. With a little attention and management this plant will grow and flower more freely than many of the tribe. Mr. Curtis has found the following method ſucceſsful: take up the roots carefully when in flower, bare them no more than is neceſſary to remove the roots of other plants, fill a large-ſized garden-pot with three parts choice loam moderately ſtiff, and one part chalk mixed well together, and paſſed through a ſieve ſomewhat finer than a common cinder-ſieve; in this mixture place your roots at about the depth of two inches, and three inches apart, water them occaſionally during ſummer, if the weather prove dry; at the approach of winter place the pot in a frame under a glaſs, to keep it from wet and froſt, which combined deſtroy the beauty of the foliage, if not the plant itſelf; in the autumn, before any of the others make their appearance, this ſpecies emerges*.

OPOBALSAMUM. See *Amyris*.

OPOPANAX. See *Paſtinaca*.

OPSANTHA. See *Goutiana Amorella*.

OPULUS (quod viti ſert opem). See *Viburnum*.

OPUNTIA. See *Caltus*.

ORACHE. See *Atriplex*.]

ORANGE. See *Citrus*.

ORCHARD. In planting an Orchard, great attention ſhould be paid to the nature of the ſoil; and ſuch ſorts of fruits only ſhould be choſen, as are beſt adapted to the ground deſigned for planting, otherwiſe there can be little hopes of their ſucceeding; and it is for want of rightly obſerving this method, that we ſee in many countries Orchards planted, which never arrive to any tolerable degree of perfection, the trees ſtarving; and their bodies either covered with Moſs, or the bark cracked and divided, both which are evident ſigns of the weakneſs of the trees; whereas, if inſtead of Apples the Orchard had been planted with Pears, Cherries, or any other ſort of fruit better adapted to the ſoil, the trees might have grown very well, and produced great quantities of fruit.

As to the poſition of the Orchard, (if you are at full liberty to chuſe) a riſing ground, open to the ſouth-eaſt, is to be preferred; but I would by no means adviſe planting upon the ſide of a hill, where the declivity is very great; for in ſuch places the great rains commonly waſh down the better part of the ground, whereby the trees would be deprived of proper nouriſhment; but where the riſe is gentle, it is of great advantage to the trees, by admitting the ſun and air between them, better than it can upon an entire level; which is an exceeding benefit to the fruit, by diſſipating fogs and drying up the damps, which, when detained amongſt the trees, mix with the air and render it rancid: if it be defended from the weſt, north, and eaſt winds, it will alſo render the ſituation ſtill more advantageous, for it is chiefly from thoſe quarters that fruit-trees receive the greateſt injury; therefore, if the place be not naturally defended from theſe by riſing hills, which is always to be preferred, then you ſhould plant large growing timber-trees at ſome diſtance from the Orchard, to anſwer this purpoſe.

You ſhould alſo have a great regard to the diſtance of planting the trees, which is what few people have rightly conſidered; for if you plant them too cloſe, they will be liable to blights; the air being hereby pent in amongſt them, will alſo cauſe the fruit to be ill taſted, having a great quantity of damp vapours from the perſpiration of the trees, and the exhalations from the earth mixed with it, which will be imbibed by the fruit, and render their juices crude and unwholeſome.

Wherefore I cannot but recommend the method which has been lately practiſed by ſome particular gentlemen with very good ſucceſs, and that is, to plant the trees fourſcore feet aſunder, but not in regular rows. The ground between the trees they plough and ſow with Wheat and other crops, in the ſame manner as if it were clear from trees; and they obſerve their crops to be full as good as thoſe quite expoſed, except juſt under each tree, until they are grown large, and afford a great ſhade; and by thus ploughing and tilling the ground, the trees are rendered more vigorous and healthy, ſcarcely ever having any Moſs, or other marks of poverty, and will abide much longer and produce better fruit.

If the ground in which you intend to plant an Orchard has been paſture for ſome years, then you ſhould plough in the green ſward the ſpring before you plant the trees; and if you will permit it to lie a ſummer fallow, it will greatly mend it, provided you ſtir it two or three times, to rot the ſward of Graſs, and prevent weeds growing thereon.

At Michaelmas you ſhould plough it pretty deep, in order to make it looſe for the roots of the trees, which ſhould be planted thereon in October, provided the ſoil is dry; but if it be moiſt, the beginning of march will be a better ſeaſon. The diſtance, if deſigned for a cloſe Orchard, muſt not be leſs than forty feet, but the trees planted twice that diſtance will ſucceed better.

When you have finiſhed planting the trees, you ſhould provide ſome ſtakes to ſupport them, otherwiſe the wind will blow them out of the ground; which will do them much injury, eſpecially after they have been planted ſome time; for the ground in the autumn being warm, and for the moſt part moiſt, the trees will very ſoon puſh out a great number of young fibres; which, if broken off by their being diſplaced, will greatly retard the growth of the trees.

In the ſpring following, if the ſeaſon ſhould prove dry, you ſhould cut a quantity of green ſward, which muſt be laid upon the ſurface of the ground about their roots, turning the graſs downward, which will prevent the ſun and wind from drying the ground, whereby a great expenſe of watering will be ſaved; and after the firſt year they will be out of danger, provided they have taken well.

Whenever you plough the ground betwixt theſe trees, you muſt be careful not to go too deep amongſt their roots, leſt you ſhould cut them off, which would greatly damage the trees; but if you do it cautiouſly, the ſtirring the ſurface of the ground will be of great benefit to them; though you ſhould obſerve, never to ſow too near the trees, nor ſuffer any great rooting weeds to grow about them, which would exhauſt the goodneſs of the ſoil, and ſtarve them.

If after the turf which was laid round the trees be rotted, you dig it in gently about the roots, it will greatly encourage them.

There are ſome perſons who plant many ſorts of fruit together in the ſame Orchard, mixing the trees alternately; but this is a method which ſhould always be avoided; for hereby there will be a great difference in the growth of the trees, which will not only render them unſightly, but alſo the fruit upon the lower trees ill taſted, by the tall ones overſhadowing them; ſo that if you are determined to plant ſeveral ſorts of fruit on the ſame ſpot, you ſhould obſerve to place the largeſt growing trees backward, and ſo proceed to thoſe of leſs growth, continuing the ſame method quite through the whole plantation; whereby it will appear at a diſtance in a regular ſlope, and the ſun and air will more equally paſs throughout the whole Orchard, that every tree may have an equal benefit therefrom; but this can only be practiſed upon good ground, in which moſt ſorts of fruit-trees will thrive.

The ſoil of your Orchard ſhould alſo be mended once in two or three years with dung, or other manure, which will alſo be abſolutely neceſſary for the crops ſown between; ſo that where perſons are not inclinable to help their Orchards, where the expenſe of manure is pretty great, yet, as there is a crop expected from

* Curtis, Bond. n. 68.

from the ground beſides the fruit, they will the more readily be at the charge upon that account.

In making choice of trees for an Orchard, you ſhould always obſerve to procure them from a ſoil nearly a-kin to that where they are to be planted, or rather poorer; for if you have them from a very rich ſoil, and that wherein you plant them is but indifferent, they will not thrive well, eſpecially for four or five years after planting; ſo that it is a very wrong practice to make the nurſery where young trees are raiſed very rich, when the trees are deſigned for a middling or poor ſoil. The trees ſhould be alſo young and thriving, for whatever ſome perſons may adviſe to the contrary, yet it has always been obſerved, that though large trees may grow and produce fruit after being removed, they never make ſo good trees, nor are ſo long lived, as thoſe which are planted while young.

Theſe trees, after they are planted out, will require no other pruning, but only to cut out dead branches, or ſuch as croſs each other, which render their heads confuſed and unſightly: the pruning them too often, or ſhortening their branches, is very injurious; eſpecially to Cherries and ſtone-fruit, which will gum prodigiouſly, and decay in ſuch places where they are cut; and the Apples and Pears which are not of ſo nice a nature, will produce a greater quantity of lateral branches, which will fill the heads of the trees with weak ſhoots, whenever their branches are thus ſhortened; and many times the fruit is hereby cut off, which, on many ſorts of fruit-trees, is firſt produced at the extremity of their ſhoots.

It may, perhaps, ſeem ſtrange to ſome perſons, that I ſhould recommend the allowing ſo much diſtance to the trees in an Orchard, becauſe a ſmall piece of ground will admit of very few trees when planted in this method; but if they will pleaſe to obſerve, when the trees are grown up, they will produce a great deal more fruit, than twice the number when planted cloſe, and will be vaſtly better taſted; the trees when placed at a large diſtance, being never ſo much in danger of blighting, as in cloſe plantations, as has been obſerved in Herefordſhire, the great county for Orchards, where they find, that when Orchards are ſo planted or ſituated, that the air is pent up amongſt the trees, the vapours which ariſe from the damp of the ground, and the perſpiration of the trees, collect the heat of the ſun, and reflect it in ſtreams ſo as to cauſe what they call a fire-blaſt, which is the moſt hurtful to their fruits; and this is moſt frequent where the Orchards are open to the ſouth ſun. But as Orchards ſhould never be planted, unleſs where large quantities of fruit are deſired, ſo it will be the ſame thing to allow twice or three times the quantity of ground; ſince there may be a crop of grain of any ſort upon the ſame place (as was before ſaid,) ſo that there is no loſs of ground; and for a family only it is hardly worth while to plant an Orchard, ſince a kitchen-garden well planted with eſpaliers, will afford more fruit than can be eaten while good, eſpecially if the kitchen-garden be proportioned to the largeneſs of the family; and if cyder be required, there may be a large avenue of Apple-trees extended croſs a neighbouring field, which will render it pleaſant, and produce a great quantity of fruit; or there may be ſome ſingle rows of trees planted to ſurround fields, &c. which will fully anſwer the ſame purpoſe, and be leſs liable to the fire-blaſts before mentioned.

[Orchards in general are ſmall incloſures adjoining to a houſe, planted without much regard to ſoil or aſpect, merely for the convenience of ſituation in protecting the fruit. But in the cyder-counties, and particularly in Herefordſhire, they are diſperſed over all parts of the country, in various degrees of elevation, and in aſpects that look to every point of the compaſs: the ſouth-eaſt however, with a ſcreen to the north, ſeems to be the favourite aſpect. This has reaſon on its ſide; where however fruit-plantations are conſiderable, it may be prudent to have them in different aſpects; and Mr. Marſhall obſerves that in the year 1783 Orchard-fruit was cut off in every aſpect except the north-weſt. This probably was owing to the bloſſoms being kept back till froſt and blight were paſt, but there can be little doubt that on ground gently inclining to the ſouth or ſouth-eaſt, and well defended to the north and eaſt, there will be in general a greater probability of a crop, and the fruit will be better flavoured. The richeſt ſoil is commonly in vallies, and they are the moſt ſheltered from ſtorms; but they are alſo more ſubject to ſpring froſts, inſects and blights.

The beſt Orchards of Apples are on a ſtrong clayey ſoil, which is congenial to moſt varieties of this fruit; ſome of them however affect a light ſandy loam, as the Stire, Hagloe Crab, and Golden Pippin; and it is a fact well aſcertained, that cuttings from the ſame tree, and grafted upon ſimilar ſtocks, will produce Cyder of a different quality, when planted in different ſoils. It ſeems to be admitted that the liquor produced from trees in clay is of a ſtronger body, and will keep better than that which is made from trees on a ſandy ſoil.

Pears are leſs difficult in their ſoil than Apples, and are not ſo liable to be injured by froſt and blight. They are generally ſuppoſed to flouriſh moſt in a calcareous ſoil; the Squaſh however draws the fineſt Perry from deep ſtrong land.

Stocks for grafting upon are raiſed by ſowing either in november or february, the muſt or reſidue of Apples or Crabs after the cyder or vinegar has been ſqueezed out. It is ſown on a bed of highly cultivated mould, in a garden, and is kept clean by hand. If new varieties or the improvement of old ones be the object, the ſeed-bed ought to be made as rich as poſſible; but if the preſervation of varieties be all that is wanted, a common loamy ſoil is ſufficient.

This method of ſowing the muſt is a bad one, becauſe the largeſt and beſt kernels are bruiſed in the preſs, and thus the ſtocks are moſtly raiſed from the ſmaller ones. It would ſurely be better to pick a few of the beſt Apples from the tree, or rather to let them remain till they are ſo ripe as to drop off themſelves, and to take out the moſt ſound and healthy kernels.

Indeed ſtocks raiſed from apple-kernels are much inferior to ſuch as are raiſed from the Crab. The tree will bear fruit three or four years ſooner, but the Crab ſtock will endure twenty or thirty years longer, and is not ſo liable to moſs and canker.

At the end of two years the ſeedlings are planted out in the nurſery in rows, three feet diſtant, and from fifteen to eighteen inches, or even two feet aſunder in the rows; care being had not to cramp the roots, but to bed them evenly in the mould. The plants ſhould be ſorted, according to their ſtrength, the tap-roots taken off, and the longer ſide rootlets ſhortened. Whilſt they remain in the nurſery, which they generally do till they are finally planted out in the Orchard, they are trimmed twice a year. It is a good method to retranſplant them two years before they are to be transferred to the Orchard, into freſh unmanured ground, double dug, and ſet in a quincunx order, four feet apart every way. For raiſing or improving varieties the ſoil ſhould be deep and good; and the plants ſhould be moved every ſecond, third or fourth year. But all this trouble is ſeldom or ever taken.

While the plants are ſmall, the intervals may be cropped with ſuch kitchen-garden produce as will not overſhadow them or exhauſt the ground.

In trimming or pruning, if there be two leaders, the weaker ſhould be taken off: if the leader be irrecoverably loſt, cut the plant down to within a hand's breadth of the ſoil, and train a freſh ſtem. Take the undermoſt boughs off by degrees, always preſerving ſufficient heads to draw up the ſap: not trimming them up to naked twigs, as is the common practice, thereby drawing them up tall and feeble.

The length of ſtem to which ſtocks are uſually trained is ſix feet, or ſometimes near ſeven; if they were ſtill higher they would be more out of the reach of ſtock, and be much leſs injurious to whatever grows under it. The uſual ſize at which ſtocks of the common height are planted out, is four to ſix inches girt at three feet high; a ſize which they will reach, with proper management, in ſeven or eight years.

In planting the Orchard, the proper diſtance ought to be proportionable to the natural growth or ſpread of the trees. In old Orchards the trees are only eight or even ſix yards aſunder, the more prevailing diſtance now ſeems to be ten yards, twelve yards or half a chain might perhaps be ſtill better. In the graſs grounds of Glocesterſhire, and the arable fields of Herefordſhire, twenty yards is a common diſtance, ſome have intervals of twenty-five yards: a chain's length, or twenty-two yards, might be taken as a good medium diſtance. In this caſe, each acre would have ten, in that forty trees.

In grounds, the trees ſhould be in lines, for the convenience of ploughing. In cloſe Orchards they ſhould be ſet in the quincunx manner.

The time of planting is October and November, or February, March and April. Where the ſoil is dry and light, autumn is preferable; but in a cold wet ſituation, and tenacious ſoil, the ſpring months are beſt.

The leader ſhould now be ſhortened, and the ſmaller ſide-boughs taken off; leaving a proper choice of the larger ſide-boughs entire, and untouched, to draw up the ſap, and to furniſh wood proper for grafting.

The common method of planting is to dig a hole wide enough to receive the roots, which being placed within it, the mould is returned upon them in the order in which it came out, carefully replacing the ſods on the ſurface, that no graſsing ground may be loſt.

A better method is this: the ground being ſet out with ſtakes driven in the centres of the intended holes, deſcribe a circle five or ſix feet in diameter round each ſtake. If the ground be in graſs, remove the ſward in ſhallow ſpits, placing it on one ſide of the hole. Place the beſt of the looſe mould by itſelf on another ſide, and the dead earth in a third heap. Where the ſubſoil is cold and retentive, the holes ſhould not be made much deeper than the cultivated ſoil. In a dry light ſoil, the holes ſhould be made deeper, both to obtain a degree of coolneſs and moiſture, and to eſtabliſh the plants firmly in the ground. In ſoils of a middle quality, the hole ſhould be of ſuch a depth, that when the ſods are thrown to the bottom of it, the plant will ſtand at the ſame depth in the Orchard as it did in the nurſery. The holes ought to be made previous to the day of planting. If the ground and weather be dry, the holes ſhould have two or three pailfuls of water thrown into each the evening before.

In planting, the ſods ſhould be thrown to the bottom of the hole, chopt with the ſpade, and covered with ſome of the fineſt of the mould; if, with this, the bottom be not raiſed high enough for the plant, return ſome of the worſt mould before the ſods are put in. Upon the fine mould ſpread the loweſt tier of roots, drawing them out horizontally, with all their fibres, preſſing them evenly into the ſoil, and covering them, by hand, with ſome of the fineſt of the mould: one perſon ſteadying the plant, another adjuſting and bedding the roots, and a third ſupplying the mould; which being raiſed high enough to receive another tier of roots, they are to be ſpread and bedded like the former; thus proceeding till the roots are all bedded freely, yet firmly, among the beſt of the ſoil. When they are covered ſome depth, preſs the earth in well with the foot, and raiſe the remainder into a hillock round the ſtem, to afford coolneſs, moiſture and ſtability to the plant. It is a common fault to plant fruit-trees too deep in the ground. Provided they withſtand the violence of the wind, they can ſcarcely be planted too near the ſurface.

Young trees are frequently planted in hop-grounds, and therefore want no proteCtion; the land not being converted either into arable or paſture, till the trees are out of the reach of cattle. But when they are planted in paſture land or open fields, tall thorns faſtened by withes are commonly placed round them; this however is a fleeting guard, and the thorns are apt to rinſe the ſtem of the tree. The moſt effectual, but the moſt expenſive guard, is compoſed of four poſts put down in a ſquare, with rails mortiſed into them; to be effectual, the poſts ſhould be put at ſuch a diſtance and height, and the rails ſo cloſe, that cattle cannot reach the tree; the poſts alſo ſhould be ſet ſlanting outwards, that the area of the fence be wideſt at top: this fence occupies much land. Others ſet only three poſts, in a triangle, connected by rails as before. In both caſes care ſhould be taken that the lower rails are near enough to prevent ſheep from creeping through, for they, eſpecially when ſnow is on the ground, will bark the young trees.

The plantation will require copious watering the firſt ſummer, if the ſeaſon ſhould prove dry. The ſurface over the roots ſhould be kept free from graſs and weeds, and in a looſe pulverized ſtate, to induce the roots to ſpread horizontally on every ſide.

In Herefordſhire, the ſoil of Orchards is generally kept under tillage; in Glocesterſhire, in graſs. Either practice has its diſadvantages. Fruit trees, when fully grown, eſpecially if they are of a ſpreading growth, and are ſuffered to form drooping branches, are very injurious to arable crops, at leaſt in our moiſt climate: their roots, their drip, and their ſhadows are deſtructive, not to corn only, but to clover and turneps: they alſo impede a free circulation of air, and are in the way of plough-teams. Tillage however is favourable to the growth of young trees. Whereas in graſs grounds their progreſs is comparatively ſlow, for want of earth being ſtirred about their roots, and by being injured by grazing ſtock. Hence we may conclude, that where circumſtances will allow, it is beſt to plant fruit-trees upon a newly broken up ſward, to keep the ſoil under a ſtate of arable management, until the trees be well grown; then to lay it down to graſs, and let it ſo remain until the trees be removed and their roots decayed; when it will again require a courſe of arable management.

After Orchard trees are planted and fenced they have ſeldom any more care beſtowed upon them. Boughs are ſuffered to hang dangling to the ground, their heads are ſo loaded with wood as to be impervious to ſun and air, and they are left to be exhauſted by moſs and miſletoe.

By a redundancy of wood the roots are exhauſted unprofitably, the bearing wood is robbed of part of its ſuſtenance, and the natural life of the tree unneceſſarily ſhortened; whilſt the ſuperfluous wood endangers the tree, by giving the winds an additional power over it, and is injurious to the bearing wood, by retaining the damps, and preventing a due circulation of air.

The outer ſurface only is able to mature fruit properly; every inner and underling branch ought therefore to be removed. It is common to ſee fruit-trees with two or three tiers of boughs paſſing hand upon one another, with their twigs ſo intimately interwoven, that a ſmall bird can ſcarcely creep in among them. Trees thus neglected, acquire, from want of due ventilation, a ſtunted habit, and the fruit becomes of a crude inferior quality.

Miſſletoe is a great enemy to Apple Orchards, and is frequently permitted to be very injurious to them. The ordinary method of clearing trees from it, is to pull it out with hooks, in froſty weather, when being brittle, it readily breaks off from the branches. Sheep are as fond of it as they are of Ivy. A labourer could clean fifty or ſixty trees in one day, and yet the Herefordſhire Orchards are generally ſuffered to be exhauſted by this paraſite.

They are alſo very often almoſt entirely ſubdued by Moſs, which kills many trees, and injures others ſo much, that they are only an encumbrance to the ground and a diſgrace to the country. This evil may eaſily be checked, and to a great meaſure avoided. In Kent, there are men who make it their buſineſs to clean Orchard trees from Moſs, at a certain price by the tree or by the whole. Draining the land, if too retentive of moiſture, will ſometimes prevent or cure Moſs; or digging round the trees in winter, and bringing forth mould, or the ſcouring of ponds and roads, or the rubbiſh of old walls, well prepared and pulverized, and laid round the trees. Whatever contributes to the health of the tree, will cure or in ſome degree mitigate theſe and other diſeaſes.

When fruit-trees are hide-bound, they are ſcored,

by cutting the bark with the point of a knife, from the top to the bottom of the ſtem.

Spring Froſts are an enemy againſt which it is very difficult to guard Orchard trees. Dry Froſts are obſerved to have no other effects than keeping the bloſſoms back. But Wet Froſts, after rain or a foggy air, and before the trees have had time to dry, are very injurious, even to the buds. This cannot be avoided; much however may depend upon the ſtrength of the bloſſoms; and the aſſiſtance that art can give in this caſe is, to keep the trees in a healthy, vigorous ſtate, to enable them to throw out ſtrong buds and bloſſoms; and by keeping them thin of wood, to give them an opportunity of drying quickly, before the froſts ſet in.

Blights are very frequently fatal to the vernal bloſſoms, and the conſequent crop of fruit. Were it not for this malady, which commonly invades Orchards in May, many perſons think that there would be a crop of fruit every year as regularly as there is a crop of corn. Perhaps if trees in the full vigour of their life were to be kept in perfect order, and not ſuffered to overbear themſelves, this conſtant fertility might be looked for, if they were not attacked by natural evils; and perhaps theſe natural evils might be in ſome degree mitigated. But when trees are badly planted on an improper ſoil, are ill grafted on an infirm ſtock, have little care beſtowed on them, to protect them from cattle, and to keep them clean from Moſs and Miſſetoe, are ſuffered to run to unprofitable wood, and when they have a hit, as it is called, or bear a large crop of fruit, it is beaten down with poles or ſticks, by which the buds that are forming for the ſucceeding year are moſtly bruiſed or beaten off; is it any wonder, that with all this ill management, neglect and bad uſage, that the crop of fruit ſhould often fail, or that ſpring froſts and blights ſhould have their full effect upon trees ſo weakened and injured? it ſeems rather ſurpriſing, that inſtead of bearing once in two or three years, they ſhould ever bear at all.

The term Blight is vague, and no definite idea ſeems affixed to the term. Whether inſects be the cauſe or the effect of it, does not ſeem to be yet ſettled. It is aſſerted however, that if a mat or a piece of white paper be thrown over a tree at night, and examined in the morning, if there has been a blight, there will be little black ſpots, like the point of a pin. They ſeem lifeleſs, but if the ſun ſhine, by twelve o'clock they will be in motion. By next morning they will be gone from the mat, and then, and not till then, they go into the leaves of the trees, where they form neſts, and do the miſchief. In two or three days after the blight has infected an Orchard, the leaves of the trees will be curled. If the inſide be examined with a powerful microſcope, a thouſand ſmall inſects will be ſeen: theſe will ſeize upon the half-formed embryo, and deſtroy it in the midſt of its feeding leaves. If the bloſſom be not out, or the fruit formed, when theſe vermin arrive, they do no miſchief, but if the young fruit be juſt formed, and not of ſufficient ſtrength to repel their attack, it is ſo much the food they want, that it falls an immediate ſacrifice to their depredations. The critical period at which the fruit is ſubject to the mortality of the blight laſts only a few days: and therefore by having Orchards in different aſpects, there will be a great probability that one or other of them may eſcape it. All the aſſiſtance that art can render the trees againſt this evil is to keep them in a ſtate of health and vigour.

Smaller inſects are hurtful to the leaves, bloſſoms, and naſcent fruit. Larger inſects devour the fruit in a ſtate of maturity. Apples, particularly Cyder fruit, are of a texture firm enough to reſiſt their attacks: but Pears are devoured in great quantities ſome years by waſps. If a price were ſet in the ſpring upon the female waſp that comes out ſingly in May, it might be a means of deſtroying many neſts by anticipation *.

In Devonſhire Orchards are ſituated chiefly in vallies, and dips or hollows near houſes, not ſpread over the arable land and paſture grounds, as in Herefordſhire and Glouceſterſhire. Some of them lie bleakly expoſed to the north; others are in the current of the ſouth-weſt wind. But thoſe which ſucceed beſt are neither expoſed to the north eaſt, nor to the ſea winds from the weſt and ſouth-weſt.

The richeſt deepeſt loſs appear to have been choſen for Orchard grounds: the ſhallower ſoils are probably unfit for fruit-trees; but where ſituation will admit, ſuch as are encumbered with large ſtones, with good ſoil intervening, are ſingularly eligible.

Nurſery plants are ſingularly trained with ſtems not more than three or four feet high.

The ſame ground is kept in a ſtate of Orchard for a long continuance. As the old trees go off, young ones are planted in the intervals, without any apprehenſion of miſcarriage.

A ſtatute rod, namely five yards and a half, is the common diſtance between the trees. Some are not more than four yards apart, and a few are at ſix yards.

The moſt approved mode of planting is to remove the ſoil down to the rock, which ſeldom lies very deep, and to cover this eight or ten inches thick with a compoſt of freſh earth and ſea ſand; upon this they lay the inverted turf, and upon the turf the young tree is ſet, and its roots bedded in the beſt of the mould; finally covering them with the common earth raiſed in making the pit.

The uſual guard is brambles, bruſhwood or furze left till they rot at the foot of the tree.

During the winter months a Devonſhire Orchard appears as if hung with hoar froſt, owing to the white moſs, which hangs like ribbands from the boughs. Miſſetoe is not known there.

The uſe of the land is in a great meaſure thrown away. Horſes are ſuffered to run through it in winter, and calves are kept in it early in ſpring; but grown cattle and ſheep are at all times prohibited from entering; and whilſt the fruit is upon the trees, ſwine and even ſmall pigs are kept out; for in a bearing year the boughs bend to the very ground.

Previous to the gathering ſeaſon, the weeds, which are three or four feet high, are cut down with the ſcythe, and thrown to the roots of the trees, that the fruit may be found †.

In Kent, particularly about Maidſtone, are many ſmall incloſures, from one to ten acres, and ſomewhat more, planted with fruit of different kinds, for which the rocky ſoil of the neighbourhood ſeems particularly adapted. The beſt method known there for raiſing Orchards of Apples and Cherries, and plantations of Filberts is to plant them among Hops. The conſtant culture of the land for the Hops, with the warmth and ſhelter they afford the young trees, cauſes them to grow with great luxuriance. It is a very common practice to plant Hops, Apples, Cherries and Filberts all together. Eight hundred Hop-hills, two hundred Filberts, and forty Apple and Cherry trees to an acre. The Hops ſtand about twelve, and the Filberts about thirty years, by which time the Apple and Cherry trees require the whole land. Sometimes Apple and Cherry trees are planted in alternate rows, with two rows of Filberts between each row.

The method of planting Apple and Cherry trees, is to dig holes about two feet ſquare, and two ſpits deep, taking out the rock, and turning down the ſurface ſoil, on which the young tree is planted, and the remainder of the earth is trodden down cloſe about the roots. The trees are ſupported by ſtakes, until they get ſufficient ſtrength not to be hurt by gales of wind. A compoſition of lime and night ſoil is with a bruſh painted on their ſtems, which not only protects them from cattle, but is ſaid to promote the growth of them exceedingly.

The ſoil preferred for Cherries is a deep loam upon the rock. If grown by themſelves they are planted from twenty to thirty feet diſtant, and are put ſomewhat deeper in the earth than Apples: in other reſpects

* Marſhall's rur. econ. of Glouceſterſhire, &c. and Clark's ſurvey of Herefordſhire.

† Marſhall's rur. econ of the Weſt of England.

the management is the the fame *. Cherries feem to affect a calcareous foil, if we may judge from the fize and flourifhing ftate of the Black Cherry in the Chiltern part of Buckinghamfhire, on the almoft bare chalk rock.

In fome parts of Ireland it is a common practice, in planting Orchards for Apples, for making Cyder, to fet cuttings three or four feet long half way in the ground, of fuch forts as grow rough and knotty in the wood. They call them *ftitchers*: they rarely fail, and yield well and foon †.

On Pruning Orchards.

If pruning be judicioufly done, fruit trees will come into bearing fooner, and continue in vigour for nearly double their common age. No branch fhould ever be fhortened, unleſs for the figure of the tree, and then it fhould be taken off clofe at the feparation. The more the ranges of branches fhoot circularly, a little inclining upwards, the more equally will the fap be diſtributed, and the better will the tree bear. The ranges of branches fhould not be too near each other, that the fruit and leaves fhould all have their full fhare of ſun; and where it fuits, the middle of the tree fhould be ſo free from wood, that no branch croſſes another, but all the extremities point outwards.

October or November, or as ſoon as the fruit is off, is the proper ſeaſon for pruning. Few men cut true enough with a bill, it is therefore beſt to take off ſuperfluous branches with a ſaw, and afterwards to ſmooth the place with a knife; for it is eſſential that every branch which is to come off ſhould be cut perfectly cloſe and ſmooth. The wounds muſt then be fmeared over with a medicated tar. The bark cannot grow over a ſtump, becauſe there is no power to draw the ſap that way, for which reaſon always cut a little within the wood. Every branch ſhould be taken off that comes near to the ground, that has received any material injury, where the leaves are much curled, or that has a tendency to croſs the tree or run inwards. Then a little attention may be given to the beauty of the head, leaving all the branches as nearly equidiſtant as poſſible. If then there be any remaining blotches, open of ſcore them with a knife; and where the bark is ragged from any laceration, pare it gently down till you come to the live wood: touching over each with the medicated tar. This being done, the moſs ſhould be rubbed clean off, and the trees ſcored. In this laſt operation care ſhould be taken not to cut through the inner or white rind, which joins the bark to the wood. When trees are much thinned, they are ſubject to throw out great quantity of young ſhoots in the ſpring, theſe ſhould be rubbed off, and not cut, for cutting increaſes the number.

The medicated tar is compoſed of half an ounce of corroſive ſublimate, reduced to fine powder, by beating with a wooden hammer, and then put into a three-pint earthen pipkin, with about a glaſs full of gin or other ſpirit, ſtirred well together, and the ſublimate thus diſſolved. The pipkin muſt then be filled by degrees with vegetable or common tar, and conſtantly ſtirred till the mixture is intimately blended. This quantity will be ſufficient for two hundred trees. Being of a very poiſonous nature, it ſhould not be ſuffered to lie about the houſe. The ſublimate diſſolves better, when united with the ſame quantity of ſpirit of hartſhorn, or of ſal ammoniac.—This mixture being apt to run, conſiſtency may be given it by mixing pounded chalk or whiting.

Hints on Planting Orchard Trees, &c.

If poſſible, chooſe the trees the year before they are to be planted, and ſee that they are properly pruned in the nurſery, by taking off cloſe all rambling and unſightly branches, leaving only three or four good leading ſhoots; by this foreſight the trees will not require pruning for ſome time, and it will greatly accelerate their growth that they have no wounds to heal the year they are tranſplanted. Be ſure the trees are young, and plant no galled, ſtunted or cankered plants.

When the trees are taken up, keep the roots as long as is convenient, which will give them a diſpoſition to run horizontally, from which, the roots being more under the influence of the ſun, the ſap is richer, and produces the ſweeteſt fareſt fruit.

An Orchard ſhould be ſcreened on the eaſt, north and weſt ſides, and open to the ſouth. The natural growth of the different fruits ſhould be attended to in the diſpoſition of the trees. One row of the taſteſt ſtrongeſt growers ſhould be planted on the three cold ſides, and that row ſhould be planted twice as thick as any other: then one row more of the next free growers, parallel to the laſt rows, and ſo on gradually declining in ſize till you come to the centre. The intention here is to raiſe ſhelter; and it would be adviſeable, on the outſide of theſe outer rows, to run a ſhaw or belt of underwood, more than a pole wide, of four or ſix rows of the ſtreſt growing trees which the country produces; the wood of which will more than pay the expenſe. Half the trees ſhould be cut down in about fourteen years, to become ſtools, and the other half at a proper diſtance of time; ſo that the belt, for the whole duration of the Orchard, ſhall be of young wood, and feathering down to the bottom. Nothing can be better for this purpoſe than the ſweet Cheſtnut, where the ſoil ſuits it. The Hawthorn likewiſe, properly trained, has a wonderful good effect in blunting or abſorbing the baneful quality attendant upon the blighting air. Before the ground is laid out, be careful to ſecure the little rifings or inflections, to catch the ſun and exclude the cold. Firs may be happily introduced at a diſtance for ſhelter: all together might be ſo diſpoſed as at the ſame time to protect the fruit, and embelliſh the appearance of the country.

Such an Orchard may often bear a crop when the neighbourhood in general fails, and every one knows the value of a good crop in a failing year.

The plantations, belt and larger trees will keep off the blighting winds; and the Orchard being open in the middle and to the ſouth, the fragrant vapours which ſtun the fruits in the ſpring will be diſſipated, and each tree will enjoy the influence of the ſun and air. Beſides, the ground being open in the middle, the herbage will be the more valuable.

In new plantations avoid planting too deep, or too thick. Sunſhine will bring ſweet fruits; ſhade and plunging the roots beyond the influence of genial warmth will produce crude acid juices.

When the top of a tree ſeparates by the weight of the branches, an iron bolt may be introduced, by boring a hole through the upper part of the cleft with an half inch auger; firſt cutting the bark, and part of the wood with a chiſel, ſo as the head at one end, the nut and ſcrew at the other, may be hid under the bark. By uſing the medicated tar, the bark will ſoon grow over the iron.

The Orchardiſt's tools are two pruning-knives, a ſaw, two chiſels, a mallet, a ſpoke-ſhave, and a painter's brush. With the chiſels and ſpoke-ſhave work upwards, or the bark will ſhiver: the ſaw muſt be coarſe ſet, all the other tools ſharp and ſmooth.

The blade-bone of a ſhoe is better than the iron of the ſpoke-ſhave to rub off the rotten bark, moſs, &c. ‡

Mr. Marſhall recommends a young Orchard to be under the plough, as remarked above; whereas, according to Mr. Bucknall, if an Orchard be cultivated by the plough, little good can be expected, for the injuries which young trees receive from implements of huſbandry bruiſing them before they have got full poſſeſſion of the ſoil, generally damage them conſiderably, if they do not deſtroy them: and if by care they ſhould ſurmount theſe evils, the crops of corn being regularly carried off the land, the ground is ſo much impoveriſhed, that the trees are ſoon ſtunted, and run to moſs.

* Boys's Survey of Kent.

† Young's Irish tour, v. 336.

‡ The above obſervations on pruning, planting, &c. are from the Orchardiſt, by Thos. Skip Dyot Bucknall, Eſq. extracted from the Tranſactions of the Society of Arts.

There is not any culture we are acquainted with, equal to Hops, for raising an Orchard; and when the proper time comes for grubbing up the Hops, the trees may be secured, and the land turned to grazing. It would be better not to take up the Hops all at once, and to crop the vacant land for two or three years with Potatoes. Thus the trees would continue in better health, by taking away the shelter gradually. Let the agriculture be what it may, the land should never be ploughed or dug deep directly over the roots of a young-planted fruit-tree; for as the roots collect the best sap from their extreme points, if those points be broken off from the upper side of the roots, the tree is compelled to subsist on nurture drawn from the under strata, and consequently the sap will be of a worse quality.

Where hogs and poultry are constantly running over the ground, the trees seldom fail of a crop, which is the best proof that manure is necessary. Any manure will suit an Orchard; but the sweepings of cow-houses, hog-yards, slaughter-houses, dog-kennels, emptying of drains, &c. are more disposed to facilitate the growth and promote the health of fruit-trees, than manure from the stable. Watering, in dry weather, tends much to keep trees in health, and to secure their bearing, by swelling the buds for the next year's crop; for when the buds are strong at first coming out, they are not so liable to blight.

Those sorts of fruit which are known to thrive best in the neighbourhood should in general be preferred: and care should be taken not to suffer trees to bear much fruit whilst young.

Where trees are much overrun with mofs, a strong man, with a good birch broom, in a wet day, would do great execution. On young trees, the best method of destroying mofs is to rub all the branches, spring and autumn, with a hard scrubbing-brush and soap-suds, as a groom does a horse's legs.

Canker, in great measure arises from animalcules, and where the only object is to remove this disease, hog's-lard is preferable to tar; but where wet is to be guarded against, tar is better.

The best soil for an Orchard is certainly a fine deep loam; but if it is a strong clay, chalk, or a cold sharp gravel, plant the trees above ground, raising over them a little mound of good fresh mould as large as an extensive ant-hill, sowing the top with white Dutch Clover.

It is recommended that the rows of trees should not stand north and south, but a point of the compass towards the east; as the sun will then shine up the rows soon after ten o'clock, which in the spring will serve to dissipate the vapours collected in the night, and thus prevent the fruit from being stinted in the early stages of its growth *.

On Root-Pruning.

When a tree has stood so long that the leading roots have entered into the under strata, they are apt to draw a crude fluid, which the organs of more delicate fruit-trees cannot convert into such balsamic juices as to produce fine fruit. To prevent this evil, as soon as a valuable tree begins to show a sickly pinkeyness upon the leaves or the fruit inclining to ripeness, before it has acquired its full growth; at the same time the bark becoming dry, hard, and disposed to crack; let the ground be opened for three or four feet, and with a chisel cut close every root the least tending downwards. Should there be any mouldy appearance or rottenness among the roots, take them off, and wash the others clean. If the ground be too wet, throw a few stones or brickbats under the stem of the tree.

As the roots invariably collect the sap from the extreme points, this cutting compels the horizontal roots to work and exert themselves; and if there be any energy left, they will soon throw out fresh fibres, and thus collect a more congenial sap for the support of the tree. At the same time cover the ground thinly over with manure, as far as the roots may be supposed to extend, rub the stem and branches with soap-suds, and water the ground in very dry weather.

* Orchardist, by Dean Rocksall, Esq. p. 52. &c.

There is not a more powerful agent for producing canker than these descending roots. Canker indeed may arise from an improper soil, a vitiated sap, the generation of vapour, animalcules, and the want of a free circulation of the fluids: the last is often caused by injudiciously shortening the leading branches. The medication before recommended will stop the progress of the evil on the parts to which it is applied, but the canker may again break out on the other parts of the same tree; and that arises from the roots striking into a cold congenial subsoil †.

For a fuller account of some particulars relative to Orchards, here omitted, see NURSERY, PLANTING, PRUNING, and the articles under which Orchard trees are particularly treated of, as PYRUS and PRUNUS.

ORCHIASTRUM. See *Ophrys*.

ORCHIDI AFFINIS. See *Arethusa* and *Ophrys*.

ORCHIDION. See *Arethusa*.

ORCHIOIDES. See *Satyrium*.

ORCHIS (*of Pliny. Orxe of Theophrastus and Dioscorides. So named from the form of the roots in many of the species.*)

Lin. gen. n. 1009. *Reich. n.* 1094. *Schreb. n.* 1367. *Tournef. t.* 247. *Juss.* 65. Limodorum. *Tournef. t.* 250.

Class. 20. 1. Gynandria Diandria.

Nat. order of *Orchideæ*.

GENERIC CHARACTER.

CAL. *Spathes* wandering. *Spadix* simple. *Perianth* none.

COR. *Petals* five: three outer, two inner, converging upwards into a helmet.

Nectary one-leafed, fastened to the receptacle by the lower side between the division of the petals: *upper lip* erect, very short: *lower lip* large, spreading, wide: *tube* behind horn-shaped, nodding.

STAM. *Filaments* two, very slender, very short, placed on the pistil. *Authers* obovate, erect, covered with a bilocular folding of the upper lip of the nectary.

PIST. *Germ* oblong, twisted, inferior. *Style* fattened to the upper lip of the nectary, very short. *Stigma* compressed, blunt.

PER. *Capsule* oblong, one-celled, three-keeled, three-valved, opening three ways under the keels, cohering at the top and base.

SEEDS numerous, very small, like sawdust.

ESSENTIAL CHARACTER.

Nectary a horn or spur behind the flower.

SPECIES.

Helmet of the corolla spurred.

[1. Orchis carnea. *Great-flowered Cape Orchis.*
Ait. hort. kew. 3. 294.
Bulbs undivided, helmet of the corolla two-spurred, bractes erect.

2. Orchis bicornis. *Yellow-flowered Cape Orchis.*
Lin. spec. 1330. *Reich. 4. 4. amœn. 6. afr.* 90. *Burm. cent.* 3. 6. t. 6.
Bulbs undivided, helmet of the corolla two-spurred, lip five-parted, bractles reflex.

3. Orchis bifolia. *Two-flowered Orchis.*
Lin. spec. 1330. *Reich. 4. 4. amœn. 6. afr.* 92.
O. flexuosa. *Lin. syst.* 807. *suppl.* 398.
Bulbs undivided, helmet of the corolla one-spurred, wings spreading, lip lanceolate acuminate.

4. Orchis cornuta. *Horned Orchis.*
Lin. spec. 1330. *Reich. 4. 4. amœn. 6. afr.* 91.
Bulbs undivided, helmet of the corolla one-spurred, wings spreading, lip very small subrunate.

5. Orchis spathulata. *Spatulate Orchis.*
Lin. syst. 807. *suppl.* 398.
Bulbs undivided, helmet of the corolla spurred.

6. Orchis tripetaloides. *Three-petalled Orchis.*
Lin. syst. 807. *suppl.* 398.
Leaves lanceolate, helmet of the corolla arched blunt spurred, nectary lanceolate very small.

7. Orchis fagitalis.
Lin. syst. 807. *suppl.* 399.
Helmet of the corolla spurred two-eared, lip lanceolate.

† Orchardist, appendix.

8. Orchis barbata. *Bearded Orchis.*
Lin. syſt. 807. *ſuppl.* 399.
Helmet of the corolla erect ſpurred, nectary ſubtrifid ciliate.

9. Orchis draconis. *Dragon Orchis.*
Lin. syſt. 807. *ſuppl.* 400.
Bulbs undivided, helmet of the corolla ſpurred, nectary linear ovate at the tip.

10. Orchis tenella. *Delicate Orchis.*
Lin. syſt. 807. *ſuppl.* 400.
Helmet of the corolla ſpurred conical at the baſe, nectary linear.

11. Orchis monorrhiza. *One-bulbed Orchis.*
Swartz prodr. 118.
O. ſetacea? *Jacqu. amer.* 220.
Satyrium 1. *Brown. jam.* 324.
Bulb ſolitary undivided, lip of the nectary three-parted, the lateral parts briſtle-ſhaped, horn linear compreſſed the length of the germ.

** *Bulbs undivided.*

11. Orchis ſaneta. *Paleſtine Orchis.*
Lin. ſpec. 1330. *Reich.* 4. 4.
Bulbs undivided? lip of the nectary lanceolate five-toothed, horned curved in, petals converging.

12. Orchis ſuſannæ.
Lin. ſpec. 1330. *Reich.* 4. 4.
O. amboinenſis, flor. albis fimbriatis. *Herm. par. t.* 209. *Raii ſuppl.* 588.
Flos ſuſannæ. *Rumph. amb.* 5. 286. *t.* 287. *f.* 2.
Bulbs undivided, wings of the nectary wider ciliate.

13. Orchis radiata.
Thunb. in Linn. tranſ. 2. 326.
O. ſuſannæ. *Thunb. jap.* 25.
Bulbs undivided, wings of the nectary wider ciliate.

14. Orchis ciliaris. *Fringe-lipped Orchis.*
Lin. ſpec. 1331. *Reich.* 4. 5. *act. upſ.* 1741. *p.* 6. *Gron. virg.* 136. *Mor. hiſt.* 3. 499. 15. *Raii ſuppl.* 588. 24.
Bulbs undivided, lip of the nectary lanceolate ciliate, horn very long.

15. Orchis habenaria.
Lin. ſpec. 1331. *Reich.* 4. 5. *amoen.* 5. 408. *Swartz obſ.* 319. *t.* 9. *Brown. jam.* 324. 2. (Satyrium).
Bulb ſolitary undivided, lip of the nectary three-parted, lateral ones briſtle-ſhaped, horn filiform much longer than the germ.]

16. Orchis biſolia. *Butterfly Orchis.*
Lin. ſpec. 1331. *ſyſt.* 808. *Reich.* 4. 5. *act. upſ.* 1740. *p.* 5. *fl. ſuec. n.* 793. *mat. med.* 195. *mant.* 485. *Hudſ. angl.* 382. *Wither. arr. ed.* 3. 21. *Engl. bot.* 22. *Curt. lond. n.* 71. *Lightf. ſcot.* 512. *Relh. cant. n.* 643. *Sibth. oxon. n.* 23. *Hall. helv. n.* 1285. *t.* 35. *Scop. carn. n.* 1102. *Fl. dan. t.* 235. *Gunn. norv. n.* 32. *Leers herborn. n.* 687. *Pollich pal. n.* 841. *Villars dauph.* 2. 24. *Allion. pedem. n.* 1820. *Blackw. t.* 588. *Ludw. eſt. t.* 95. *Knipb. cent.* 6. *n.* 65. *Retz. obſ.* 1. 30.
O. alba biſolia minor, calcari oblongo. *Baub. pin.* 83. *Vaill. par.* 151. *t.* 30. *f.* 7. *Segu. ver. t.* 15. *f.* 10. *Mor. hiſt. ſ.* 12. *t.* 12. *f.* 18. *Raii ſyn.* 380. *Petiv. brit. t.* 68. *f.* 11.
O. alba calc. obl. *Baub. hiſt.* 2. 771. *Raii hiſt.* 1221.
O. major ſphegodes, ſ. Teſticulus vulpinus primus. *Park. theat.* 1351. 7.
O. ornithophora. *Ger.* 165. 9. —Hermaphroditica. *Ejuſd.* 162. 1. *emac.* 211. 1.
Teſticulus pſychodes. *Ger. emac.* 211. 2.
T. vulpinus primus. *Lob. obſ.* 88. 2. *ic.* 1. 178. 1.
Teſticuli ſpecies 5. *Cam. epit.* 625.
Satyrium flore albo. *Riv. t.* 12.
Orchis Serapias primus. *Dod. pempt.* 237. 2.
β. O. biſolia altera. *Baub. pin.* 82. *Park. theat.* 1350. *f.* 3.
Bulbs undivided, lip of the nectary lanceolate quite entire, horn very long, petals ſpreading.

[17. Orchis ornithis. *Bird Orchis.*
Lin. ſyſt. 808. *Jacqu. auſtr.* 2. *t.* 138.
Bulbs undivided, lip of the nectary roundiſh, horn twice the length of the germ, the three outer petals converging, the others ſpreading very much.

18. Orchis flexuoſa. *Winding-ſtalked Orchis.*
Lin. ſpec. 1331. *ſyſt.* 808. 17. *Reich.* 4. 6. *amoen.* 5. *ajr.* 89.
Bulbs undivided, lip of the nectary imbricate, two petals concealed ſubiform, ſcape flexuoſe.

19. Orchis cucullata. *Cowled Orchis.*
Lin. ſpec. 1332. *Reich.* 4. 6. *Pallas it.* 3. 265. *Gmel. ſib.* 1. 16. *t.* 3. *f.* 2.
Bulbs undivided, lip of the nectary trifid, petals confluent, ſtem naked.

20. Orchis globoſa. *Round-ſpiked Orchis.*
Lin. ſpec. 1332. *ſyſt.* 808. *Reich.* 4. 6. *mant.* 484. *Jacqu. vind.* 292. *auſtr. t.* 265. *Scop. carn. n.* 1106. *Hall. helv. n.* 1272. *t.* 27. *Allion. pedem. n.* 1821. *Villars dauph.* 2. 26.
O. Halleri. *Crantz. auſtr.* 488.
O. flore globoſo. *Baub. pin.* 81. *Raii hiſt.* 1216.
Cynoſorchis capitulo globoſo. *Park. theat.* 1345. *n.* 13.
Bulbs undivided, lip of the nectary reſupinate trifid, middle emarginate, horn ſhort, petals awl-ſhaped at the tip.]

21. Orchis pyramidalis. *Pyramidal Orchis.*
Lin. ſpec. 1332. *ſyſt.* 808. *Reich.* 4. 6. *mant.* 484. *fl. ſuec. n.* 798. *Hudſ. angl.* 382. *Wither. arr. ed.* 3. 23. *Engl. bot.* 110. *Lightf. ſcot.* 513. *Relh. cant. n.* 644. *Sibth. oxon. n.* 24. *Jacqu. vind.* 292. *auſtr. t.* 266. *Hall. helv. n.* 1286. *t.* 35. 1. *Scop. carn. n.* 1105. *Villars dauph.* 2. 25. *Allion. pedem. n.* 1822.
O. purpurea, ſpica congeſta pyramidali. *Raii hiſt.* 1215. *ſyn.* 377. *t.* 18. *Segu. ver. t.* 15. *f.* 11. *Petiv. brit. t.* 68. *f.* 4.
O. flore conglomerato. *Riv. t.* 14.
Cynoſorchis militaris montana, ſpica rubente conglomerata. *Baub. pin.* 81. *prodr.* 28.
Orchis batavica 6. *Cluſ. hiſt.* 1. 269. 1.
O. parvo flore rubro ſ. phœniceo. *Baub. hiſt.* 2. 764. 1.
Cynoſorchis militaris ſpica rubente conglomerata. *Park. theat.* 1345. 9.
Tragorchis minor batavica. *Ger. emac.* 210. 4.
Bulbs undivided, lip of the nectary two-horned trifid equal quite entire, horn long, petals ſublanceolate.

[22. Orchis coriſophora. *Lizard Orchis.*
Lin. ſpec. 1332. *ſyſt.* 808. *Reich.* 4. 7. *mant.* 485. *act. upſ.* 1740. *p.* 8. *Hudſ. angl.* 383. *Hall. helv. n.* 1284. *t.* 34. *Scop. carn. n.* 1107. *Pollich pal. n.* 842. *Fl. dan. t.* 224. *Villars dauph.* 2. 26. *Allion. pedem. n.* 1823. *Jacqu. auſtr.* 2. 14. *t.* 122.
O. flore parvo viridi purpureo. *Riv. hex. t.* 20.
O. odore hirci minor. *Baub. pin.* 82. *Vaill. par.* 149. *t.* 31. *f.* 30, 31, 32.
Tragorchis minor flore ſuliginoſo. *Raii hiſt.* 1213.
T. fœmina. *Ger.* 161. *emac.* 210. 3.
T. minor & verior. *Park. theat.* 1349. 3.—gemmæ. *Lob. ic.* 177.
β. O. odore hirci minor, ſpica purpuraſcente. *Baub. pin.* 82.
Bulbs undivided, lip of the nectary trifid reflex crenate, horn ſhort, petals converging.

23. Orchis cubitalis.
Lin. ſpec. 1333. *Reich.* 4. 8. *fl. zeyl. n.* 320.
Bulbs undivided, lip of the nectary trifid filiform, middle ovate, horn ſhorter than the germs.]

24. Orchis morio. *Female or Meadow Orchis.*
Lin. ſpec. 1333. *ſyſt.* 808. *Reich.* 4. 8. *mant.* 485. *act. upſ.* 1740. *p.* 8. *mat. med.* 195. *fl. ſuec. n.* 694. *Hudſ. angl.* 383. *Wither. arr. ed.* 3. 23. *Curt. lond.* 3. 59. *Lightf. ſcot.* 514. *Relh. cant. n.* 645. *Sibth. oxon. n.* 25. *Retz. obſ.* 1. 30. *Leers. cochinch.* 523. *Hall. helv. n.* 1282. *t.* 33. *Scop. carn. n.* 1110. *Crantz. auſtr.* 449. *Pollich pal. n.* 843. *Fl. dan. t.* 253. *Villars dauph.* 2. 27. *Ger. prov.* 127. *n.* 4. *Allion. pedem. n.* 1825. *Riv. hex. t.* 19.
O. morio fœmina. *Baub. pin.* 82. *Vaill. par. t.* 31. *f.* 13, 14. *Segu ver. t.* 15. *f.* 7. *Park. theat.* 1347. 4. *Raii hiſt.* 1214. *ſyn.* 377. *Mor. hiſt. ſ.* 12. *t.* 12. *f.* 5.
O. minor purpurea & aliorum colorum cum aliis virentibus. *Baub. hiſt.* 2. 761. 3.

Cynoforchis morio femina. *Ger.* 158. 6. *emac.* 208. 2. *Lob. obſ.* 88. 1. *ic.* 1. 176. 2.
Triorchis ſerapias mas. *Fuchſ. hiſt.* 559.
Tr. mas. *Lonic.* 1. 202. 1.
Teſticulus morionis femina. *Dod. pempt.* 236. 2.
Bulbs undivided, lip of the nectary quadrifid crenulate, horn blunt aſcending, petals blunt converging.
25. Orchis maſcula. *Male or early ſpotted Orchis.*
Lin. ſpec. 1333. *ſyſt.* 809. *Reich.* 4. 9. *mant.* 485. *fl. ſuec. n.* 795. *Hudſ. angl.* 383. *Wither. arr. ed.* 3. 24. *Curt. lond.* 2. 62. 121. *Lightf. ſcot.* 515. *Relh. cant. n.* 646. *Sibth. oxon. n.* 26. *Woodv. med. bot.* 246. *t.* 90. *Retz. obſ.* 1. 30. *Hall. helv. n.* 1283. *t.* 33. *Scop. carn. n.* 1111. *Crantz. auſtr.* 500. *Jacqu. miſc.* 2. 375. *Pollich pal. n.* 844. *Fl. dan. t.* 457. *Villars dauph.* 2. 28. *Allion. pedem. n.* 1826.
O. morio mas foliis maculatis. *Baub. pin.* 81. *Rudb. elyſ.* 2. 192. *f.* 3. *Vaill. par.* 151. *t.* 31. *f.* 12. *Park. theat.* 1346. 1. *Raii hiſt.* 1214. *ſyn.* 376. *Mor. hiſt. ſ.* 12. *t.* 12. *f.* 3.
O. major tota purpurea, maculoſo folio. *Baub. hiſt.* 2. 763. 1.
O. mas anguſtifolia. *Fuchſ. hiſt.* 555.
O. mas minor. *Lonic.* 1. 201. 1.
Cynoforchis morio mas. *Ger.* 158. 5. *emac.* 208. 1. *Lob. obſ.* 87. 3. *ic.* 1. 176. 1.
Palmata major. *Riv. hex. t.* 10. *Segu. ver. t.* 15. *f.* 6.
Teſticulus 4. *Matth.* 882. *Cam. epit.* 624.
T. morionis mas. *Dod. pempt.* 236. 1.
Satyrium mas. *Blackw. t.* 53.
Bulbs undivided, lip of the nectary four-lobed crenulate, horn blunt, dorſal petals bent back.
[26. Orchis uſtulata. *Dwarf Orchis.*
Lin. ſpec. 1333. *ſyſt.* 809. *Reich.* 4. 9. *mant.* 485. *act. upſ.* 1741. *p.* 11. *fl. ſuec. n.* 797. *Hudſ. angl.* 384. *Wither. arr. ed.* 3. 25. *Engl. bot.* 18. *Relh. cant. n.* 647. *Sibth. oxon. n.* 27. *Hall. helv. n.* 1273. *t.* 28. *Scop. carn. n.* 1108. *Pollich pal. n.* 845. *Fl. dan. t.* 103. *Villars dauph.* 2. 31. *Ger. prov.* 128. *n.* 5. *Allion. pedem. n.* 1827.
O. amoena. *Crantz. auſtr.* 490.
O. militaris pratenſis humilior. *Tournef. inſt.* 432. *Vaill. par.* 149. *t.* 31. *f.* 35, 36. *Segu. ver. t.* 15. *f.* 4.
O. mil. minor, & minima. *Riv. hex. t.* 17.
O. pannonica 4. *Cluſ. hiſt.* 1. 268. 1. *Raii hiſt.* 1215. *ſyn.* 377.
O. parvis floribus multis punctis notatis. *Baub. hiſt.* 2. 765. 2.
O. pannonica. *Du Bry.*
O. minor flore incarnato. *Beſl. eyſt.*
Cynoforchis militaris pratenſis humilior. *Baub. pin.* 81. *Mor. hiſt. ſ.* 12. *t.* 12. *f.* 20.
C. milit. pannon. *Park. theat.* 1345. 11.
C. minor pannon. *Ger. emac.* 207.
Bulbs undivided, lip of the nectary quadrifid rugged with dots, horn blunt very ſhort, petals diſtinct.]
27. Orchis militaris. *Man Orchis.*
Lin. ſpec. 1333. *ſyſt.* 809. *Reich.* 4. 10. *act. upſ.* 1740. *p.* 11. *fl. ſuec. n.* 798. *Hudſ. angl.* 384. *Wither. arr. ed.* 3. 25. *Engl. bot.* 16. *Sibth. oxon. n.* 28. *Hall. helv. n.* 1277. *t.* 28. *Scop. carn. n.* 1112. *Gunn. norv. n.* 694. *Pollich pal. n.* 846. *Crantz. auſtr.* 501. *Gmel. ſib.* 1. 14. *Villars dauph.* 2. 34. *Allion. pedem. n.* 1834.
O. Rivini. *Gouan. illuſtr.* 74.
O. moravica. *Jacqu. collect.* 1. 61. *Lin. ſyſt.* 809.
O. galea & alis fere cinereis. *Baub. hiſt.* 2. 757. *Raii hiſt.* 1218. *ſyn.* 378.
O. maſcula. *Riv. hex. t.* 15.
O. mas latifolia. *Fuchſ. hiſt.* 554.
Cynoforchis latifolia hiante cucullo major. *Baub. pin.* 80.
C. latifolia minor. *Park. theat.* 1344. 4.
C. major altera. *Ger. emac.* 205. 2.
β. Orchis magna, latis foliis, galea fuſca vel nigricante. *Baub. hiſt.* 2. 759. *Raii ſyn.* 378. *t.* 19. *f.* 2. *Pollich, n.* 846. δ. *Hall. helv. n.* 1276. *t.* 31.
O. fuſca. *Jacqu. auſtr.* 4. 4. *t.* 307. *Curt. lond. n.* 68. *Lin. ſyſt.* 809.
O. militaris. *Crantz. auſtr.* 501. *b.*
γ. O. latifolia hiante cucullo minor. *Vaill. par. t.* 32. *f.* 20, 23, 24. *Villars dauph.* 2. 33. *n.* 11. *Hall. helv. n.* 1275.
Cynoforchis lat. hiante cuc. min. *Baub. pin.* 81.
δ. O. milit. major. *Tournef. inſt.* 438. *t.* 247. *Vaill. par.* 148. *t.* 31. *f.* 21, 27, 28. *Segu. ver.* 2. 122. *t.* 11. *f.* 2. *Riv. hex. t.* 16. *Pollich, n.* 846. β.
O. mil. purpurea. *Hudſ. angl.* 384. β.
Cynoforchis mil. major. *Baub. pin.* 81.
ε. O. flore ſimiam referens. *Baub. pin.* 82. *Pollich, n.* 846. γ.
O. zoophora circopithecum exprimens orcades. *Col. ekphr.* 1. 320. *Raii hiſt.* 1219. *Villars dauph.* 2. 32. 10.
Bulbs undivided, lip of the nectary five-cleft rugged with dots, horn blunt, petals confluent.
[28. Orchis papilionacea.
Lin. ſpec. 1331. *Reich.* 4. 11. *Scop. carn. n.* 1103.
O. papilionem expanſum referens. *Baub. pin.* 83 ?
β. O. rubra. *Jacqu. collect.* 1. 60. *ic. rar. t.* 163. *Lin. ſyſt.* 809.
Bulbs undivided, lip of the nectary undivided crenate emarginate widened, horn awl-ſhaped, petals converging.
29. Orchis pallens.
Lin. ſyſt. 809. *mant.* 292. *Reich.* 4. 11. *Jacqu. auſtr.* 1. *t.* 45. *Hall. helv. n.* 1281. *t.* 30. *Villars dauph.* 2. 30.
O. bulboſa flor. flaveſcentibus. *Segu. ver. t.* 8. *f.* 3.
O. foetida ſylvatica præcox flore albo barba luteola. *Rupp. jen.* 2. 297.
Bulbs undivided, lip of the nectary trifid quite entire, horn blunt of a middling length, petals ſpreading.
30. Orchis hiſpidula. *Hairy Orchis.*
Lin. ſyſt. 809. *ſuppl.* 401.
O. hiſpida. *Thunb. prodr. cap.* 4.
Bulbs undivided, ſtem leafleſs, leaf round hiſpid, lip five-parted, ſegments linear.
31. Orchis ſpeciosa. *Handſome Orchis.*
Lin. ſyſt. 809. *ſuppl.* 401. *Thunb. prodr. cap.* 4.
Bulbs undivided, ſtem leafy, leaves wide ovate, lip three-parted, ſegments flexuoſe.
32. Orchis plantaginea. *Plantain-leaved Orchis.*
Roxb. coram. 2. 32. *t.* 37.
Bulb ſingle undivided, ſtem leafy, leaves broad-oval, lip three-parted, horn twice the length of the germ.]

*** *Bulbs palmate.*

33. Orchis latifolia. *Broad-leaved or Marſh Orchis.*
Lin. ſpec. 1334. *ſyſt.* 810. *Reich.* 4. 12. *mant.* 486. *act. upſ.* 1740. *p.* 15. *fl. ſuec. n.* 801. *Huſt. diſſ.* 429. *Hudſ. angl.* 385. *Wither. arr. ed.* 3. 26. *Curt. lond.* 5. 63. 250. *Lightf. ſcot.* 516. *Relh. cant. n.* 648. *Sibth. oxon. n.* 29. *Hall. helv. n.* 1279. *t.* 32. 2. *Gmel. ſib.* 1. 24. *Crantz. auſt.* 493. *Pollich pal. n.* 847. *Fl. dan. t.* 266. *Villars dauph.* 2. 35. *Ger. prov.* 128. *n.* 7. *Allion. pedem. n.* 1839. *Mill. illuſtr. Knipb. cent. n.* 65. *Knorr. del. bert.* 2. *t.* O. 4. *f.* 1. *Riv. hex. t.* 19. *Laur. cochinch.* 523.
O. comoſa. *Scop. carn. n.* 1120?
O. palmata pratenſis latifolia, longis calcaribus. *Baub. pin.* 85. *Vaill. par. t.* 31. *f.* 1—3. *Raii ſyn.* 380.
O. palmata non maculata. *Baub. hiſt.* 2. 744. 1. *Raii hiſt.* 1223.
O. palma Chriſti mas. *Ger.* 169. 1. *emac.* 210. 1.
O. palmata major mas, ſ. Palma Chriſti mas. *Park. theat.* 1356. 1.
Satyrium femina. *Blackw. t.* 405.
S. baſilicum mas. *Dod. pempt.* 240. 1.
Palma Chriſti & Serapias mas lævi folio. *Lob. obſ.* 90. 3. *ic.* 1. 188. 1.
β. O. palm. paluſtris latifolia. *Baub. pin.* 86.
γ. O. palm. montana altera. *Baub. pin.* 86.
δ. O. palm. pal. maculata. *Baub. pin.* 86.
Bulbs ſubpalmate ſtraight, horn of the nectary conical, lip three-lobed, the lateral lobes bent back, bracteæ longer than the flower.
[34. Orchis incarnata.
Lin. ſpec. 1335. *ſyſt.* 810. *Reich.* 4. 12. *fl. ſuec.*

n. 802. *Hall. helv. n.* 1280. *Villars dauph.* 2. 36. *Allion. pedem. n.* 1841.

O. palmata lutea, floris labio maculato. *Segu. ver.* 3. 349. *t.* 8. *f.* 5.

Bulbs palmate, horn of the nectary conical, lip obscurely three-lobed serrate, dorsal petals reflex.

35. Orchis fambucina. *Elder-scented Orchis.*
Lin. spec. 1334. *fysh.* 810. *Reich.* 4. 13. *fl. suec. n.* 803. *Hall. helv. n.* 1280. 8. *Gunn. norv. n.* 426. *Pollich pal. n.* 848. *Jacqu. austr.* 2. *t.* 108. *Villars dauph.* 2. 36. *Allion. pedem. n.* 1840.

O. palmata lutea, labio floris maculato. *Segu. ver.* 249. *t.* 8. *f.* 5.

O. palm. fambuci odore. *Baub. pin.* 86. *Rudb. elys.* 2. 213. *f.* 9.

O. pannonica 8. *Clus. hist.* 1. 269. *Ger. emac.* 221. 3. *Raii hist.* 1224.

Bulbs subpalmate erect, horn of the nectary conical, lip ovate subtrilobate, bractes the length of the flowers.]

36. Orchis maculata. *Spotted Orchis.*
Lin. spec. 1335. *fysh.* 810. *Reich.* 4. 13. *mant.* 487. *act. upf.* 1740. *p.* 14. *fl. suec. n.* 800. *Hudf. angl.* 385. *Wither. arr. ed.* 3. 27. *Lightf. scot.* 517. *Relh. cant. n.* 649. *Sibth. oxon. n.* 30. *Hall. helv. n.* 1278. *t.* 32. 1. *Scop. carn. n.* 1119. *Gmel. fib.* 1. 23. *Crantz. austr.* 492. *Pollich pal. n.* 349. *Villars dauph.* 2. 37. *Allion. pedem. n.* 1842. *Fl. dan. t.* 933. *Riv. hex. t.* 8. & 11. *Regn. bot.*

O. palmata pratenſis maculata. *Baub. pin.* 85. *Mor. hiſt. ſ.* 12. *t.* 14. *f.* 5. *row.* 3.

O. palm. montana macul. *Baub. pin.* 86. *Vaill. par. t.* 31. *f.* 9, 10.

O. palm. ſpecioſiore thyrſo, folio maculato. *Baub. hiſt.* 2. 775. 2. *Raii hiſt.* 1223. *ſyn.* 381.

O. palm. fœmina ſ. Palma Chriſti fœmina, maculato folio. *Park. theat.* 1357. 3.

Palma Chriſti fœmina. *Gur.* 169. 2. *emac.* 220. 2.

O. fœmina altera. *Trag.* 781.

Satyrium baſilicum femina. *Dod. pempt.* 240. 2.

Palma Chriſti, Serapias fœmina pratenſis. *Lob. obſ.* 90. 4. & 91. 1. *ic.* 1. 188. 2. & 189. 1.

Bulbs palmate ſpreading, horn of the nectary ſhorter than the germ, lip flat, dorſal petals erect.

[37. Orchis odoratiſſima. *Sweet-ſcented Orchis.*
Lin. ſpec. 1335. *fysh.* 810. *Reich.* 4. 14. *mant.* 487. *Gunn. norv. n.* 696. *Leers herborn. n.* 693. *Jacqu. auſtr.* 3. *t.* 264. *Hall. helv. n.* 1274. *t.* 29. *Villars dauph.* 2. 38. *Allion. pedem. n.* 1844.

O. conopſea varietas. *Jacqu. vind.* 293.

O. palmata anguſtifolia minor odoratiſſima. *Baub. pin.* 86. *prodr.* 30. *ic. Raii hiſt.* 1225. *Park. theat.* 1357. 7. *Segu. ver.* 3. 250. *t.* 8. *f.* 6.

Bulbs palmate, horn of the nectary recurved ſhorter, lip three-lobed, leaves linear.]

38. Orchis conopſea. *Lang-ſparred Orchis.*
Lin. ſpec. 1335. *fysh.* 810. *Reich.* 4. 14. *mant.* 487. *act. upſ.* 1740. *p.* 13. *fl. ſuec. n.* 799. *hort. cliff.* 429. *Hudſ. angl.* 385. *Wither. arr. ed.* 3. 28. *Engl. bot.* 10. *Lightf. ſcot.* 518. *Relh. cant. n.* 650. *Sibth. oxon. n.* 31. *Hall. helv. n.* 1287. *t.* 29. *Gmel. ſib.* 2. 22. *Crantz. auſtr.* 507. *Scop. carn. n.* 1121. *Pollich pal. n.* 850. *Fl. dan. t.* 224. *Villars dauph.* 2. 39. *Allion. pedem. n.* 1843.

O. anguſtifolia non maculata. *Riv. hex. t.* 11.

O. palmata minor calcaribus oblongis. *Baub. pin.* 85. *Vaill. par. t.* 30. *f.* 8. *Rudb. elyſ.* 2. 212. *f.* 5. *Mor. hiſt. ſ.* 12. *t.* 14. *f.* 14.

O. palm. rubella cum longis calc. rubellis. *Baub. hiſt.* 2. 778. 1. *Raii hiſt.* 1224. *ſyn.* 381.

O. palm. minor flore rubro. *Park. theat.* 1358. 5.

Serapias minor intente flore. *Ger.* 171. 2. *emac.* 222. 2. *Lob. obſ.* 91. 2. *ic.* 1. 189. 2.

Satyrium baſilicum mas. *Fuchſ. hiſt.* 712.

β. O. palm. anguſt. minor. *Baub. pin.* 85.

γ. O. palm. pratenſis maxima. *Baub. pin.* 85. *Pollich.*

Bulbs palmate, horn of the nectary briſtle-ſhaped longer than the germs, lip trifid, two of the petals ſpreading very much.

[39. Orchis flava. *Yellow Orchis.*
Lin. ſpec. 1336. *Reich.* 4. 15. *Gron. virg.* 137. *Sabbat. hiſt.* 3. 499.

Bulbs palmate, horn of the nectary filiform the length of the germ, lip trifid quite entire.

**** *Bulbs in bundles.*

40. Orchis fuſceſcens.
Lin. ſpec. 1336. *Reich.* 4. 15. *Gmel. ſib.* 1. 20. *t.* 4. *f.* 2.

Horn of the nectary the length of the germ, lip ovate toothed at the baſe.

41. Orchis ſtrateumatica.
Lin. ſpec. 1336. *Reich.* 4. 15. *fl. zeyl. n.* 319.

Lip of the nectary two-lobed quite entire, horn the length of the germ.

42. Orchis hyperborea.
Lin. fysh. 810. *Reich.* 4. 15. *mant.* 121. *Retz. obſ.* 4. *t.* 3.

Horn of the nectary the length of the germ, lip linear quite entire truncate.]

43. Orchis abortiva. *Purple Bird's-neſt*, or *Bird's-neſt Orchis.*
Lin. ſpec. 1336. *fysh.* 811. *Reich.* 4. 16. *act. upſ.* 1740. *p.* 17. *Hudſ. angl.* 386. *Wither. arr. ed.* 3. 29. *Gunn. norv. n.* 695. *Leers herborn. n.* 695. *Jacqu. auſtr.* 2. *t.* 193. *Sauv. monſp.* 93. *Villars dauph.* 2. 40.

Serapias abortiva. *Scop. carn. n.* 1130.

Epipactis. *Hall. helv. n.* 1288. *t.* 36.

O. abortiva violacea. *Baub. pin.* 86.

Limodorum auſtriacum. *Cluſ. pann.* 242. *hiſt.* 270. *Raii ſyn.* 387.

Orobanche & Nido avis affine Pſeudolimodorum auſtriacum violaceum. *Baub. hiſt.* 2. 782.

Nidus avis purpurea. *Park. theat.* 1361. 2.

Nidus avis flore & caule violaceo purpureo colore. *Ger. emac.* 228.

Bulbs filiform, lip of the nectary ovate quite entire, ſtem leafleſs.

[44. Orchis fimbriata. *Fringed Orchis.*
Ait. hort. kew. 3. 297.

Horn of the nectary longer than the germs, lip three-parted ciliary, petals ſpreading, leaves oblong.

***** *Bulbs yet unknown.*

45. Orchis pſychodes.
Lin. ſpec. 1336. *Reich.* 4. 16. *Gron. virg.* 134. 137. *Raii ſuppl.* 582.

Horn of the nectary briſtle-ſhaped the length of the germ, lip three-parted ciliary.

46. Orchis ſpeciabilis.
Lin. ſpec. 1337. *Reich.* 4. 17. *Gron. virg.* 109. 136.

Horn of the nectary the length of the germ, lip ovate emarginate, ſtem leafleſs, leaves oval.

47. Orchis filicornis.
Lin. fysh. 811. *ſuppl.* 400.

Nectary bifid, horn capillary.

48. Orchis tipuloides.
Lin. fysh. 811. *ſuppl.* 401.

Lip of the nectary three-parted linear almoſt equal, horn filiform very long.

49. Orchis japonica.
Lin. fysh. 811. *Thunb. jap.* 26.

Horn of the nectary recurved, lip ovol ſhaped entire.

50. Orchis falcata.
Lin. fysh. 811. *Thunb. jap.* 26.

Horn filiform very long, leaves enſiform-channelled ſickle-ſhaped.

DESCRIPTIONS, &c.

1. Leaves roundiſh, grooved underneath. Spike compact. Bractes roundiſh, acute, erect. Flowers inodorous, white within, fleſh-coloured without. The two uppermoſt petals and the loweſt narrower than the others, all keeled on the outſide, the keel running down into the germ, whence the germ is five-ribbed below. The column of the fructification is the length of the helmet. Found at the Cape of Good Hope by Mr. Francis Maſſon. It was introduced in 1787, and flowers in ſeptember.

2. Leaves ovate-oblong, marked with lines underneath. Spike looſe. Bractes ovate-lanceolate, reflex-

flowers very fragrant, ſmelling like cloves, yelloviſh green. The three lower petals narrower and ſhorter. Column of fructification ſhorter than the helmet [r].

Root-leaves two, cordate, oppoſite, ſtem-leaves three or four, alternate, cowled. Bractes the length of the ſpike. Helmet of the corolla one-leafed, arched, acuminate, larger: the two lateral petals a little wider: lip linear, with equal ſegments: body of the ſtyle oblong, curved inwards; with two rounded lobes under the tip [s]. This ſpecies is remarkable for its double ſpur, ariſing from the helmet inſtead of the lip [t].

Native of the Cape of Good Hope. Introduced in 1787, by Mr. Francis Maſſon. It flowers in ſeptember [u], and is extremely ſweet.

3. Root-leaves ovate, ſmall. Scape filiform, with three or four leafy ſheaths. Upper petal of the corolla ſhort, acuminate: ſpur aſcending, the length of the petal: the two inner petals linear, with two teeth at the tip, having a lobe underneath concealed beneath the upper one, and of the ſame length, embracing the genitals: lateral petals two, lanceolate, longer than the others [v].

Orchis flexuoſa of the ſupplement is ſaid to be the ſame with this. The ſcape is deſcribed as half a foot high, filiform, bent above the ſtem-leaf. Root-leaves ovate, acute, petioled. Stem-leaves ſmall, ſheathing at the baſe, lanceolate, three or four. Flowers from three to five in a raceme, remote, pedicelled. Upper petal lanceolate, riſing, with a ſpur the length of the flower: ſecond and third inner, ſhort, linear, with two teeth at the tip; fourth and fifth lanceolate, a little longer than the firſt: lip awl-ſhaped, with a tooth on each ſide at the baſe. Native of the Cape of Good Hope.

4. Leaves on the ſtem many, alternate, large, lanceolate, ſheathing at the baſe. Spike looſe. Bractes lanceolate, longer than the flower. Helmet arched, oblong, blunt: horn blunt, ſhort, lying on the germ: petals two, lateral, exterior, oblong, ſpreading; two interior, oblong, ſhorter than the helmet, fleſhy at the tip, thickiſh, almoſt converging beneath the helmet. Native of the Cape of Good Hope [w].

5. Root-leaves very many, linear, ſhorter by half than the ſtem. Scape a ſpan high, ſheathed: leaves acute, ſcarioſe, wider. Flowers generally two, alternate. Germ oblong, pedunculed, inferior. Helmet of the corolla pedicelled, very ſhortly ſpurred, cordate: the two lateral petals ovate, acuminate: lip cordate, on a filiform pedicel, twice the length of the flower. Native of the Cape of Good Hope [x].

6. Stem a foot high, even. Root-leaves ſeveral, a hand in length: ſtem-leaves alternate, about eight, an inch long, embracing. Spike many-flowered. Flowers alternate, diſtinct: firſt petal roundiſh, very much arched, with a very long conical horn behind; ſecond and third oblong, very ſhort, annexed to the genitals; fourth and fifth roundiſh, ſpreading, larger than the others; hence from the firſt, fourth and fifth, a ſort of three-petalled flower is formed: lip very ſmall, lanceolate, blunt. Found at the Cape of Good Hope by Thunberg [y].

7. Root-leaves four or five, ſhorter by half than the ſtem, lanceolate, bluntiſh. Stem a ſpan high, covered entirely with leafy, membranaceous, acute ſheaths. Spike ſhort. Firſt petal concave, with a ſagittate point, and two ſharp earlets turned back, and a ſhort horn behind: ſecond and third oppoſite to the genitals, very acuminate, wide at the baſe, not ſhorter than the uppermoſt: fourth and fifth, elliptic, the ſame length with the reſt [z].

8. Bulbs oblong, undivided, very hairy. Scape a foot high, leafleſs, the thickneſs of a ſparrow's quill. Leaves very many, briſtle-ſhaped or linear, ſome almoſt the length of the ſcape, others ſhorter. Uppermoſt petal ovate, with an erect ſpur behind. The neareſt lateral petals on each ſide, ovate-oblong, the ſize of the uppermoſt, ſpreading: the two neareſt interior petals very ſhort, by the ſide of the genitals. Lip lanceolate, branchingly ciliate: cilias blunt, the length of the flower. Germ recurved.

9. Scape a foot and half high, the thickneſs of a gooſe quill, wholly ſheathed with leaves. Root-leaves lanceolate, an inch wide, ſhorter by half than the ſcape: ſtem-leaves ſheathing, netted-veined, acute. Spike with few flowers, ſomewhat remote. Bractes broad-lanceolate, netted-veined, the length of the germ. Upper petal obovate, larger, ſomewhat arched, with a very long ſpur behind: lateral petals on each ſide two, lanceolate: lip linear with an ovate tip, the length of the petals.

10. Stem the length of the thumb or of Ophrys Monorchis. Leaves both on the root and ſtem linear. Spike oblong, with from five to eight flowers. Firſt petal ovate, horned behind with a conical baſe: ſecond and third converging under the firſt, and ſimilar to it: fourth and fifth lateral, ſpreading: lip linear.

All theſe were found at the Cape of Good Hope by Sparrmann [a].

11. Height from eighteen to twenty-two inches. Stem ſimple, upright. Leaves oblong [b]. Native of Jamaica and Hiſpaniola [c].

Swartz thinks it may poſſibly be the ſame with the *ſetacea* of Jacquin, which he deſcribes as two feet high and erect, with lanceolate acute entire alternate leaves, the flowers in a ſpike and white. It is a native of Martinico, in moiſt meadows, and flowers there in november [d].

11. Stem a foot high, for the moſt part naked, but having one or two ſharp leaflets at top. Raceme looſe. Bractes lanceolate, the length of the germ. Petals acuminate, three, uniting to form an oblong helmet, but diſtinct at the tip: lip wide-lanceolate, divided into five ſharp teeth, the intermediate ones gradually longer. Native of Paleſtine [e].

12. This is a very elegant ſpecies. Lower leaves ſhort, acuminate, embracing: upper longer, green, round, ſmooth. Stem a long ſpan or a foot high, ſlender. Flowers white: helmet entire, wide, roundiſh, with two fringed, ſpreading wings, and a long narrow lip: ſpur ſlender, very long [f]. Native of Amboina.

13. Stem round, ſtriated, ſheathed with leaves, erect, a ſpan high. Leaves alternate, ſheathing, enſiform, channelled, from erect ſpreading, ſtriated, ſmooth, nearly equal to the ſtem, the upper ones ſmaller, about five in number. Flowers alternate, about three, flowering ſucceſſively. Bractes lanceolate, acuminate, ſmooth, ſhorter than the capſule. Perianth three-leaved, equal, ſmooth, ſpreading, green: leaflets ovate, acuminate, concave, ſtriated. Corolla three-petalled, ſnow-white: the two upper petals equal, forming a helmet with the erect ſegment of the calyx, ovate, concave, with the outer margin flat; they are longer than the calyx: lower petal clawed, horned, plano-convex, three-parted: lateral ſegments dilated, ciliate, clawed, the middle ſegment lanceolate, entire, ſcarcely a line wide. Horn of the nectary cylindrical, in front, hanging down, greeniſh white, twice as long as the capſule. Anthers two, ſeſſile under the top of the ſtigma. Style very ſhort, thick. Stigma concave. Capſule ſubtrigonal, ſix-ſtriated, ſmooth, ſcarcely twiſted, half an inch long. Native of Japan: flowering in auguſt and ſeptember [g].

14. Stem tall, firm, having at the lower part two or three oblong, wide, liliaceous, embracing leaves, and ſome ſmaller leaves above. Spike not very long, compoſed of cluſtered flowers. Helmet ſmall and acute: lip hanging down forward, long, narrow, cut on both ſides into very narrow little jags, and as it were fringed: ſpur ſtretched out backward and very long: colour yellow [h].

It grows to two feet in height and more, with a ſtraight, ſtriated ſtem. The uppermoſt leaves are ſcarcely an inch in length and ſharp. Flowers pedicelled. Spur ſlender, an inch or more in length, recurved, hanging down. It was ſent by Baniſter from

[r] Hort. kew. [s] Linn. amoen. [t] Linn. ſpec.
[u] Hort. kew. [v] Linn. amoen. [w] Idem. [x] Linn. ſuppl.
[y] Idem. [z] Idem.

[a] Linn. ſuppl. [b] Browne. [c] Swartz.
[d] Jacqu. amer. [e] Linn. ſpec. [f] Herm. in Raii hiſt.
[g] Thunb. jap. [h] Raii hiſt.

Virginia [1]. Petiver informed Ray that it is of Maryland origin. Linnæus sets it down as a native of Virginia and Canada.

15. Bulb single, middle-sized, oblong, tomentose, with long, filiform, simple fibres above the bulb. Stem erect, leafy, from one to two feet high, simple, angular, smooth. Leaves sessile, alternate, sheathing at the base, ovate-lanceolate, acute, smooth and shining, three-nerved, netted-veined: sheaths closely surrounding the stem and smooth. Flowers in spikes, alternate, scattered, at a little distance, white. Among the flowers the stem is acute-angled. Spathes (bractes) under the flowers wide, keeled, three-nerved, smooth, green. Corolla five-petalled. Three petals exterior: the upper or middle one, which is the helmet, arched, erect, three-keeled, greenish white, smooth; two lateral somewhat turned back, ovate-lanceolate, keeled, green: two interior lateral, cloven at the base: the upper segments inclosed within the arched petal, of the same length; the lower segments filiform, much longer than the upper ones, spreading, white. Nectary behind under the helmet, arched; triangular in the middle, divided into cells at the sides, and in front divided into two long horns, between which a funnel-form passage opens into the horn of the germ. Filaments capillary, from the lateral cells of the nectary communicating by canals with the tips of the horns, and there glued to them. Anthers in the cells, filled with yellow globular pollen. Germ inferior, ellongated, three-sided, gibbous, hexangular. Style none. Stigma stretched out between the horns, behind the opening, convex, shining, mouthened. Lip of the nectary three-parted, inferted before the stigma and the horn of the germ: the middle segment lanceolate, acute, plano-convex; the lateral ones filiform, three times the length of the other, bent down: horn four or five times as long as the germ, roundish-compressed a little at the base, lanceolate at the end, and incipital, glued to the stem after flowering. Capsule large, three-winged, six-grooved, opening in the middle into six parts, cohering at the top. Seeds brittly. The flowers are very singular, and together with Orchis monorrhiza might perhaps constitute a separate genus.

Native of Jamaica in low meadows at the foot of the mountains [2].

16. Bulbs ovate, tapering to a point at the base, white within and without, thick fleshy fibres come out above them from the base of the stem [3]. One of these bulbs is always wrinkled and withered, whilst the other is plump and delicate. The first is the parent of the actual stem, the second is an offset, from the centre of which the stem of the succeeding year is destined to arise. Such is the mode of increase not only in this species, but in the other bulbed Orchises; and such are the means that nature uses not only to disseminate plants, but to enable them to change their place and thus to draw in fresh nutriment; for the second root is always about half an inch from the centre of the first, insomuch that in twenty years the plant will have marched ten inches from the place of its birth. The process is the same in the handed Orchises, or those species which have the bulbs divided and lengthened out like the fingers, and even in fibrous roots, for some of the fibres are continually rotting and perishing, whilst other young and tender ones are protruding, lengthening, increasing and preparing for the vegetation of the succeeding year. This mode of increase is particularly necessary in a family of plants that rises with great difficulty, and very seldom by seed [4]. We have no proof of the Orchis growing by seed, but we cannot account for the great increase of some of the species any other way. But to proceed with the description: stem a foot or eighteen inches high, smooth, six-angled, three ribs running down from each leaf. Leaves usually two, (sometimes three) springing from the root, ovate, blunt, tapering at the base, five or six inches long, and from two to three inches wide, smooth, pale green above, silvery beneath, marked with numerous parallel veins or nerves. On the stem are three or four lanceolate, sessile leaves, the lowest of which are longest. Flowers numerous in a long loose spike. Bractes lanceolate, acute, resembling the stem-leaves, much longer than the germ (of the same length according to Curtis, or a little longer as Pollich affirms; not longer than the germ, according to Scopoli.) Petals yellowish-white, or rather white with a tinge of green; the three exterior large, the middle one heart-shaped, obtuse, covering the hood, the two outer lanceolate, longer but narrower, patent and somewhat reflected, forming obtuse angles with the middle one: the two interior petals linear-lanceolate, small, converging over the hood, incurvated, so that their tips nearly touch, though the bases are distant: hood very open. Stamens bright yellow: anthers straw-coloured. Cases distant. Lower lip of the nectarium linear, narrow, entire, nearly as long as the germ, somewhat convex on the upper, and concave on the lower surface, whitish upwards, green towards the ends: horn almost as long again as the germ, slender, whitish upwards, the rest green, somewhat compressed, and broadest towards the end [5]. It is transparent, and shows the nectareous liquor with which it is often filled.—Retzius remarks, that there is no filamentous column properly so called, but a very large arched stigma, the cloven sides of which include the male parts: the stamens are entirely free, that is, not fastened to any thing, but concealed within the lateral cleft of the pistil, with the filament longer than the anther, furnished with a lateral petta vided towards the base.—Capsules ovate, triangular, yellowish, brown when ripe, smooth; having three longitudinal ligaments, which are loosened when the seeds are ripe; the seeds are then cast out through the longitudinal clefts; they are very minute and abundant [6].

This species has obtained the name of *bifolia*, on account of its radical leaves being usually two; three however are frequently met with: they are commonly said to be opposite, but they are not so strictly opposite as in *Ophrys ovata*. The English name of *Butterfly Orchis* is scarcely warranted by the appearance of the flower [7]: but some species of the order bearing a resemblance to bees and flies, the rest must needs be referred to some other animals. The smaller variety is named in Johnson's edition of Gerarde's herbal *Gnat Satyrion*. The flowers may be allowed to bear a general coarse resemblance to an insect; at least they approach it more nearly than those of *Ophrys anthropophora* and *Orchis militaris* do to the human figure.

Orchis conopsea having a very long spur or horn and spreading petals, as well as this species, Haller distinguishes it by the remoteness of the cells or cases in which the filaments are lodged.—It is obviously distinguished, says Mr. Curtis, by the colour of the corolla, the great length of the spur, (an inch long, widening at top and incipital) the delicious fragrance of its flowers, diffused chiefly in the morning and evening, and vying with that of the Honeysuckle, but above all by the unusual structure of its flowers: below the stigma, which is remarkably well defined in this species, there is a circular opening between the cavities containing the stamens, just above the stigma is a very conspicuous ridge, the cases containing the filaments are placed widely distant (as remarked above from Haller) and soon change to a brownish hue, the stamens are very loosely placed within them and drawn out with the slightest touch, the anthers are club-shaped and divided as in most others, the gland at the base of the filament is of a circular form, with a cavity on its inner side, and a kind of joint-like projection on its outer part.

The roots of this species being large, it appears to be as well calculated for making salep as any other.

This Orchis is not so common as some, is much more so than others, being found generally in woods, pastures and heaths, especially in soils somewhat stiff and moist. In dry pastures it is often so small as to be noticed for a variety [8]. It varies not only in size, but

[1] Mor. hist. [2] Swartz. [3] Woodw. Mss. and Pollich. [4] Villars. [5] Woodw. Mss. [6] Pollich. [7] Curtis. [8] Ibid.

in the shape and number of the leaves, the number of flowers, the length of the spur, and the time of flowering, which is later in the small one: but there does not appear sufficient reason, as Dr. Withering observes, for considering these varieties as really distinct; neither the height of the plant, the more or less ovate or lanceolate form of the leaves, nor yet the season of flowering or stations, affording any permanent distinctions.

Butterfly Orchis occurs in Norwood, Surrey; in Charlton-wood, and on Pens-common near Beckenham, Kent; Madingley-wood, Whitwell, Linton-wood, Balydon-hill, Kingston-wood, Gamlingay-wood, Cambridgeshire; Shotover-hill and Tar-wood, Oxfordshire; Short-wood near Pucklechurch, Gloucestershire; Envil in Staffordshire; woods and shady lanes in Leicestershire, common. It flowers in may and june.

17. Stem a foot and half high, leafy, round, upright, striated above the leaves. Lower leaves linear, sharpish, unspotted, the upper more inclined to lanceolate, springing from a sheath rendering the stem angular under the back of the leaf, four in number at most. Bractes lanceolate, acuminate, pale green, about the length of the flowers, the upper ones gradually shorter. The flowers have the same scent with O. odoratissima, only weaker. Germ twisted green. Corolla white.

Native of the mountains of Austria: flowering in august. The two outer petals, spread out like the wings of a bird in the act of flying: whence the name [a].

18. Root-leaves ovate. Scape a foot high. Leaves alternate, remote, sheathing, lanceolate, small. Flowers small, remote. Corolla resembling the papilionaceous, with the banner and wings whitish flesh-colour, wing-petals two, filiform, under the banner, and of the same length, keel or lip, very pale yellow with black dots, wider, imbricate-waved.—Native of the Cape of Good Hope [b].

19. Root-leaves two, ovate.—Native of Siberia [c].

20. Bulbs oblong, conical. Scape firm, a foot or eighteen inches high, leafy. Leaves lanceolate. Spike short, very much crowded. Bractes the length of the germ. Flowers frequently turned upside down, so that the lip turns to the base of the spike, and the helmet or hood recedes from it. The latter is formed of the three outer petals, bent round the stamineous column, ovate with an awn half the length of the petal, the end of which is wider and almost club-shaped. The two inner petals cover the stamineous scape, are wide, lanceolate, with a shorter awn. Lip short, three-parted, with the lateral segments quadrangular, the middle one wider, emarginate, with a spinule from the incision. The whole corolla bright purple with deeper spots on the lip. Spur a third part of the length of the germ [d].

According to Jacquin's description, it is from six inches to a foot in height, upright and elegant; leaves oblong; spike roundish; corolla purple flesh-colour, nectary dotted with red, horn blunt, half the length of the germ, lip trifid with blunt segments, the lateral ones quite entire, the middle segment trifid, the petals run out into a bristle widening at the top and blunt.

Villars observes, that the leaves are of an ash-coloured green, and more approximating to the stem than in the other sorts, spike very close and pyramidal, of a grayish red, each outer petal terminates in a thread in form of an antenna at the extremity, nectary short, the lower lip divided into three parts, the middle one wider and a little emarginate, flowers oblique not reversed.

Scopoli thus distinguishes it from *pyramidalis*, with which it has been confounded: spike blunt, oval, dense, and in a manner umbelled; leaves blunt, with the nerve ending in a point; petals tailed; breast of the beard neither eared nor spotted, with acuminate segments; spur not long. He says that it was first observed by Dalechampius.

Native of Germany, Austria, Carniola, Switzerland, the South of France and Italy.

[a] Jacquin. [b] Linn. amoen. [c] Linn. spec. [d] Haller.

21. Bulbs ovate. Stem from eight to fifteen inches high, round or slightly angular, smooth and firm, almost covered with leaves. Lower leaves sheathing the stem, lanceolate, very acute, pale green marked with numerous parallel veins and irregularly reticulated with cross ones; middle ones embracing the stem; upper sessile, closely converging, lanceolate but more obtuse than the lower, shining within and semitransparent, nearly covering the whole stem. Flowers numerous, (eighty) crowded in a short blunt cone, forming a most elegant termination to the stem, deep flesh-colour or pale purple. Bractes membranaceous, lanceolate, very acute, green with a tinge of purple, as long as the germ. Petals ovate-lanceolate, the middle of the exterior and the two interior converging, the exterior lateral ones spreading: hood of the nectarium very short, scarcely perceptible; cases of the anthers small. Stamens short, yellow; anthers green. Lip of the nectarium broad, with two oval gibbous prominencies at the top, and at bottom deeply divided into three nearly equal somewhat rounded lobes: spur awl-shaped, somewhat curved, longer than the germ: the spurs are all turned to the inside of the cone, so that the lips of the nectaria form a regularly imbricated outer surface to the cone [e].

Dr. Stokes remarks the silky glossiness of the leaves, which are linear-lanceolate: and Dr. Smith, that the bulging protuberances on the lip of the nectary give the distinguishing character of the species.

According to Linnæus, the stem is a palm high and jointed; leaves five or six, lanceolate, pointed, membranaceous; bractes lanceolate, coloured, as long as the germ; flowers purple, with ovate-lanceolate petals, three approaching, the two lateral ones spreading and bent back; lip two-horned, trifid, equal, quite entire; spur very long.

Scopoli says that the scape is a foot high, the helmet has spreading wings, the lateral segments of the beard crenulate, the spur scarcely longer than the germ, the pollen brownish, and that it differs from *conopsea*, in the roots, the shortness of the spike, and the pectoral auricles. These two longitudinal parallel concave rounded auricles on each side the base of the trifid lip are indeed the character that distinguish this species from all the rest, as observed above.

Ray remarks the same circumstance, as also that the corolla is sometimes white, which is the case with many other species that grow in a calcareous soil, as this does.

Mr. Woodward observes that Haller's figure being taken when the flowering was far advanced, the pyramidal form of the spike is lost; the figure in the third edition of Ray's synopsis represents it well.

Native of many parts of Europe, as Sweden, Belgium, Switzerland, Austria, Carniola, France, Italy, and Britain. With us about Harefield in Middlesex, Dartford in Kent, Stocking-wood in Leicestershire, Chesterton, Hinton, Devil's-ditch near Newmarket and Linton in Cambridgeshire, Whichwood-forest, between Woodstock and Enston, and on Caversham warren in Oxfordshire: also in Scotland. It flowers later than the other Orchises.

22. Bulbs orbicular, small, accompanied with strong fibres. Stem erect, a foot high, round, jointed, smooth, leafy. Leaves seven or eight, all sheathing, the lowest four inches long, the others gradually less, bright green, very smooth, five or six of them spreading, the others rolled round the scape. Spike close, from above an inch to two inches in length. Bractes lanceolate, the length of the germ. Helmet or hood three lines long, the five petals of which it is composed so closely joined as to seem three, acuminate, pale red; lower lip trifid, above two lines wide, reflex, the middle segment sharpish, quite entire, a line in width, the lateral ones crenulate, all green tinged with dusky purple; aperture white or reddish; horn blunt, the length of the germ [f]: or shorter, according to Linnæus.

The flowers smell like a goat according to some, and like a bug, according to others. Haller says, that

[e] Woodw. Mfs. [f] Pollich.

whilst

whilſt it is withering it ſtinks abominably. Native of Denmark, Germany, the ſouthern parts of Europe, and the Levant, in paſtures, flowering in june. Ray found it in flower on the 26th of may near Geneva, in the paſtures on the other ſide the Rhone.

This ſpecies is inſerted in Mr. Hudſon's catalogue, with a note that he never found it. Orchis barbata fœtida minor flore albo, *Jun.* 376. is not this ſpecies, but probably a variety only of Satyrium hircinum. Cluſius mentions, that he found an Orchis near London, with a ſpike of purple flowers which was extremely fetid, but Ray ſays he is ignorant what it could be, and that he never could find any thing of the ſort.

23. Root fleſhy, ſeeming to be obſcurely teſticulated, with capillary fibres at the baſe of the ſtem. Stem a foot and half high. Leaves towards the root four or five, alternate, ſheathing, lanceolate; the reſt of the ſtem without leaves, having about ten acuminate ſheathing bractes. Spike very narrow, naked, almoſt a ſpan long, with lanceolate bractes between the flowers, of the ſame length with them. Horn filiform, ſhorter than the germ. Upper lip equal, converging; lower three-parted, the middle ſegment ovate, the lateral ones filiform.—Native of the iſland of Ceylon[g].

24. Bulbs roundiſh, the ſize of hazel nut or of a nutmeg, one fixed to the baſe of the ſtem, and the other connected to the baſe by a fibre half an inch long, and the thickneſs of packthread, in the ſame manner as in O. bifolia; above them are lanugh ſpreading fibres. Stalk from ſix or ſeven inches to a foot or more in height, upright and leafy. Leaves embracing, lanceolate, marked with lines, glaucous, ſhining on the upper ſide, underneath ſilvery; the bottom ones for the moſt part turning back and variouſly contorted. Flowers few, from ſix to eight, ſeldom more than twelve, purple, ſitting looſely on the ſtalk. Bracte almoſt the length of the germ, purpliſh and incumbent. Petals cloſing ſo as to form a helmet or hood; the two outermoſt ſtrikingly marked with green parallel lines: lip broad, purple, whitiſh in the middle and dotted, having three lobes, of which the two ſide ones turn downward, the middle one is ſhorteſt with a notch in it; all are finely ſerrate: ſpur nearly the length of the germ, ſlightly notched at top, and tending upward. Anthers green, club-ſhaped, ſplitting into two lamellæ[h].

Mr. Woodward ſays the leaves are not ſpotted: according to Mr. Stackhouſe, they are ſometimes ſpotted in the ſpring, the ſpots growing paler as the flowers advance.

According to Mr. Woodward, it differs from the *maſcula* in being a lower plant, and the ſpike conſiſting of fewer flowers, the petals all blunt and converging, the three outer forming the hood and covering the lower ones, and always ſtriated with green veins, whatever may be the colour of the flower; the interior petals are alſo much ſmaller, the lip of the nectarium three-lobed nearly equal, the two outer lobes crenate, reflected and ſtriated with purple veins, the middle one notched and dotted upwards; horn broad and blunt, ſhorter than the germ. Anthers yellow. Flowers dark or pale purple, fleſh-coloured or white.

There is no ſpecies more variable in this reſpect, but in all the varieties it retains more or leſs ſtrongly, the green lines, which, as Ray obſerved long ſince, obviouſly diſtinguiſh this from all our other Orchides[i].

Retzius remarks, that it differs not only in the colour but the form of the flower; the lip of the nectary being inflex or flat, four-cleft, undivided, or ſlightly emarginate: the horn or ſpur alſo is blunt and gibbous, cylindric, compreſſed or ſubcompreſſed.

Mr. Curtis remarks that he has not heard of any one who has raiſed this or any other Orchis from ſeed, and that he cannot boaſt of having done it himſelf; yet that frequent obſervation almoſt confirms him in the opinion that they muſt be propagated from ſeed, for if this be not admitted, how ſhall we account for ſo many young plants being found together as are frequently obſerved? This entirely agrees with my own conjecture made above under *O. bifolia*, before I had ſeen what Mr. Curtis has advanced on the ſubject.

This has been ſaid to be the true ſort which produces the oriental Salep, but it is clear that more ſpecies than one are uſed for it, becauſe ſome of the roots imported in that drug are undivided, as in this, and others are palmated. Some of the other ſpecies have larger roots than this, and the quality of all appears to be the ſame.

O. morio grows in meadows that are moderately dry, ſuch as the Cowſlip is uſually found in, and ſometimes it is ſo abundant as to empurple the ſpot it grows on[k]. I have found great quantities of it on the balks and headlands of corn fields. It flowers in may and june.

25. Bulbs large, oval, both fixed to the baſe of the ſtem, which is about a foot high, round, ſmooth, upright, ſolid, above naked and purpliſh, below cloathed with ſurrounding leaves; theſe are lanceolate, alternate, broadiſh, the lower ones ſheathing at the baſe, ſpreading upwards, bright green and ſhining above, glaucous beneath, marked longitudinally with parallel veins, and uſually ſpotted with large brown or dark purple ſpots: the upper leaves cloſely ſheath the ſtem and are pale green. Flowers in a looſe ſpike, numerous. Bractes lanceolate, membranaceous, longer than the germ, (the length of the germ as Haller, ſhorter than the germ as Curtis and Relhan, of the ſame length or a little ſhorter, as Pollich affirms; according to Jacquin, the loweſt are twice the length of the germ, and the reſt are of an equal length with it,) pale purple, a little twiſted at the top. Flowers darker or paler purple, rarely white: covers of the ſtamens dark purple: petals lanceolate, acute, of the three upper the two outer are erect and reflected back to back, the middle one ſpreads and lies over the two lower ones, which are cloſely convergent, of a paler colour, and form an arched hood to the ſtamens: lip of the nectarium broad, dotted at the upper part, three-lobed, the outer ones roundiſh, crenate, the middle longer and notched at the end: horn as long as the germ, or longer, *Hall.* ſhorter, *Reik.* broadeſt and ſomewhat compreſſed at the point: mouth white. Anthers greeniſh, elaſtic like the reſt of the ſpecies[l]. As the plant advances towards maturity, the filaments in many of the Orchiſes hang out of their cafes towards the ſtigma, and when they are drawn out, at the baſe of each is a ſmall tranſparent globule, and at the top a club-ſhaped ſubſtance, moſt commonly yellow and granulated, which muſt be conſidered as the anther; in the microſcope it appears to be compoſed of cubic or irregularly quadrangular corpuſcles, united by fine elaſtic threads.

According to Linnæus, this is very cloſely united to *morio*, but the ſtem is as tall again; the flowers more numerous, the two petals on the back bent backwards, and not at all approaching to form a helmet or hood; the middle lobe of the lip is ſmalleſt.—Mr. Curtis remarks, that the ſpotted leaves and early bloom will in general be ſufficient to diſtinguiſh this ſpecies. If ſo, Pollich muſt have been miſtaken, for he ſays that it flowers in june, and that his ſpecimen had no ſpots on the leaves.

Haller obſerves, that the bulbs have a goatiſh ſmell and that it differs from *morio* in having the outer petals ſharper and longer, the cowl or hood looſe or wandering, the lip longer, with its middle ſegment produced farther beyond the lateral ones, without any green lines, the ſtem alſo is loftier, the leaves wider and ſpotted.

Retzius remarks, that this ſpecies is no leſs variable than the preceding; the lip of the nectary being entire, emarginate and more or leſs four-lobed; the horn conical or cylindrical.

The ſpikes of theſe flowers, ſays Lightfoot, are the *Long-Purples* or *dead men's fingers*, which helped to compoſe Ophelia's garland:

[g] Linn. mſſ. [h] Curtis. [i] Idem. [k] Curtis. [l] Woodw. Mſſ. and Curtis.

" There with fantastic garlands did she come,
" Of crow-flowers, nettles, daisies and *long purples*,
" That liberal shepherds give a grosser name,
" But our cold maid's do *dead men's fingers* call them."
Hamlet, Act 4.

The latter name would agree better with *O. latifolia* or *maculata* which have palmated or handed roots, divided and spreading out like the fingers, whereas this species has two solid roundish bulbs. I do not find the name of *Long Purples* in any of our old English herbals.

It is native of most parts of Europe, and is common in most parts of England in woods and meadows, flowering in april and may.

The roots abound with a glutinous slime, of a sweetish taste, and a faint somewhat unpleasant smell. This mucilaginous or gelatinous quality of the Orchis root has recommended it as a demulcent, and it is generally used in the same complaints as the roots of Althæa, and gum arabic.

Salep, which is imported from the East, and was formerly held in great estimation, is now well known to be a preparation of Orchis roots, as was first suggested by Mr. Joseph Millar, in his Botanicon officinale, 1722. This is the species commonly regarded as the officinal one, and it has place in the Materia Medica of the Edinburgh Pharmacopœia; other species however are employed in making Salep, and it should seem that they have all the same quality.

Mr. Mault of Rochdale has given the method of curing the Orchis root as follows: the new root is to be washed in water, and the fine brown skin which covers it is to be separated by means of a small brush, or by dipping the root in hot water, and rubbing it with a coarse linnen cloth. When a sufficient number of roots have been thus cleaned, they are to be spread on a tin plate, and placed in an oven heated to the usual degree, where they are to remain six or ten minutes, in which time they will have lost their milky whiteness, and acquired a transparency like horn, without any diminution of bulk. Being arrived at this state, they are to be removed, in order to dry and harden in the air, which will require several days; or by using a very gentle heat they may be finished in a few hours. The properest time for gathering the roots is when the seed is formed, and the stalk is ready to fall, because the new bulb is then arrived at its full maturity, and may be distinguished from the old one by a white bud rising from the top of it, which is the germ of the stem for the succeeding year[a].

Salep, considered as an article of diet, is accounted extremely nutritious, as containing a great quantity of farinaceous matter in a small bulk, and hence it has been thought fit to constitute a part of the provisions of every ship's company to prevent a famine at sea. For it is observed by Dr. Percival, that this powder, and the dried gelatinous part of flesh, or portable soup, dissolved in boiling water, form a rich thick jelly, capable of supporting life for a considerable length of time. An ounce of each of these articles, with two quarts of boiling water will be sufficient subsistence for one man a day. Dr. Percival not only recommends the use of Salep in diarrhœa, dysentery, dysury, and calculous complaints, but he thinks that in the symptomatic fever, which arises from the absorption of pus, from ulcers in the lungs, from wounds, or from amputation, Salep used plentifully is an admirable demulcent, and well adapted to resist that dissolution of the crasis of the blood which is so evident in these cases. The supposed aphrodisiac qualities of this root, which have been noticed ever since the time of Dioscorides, seem to be founded on the fanciful doctrine of signatures[b].

It is to be hoped, says Dr. Withering, that we shall no longer be supplied from foreign markets, with an article that our own country can supply us with in almost any quantity.

26. Bulbs oval. Stem from four to six or eight inches high, angular, almost hid by the upper leaves. Leaves four, five or six, bluntly lanceolate (more or less acute, *With.*) bright green above, whitish green beneath, shining, marked with numerous longitudinal veins or nerves. Flowers numerous (near forty) in a close short ovate spike. Bractes about two thirds of the length of the germ, membranaceous, faint purple with a dark keel, (rather shorter than the germ, *With.*—as long as the germ, *Relh.*). Petals all convergent, the three outer oval-lanceolate, acuminate, purple without, greenish white within; the two inner lanceolate, narrow; lip of the nectarium white with purple spots, very deeply divided into three lobes, the two outer patent, lanceolate, entire, or with one or two teeth, middle one longer, widening at the end, and divided again into two short lobes, with an intermediate point: horn very short, blunt and slightly curved, half as long as the germ: cafes of the anthers greenish white, close. Stamens very short. Anthers pale yellow[c].

Dr. Withering remarks that the middle segment of the lower lip of the nectarium has not always the intermediate or projecting point, and that he has not found the roughness on it, mentioned by Linnæus in the specific character.

The characters of the species, according to Scopoli are, that the flowers are small, becoming gradually so pale, that the lip and spur at length turn white; that the bractle is almost equal to the lip; that the stamineous machine is blunt, with white cells, and yellow stamens; and that the beard or lower lip is variegated with blood-red spots, one of which, next the throat, is larger than the rest.

Villars remarks, that this is one of the smallest species, the leaves narrow, glaucous or silvery, spike short, ovate, close, small, appearing blackish at the top, whence its name of *ustulata*, and bright red or whitish towards the base; this appearance is caused by the upper petals, which open last, being of a very deep colour on the outside, and of a bright red within, contrary to the usual case with flowers, which have commonly the colours lighter in the parts most exposed to the air: the spur or horn of the nectary is short that it might be taken at first sight for a *Serapias*: the lower lip has five lobes rather than three or four, for the middle division subdivides into two shorter, which have a little blunt very short appendix at their point of separation: the two lateral ones are shorter and oblong: both are whitish, marked with salient cogged spots of a very bright and pleasant red: petals open, lanceolate, whitish within, and of a very deep almost black red on the outside.

This elegant little plant is distinguished at first sight by its small dotted flowers. It is in great quantity on many of our downs, and affects a dry calcareous soil. About Harefield in Middlesex; on Gogmagog-hills, Devil's-ditch, Chippenham, Cambridgeshire; Barneck-heath, near Stamford, and between Stamford and Duddington in Northamptonshire; on Wick-cliffe, and on the Wiltshire downs, as on Salisbury-plain, particularly on the barrows near Stonehenge; on Burford-down and Caversham-warren in Oxfordshire. In flowers in may and june.

27. Bulbs somewhat oval. Stem about one foot high, round and smooth. Leaves about four, sheathing, acutely lanceolate, the three lower spreading, the upper one closely embracing, bright green with numerous parallel veins. Spike from one to two inches long, with numerous flowers. Bractes very short, membranaceous, oval but pointed, and terminated with an awn. Petals all convergent, three exterior large and broad, oval-lanceolate, acute, two interior narrow, linear or somewhat awl-shaped, all greenish white with purple lines: lip of the nectarium purplish, or white with purple dots, long and narrow, divided into three segments, the two outer near the upper part, linear, half as long as the lip, the lower again slightly divided into three, the two outer broader, rounded, slightly serrate, the middle one appearing like a spine: horn blunt, half as long as the germ: cafes to the anthers distant: anthers yellow[d].

[a] Philos. Trans. vol. 59. p. 2. Percival's Essays, 2. 53.
[b] Woodville.
[c] Woodw. Mss.
[d] Idem.

Meadows

Meadows and paſtures in a calcareous ſoil. Cawſham hills by the Thames ſide, not far from Reading, Berkſhire, and near the old chalk-pit by the paper-mill at Harefield; Caverſham-warren in Oxfordſhire.

β. Bulbs oblong, large. Lower leaves ovate-oblong, a little blunt, from two to three inches broad, gloſſy, ſcored, in ſome ſpecimens tranſverſely wrinkled, of a lively green colour; the uppermoſt narrower and ſurrounding the ſtalk. Stalk a foot, two feet, and ſometimes more in height, round, ſmooth, green below, purple above. Flowers numerous, cloſely imbricate, in a long ovate-cylindrical ſpike. Bractes very ſhort, ſcarcely the length of the ſpur of the nectary, ovate-acuminate. Petals cloſing and forming a helmet: the three outermoſt ovate, pointed, faintly three-ribbed, concave, marked with ſpots of a brownith purple colour running together, the two innermoſt much narrower, oblong, a little dilated towards the top, paler, marked alſo with purple ſpots. Spur of the nectary ſomewhat flattened, ſlightly bifid, ſcarcely reaching to the middle of the germ: lip large, broad, rough, with prominent purple dots, which as Haller juſtly obſerves, are little tufts of ſhort hairs, in flowers lately opened of a deeper purple colour, eſpecially on the edges, divided into four ſegments, the two uppermoſt of which are nearly linear and diverging, the two lowermoſt thrice as broad, diverging, the tips ſomewhat truncated, irregularly and finely notched, with a ſhort point for the moſt part between the two. Cafes of the ſtamens purple. Filaments yellowiſh. Anthers ſomewhat club-ſhaped, whitiſh. Germ roundiſh, twiſted, ſmooth, variegated with green and brown[1].

According to Dr. Withering the ſtem is from eight to twelve inches high; the ſpike about three inches long; the leaves ovate-lanceolate; the corolla varying much in colour, of a pale roſe red, with ſometimes a grayiſh caſt on the lip, and of a deeper purpliſh hue on the upper petals.

Mr. Curtis who, with Ray, Haller, Jacquin, Vaillant and others, makes this a diſtinct ſpecies, obſerves, that in expoſed aſpects its uſual height is about nine inches; in woods and coppices where it is more ſheltered, and where the ſoil is richer, it will acquire the height of two feet or more: ſuch ſpecimens ſurpaſs every Britiſh Orchis; its flowers vary exceedingly in colour, ſome being of a light, others of a deep purple colour; now and then one wholly white occurs: the lip of the nectary varies alſo in breadth. Both root and flowers ſend forth a ſtrong ſmell, ſomewhat like, but not ſo pleaſant as Anthoxanthum. Dr. Smith remarks that all the varieties ſmell like new hay.

Orchis fuſca is found on chalky banks, abounding in Milkwort and Juniper, near woods, and in the woods themſelves, in many parts of Kent, eſpecially about Rocheſter, near Northfleet, &c. It flowers early in May, and in forward ſeaſons at the cloſe of april, with early ſpotted Orchis, Cowſlip and Harebell[2].

It does not appear to Dr. Withering that theſe can well be made diſtinct ſpecies. The colours are conſeſſedly variable, and the lower lip may be deſcribed as three-cleft, conſidering the middle ſegment as notched, with a projecting point in the notch; or as five-cleft, when this little projecting point muſt be reckoned as one of the ſegments: the upper petals are confluent, and the lip dotted: the greater or leſs breadth of the middle ſegment of the nectary is the principal difference.

28. This has the ſtature of O. militaris, and almoſt the ſame flower; but the lip is very large, the full ſize of the thumb nail, wider than its length, retuſe or emarginate, undivided, toothleted, purple as the flower is[3].

Scopoli ſays, that the ſcape is ſcarcely half a foot in height; ſpike few-flowered (two or three) red. Flowers marked with lines: petals converging: lip ovate, toothletted, blunt: ſpur converging, acute, ſhorter than the germ and lip. Bracte wide, red, longer than the germ and lip.

Native of Spain and Carniola.

β. O. rubra. This beautiful plant is a variety of Linneus's papilionacea, with a ſmaller lip. Jacquin deſcribed his *rubra* from a bad drawing ſent him from Rome, with the petals too much expanded. Dr. Smith, who makes this obſervation, found it flowering on the ſecond of april, in the garden of the Villa Borgheſe near Rome.

29. Stature of *moria*, appearance of *ſambucina*, but the bulbs not palmate. Flowers yellow: lip deeper yellow, unſpotted, trifid, quite entire, middle ſhorter, emarginate: horn of a middling length, ſubemarginate, aſcending[4].

Hallen obſerves that it agrees in many circumſtances with *incarnata*, which he makes the ſame with *ſambucina*; that the root-leaves are two inches wide; the ſtem naked, and ſcarcely a long ſpan in height; the ſpike is thin and few-flowered; bractes yellowiſh, ſhorter than the germ. Petals turned up and bent back: uppermoſt ovate, marked with three lines bending itſelf over the ſtaminoeous cape; the two lateral ones ſtraightiſh, ovate-lanceolate, blunt, divided by three lines, pale yellow; inner petals yellow, wider and blunter than in *moria*, divided by one green line; lip yellow, trifid, convex, villoſe at the opening, the lateral ſegments ſmaller than in *moria*, the middle one ſhorter, wider, emarginate, but not toothed, as in *moria*; ſpur more ſlender, almoſt the length of the germ, bowed back upwards at the end: it has no ſpots.—The leaves are wider than in *moria*, the lines of the petals fewer, the fourth and fifth petal wider, with a longer ſpur, curved up, and the lip not ſerrate. It ſmells like the urine of cats. Villars found it to be perfectly like that of the freſh flowers of Elder, inſomuch that he took it for the *ſambucina*, till he inſpected the roots.—He remarks that the bulbs are round and unequal, the leaves tender wide upright and pointed, the ſtem ſix or eight inches high, ſpike yellow oblong irregular, with the flowers inſulated, nectary ſlender, cylindrical, the length of the germ, lower lip divided into three equal lobes, the extremity of which is ſuddenly rounded; upper petals open and reflected. This ſort is nearly allied to O. maſcula, but the flowers are more inſulated, more rounded at the end, and have an ill ſmell, which that has not.

Native of Switzerland, Auſtria, Dauphiné, Italy.

30. The whole plant is hiſpid, the ſize of O. Monorchis. Root-leaves two, kidney-form, embracing. Scape half a foot high. Spike directed one way, with minute flowers. The three outer petals calyx-formed, ovate, villoſe: the two inner linear, ſmooth, double the length of the others: lip of the nectary divided into five linear ſegments: horn curved in, the length of the flower.

Native of the Cape of Good Hope, where it was found by Sparrmann.

31. Raceme large, many-flowered. Flowers large, pure white. Found at the Cape by Thunberg.

32. Bulb generally ſingle, ovate, villoſe, the ſize of a pigeon's egg; a few fungoſe villoſe fibres iſſue from the baſe of the ſcape, near its inſertion into the top of the bulb. Leaves from four to eight, radical, preſſing on the ground, ſmooth, deep ſhining green, ſomewhat fleſhy, many-nerved, about four inches long, and three broad. Scape erect, about a foot and half high, including the flower-bearing part, about as thick as a gooſe quill, round, ſmooth, at every inch and half or two inches having a lanceolate leafy ſheath. Spike four to ſix inches long, every where ſurrounded with flowers, which are ſolitary, white and fragrant. Bractes lanceolate, nerved, as long as the germ. The three exterior petals nearly equal; two interior ſmall, obliquely oblong, erect. Upper lip of the nectary ſhort, under-three-parted: middle diviſion long, narrow, pointed, recurvate. Horn nearly twice the length of the germ, perpendicular, or nearly ſo.

Native of Coromandel, in moiſt valleys among the hills; flowering in the rainy ſeaſon[5].

Species with divided or palmated bulbs.

33. Bulbs broad and flat, divided into a few fingers, which ſometimes run out into a long fibre, ſtanding

[1] Curtis. [2] Linn. ſpec. [3] Linn. mant. [4] Roxburgh.

downwards; ſeveral ſhort thick fibres alſo ſhoot out laterally from the top of the bulbs. Stem about a foot (or eighteen inches) high, ſmooth, hollow, ſomewhat angular towards the top. Leaves five or ſix, alternate, ſheathing the ſtem to the ſpike, acutely lanceolate, keeled and marked with parallel veins, pale green, rarely ſpotted, and when ſo, very obſcurely. Bractes much longer than the flowers, reſembling the uppermoſt leaves, acutely lanceolate, green, ſometimes with a tinge of purple. Flowers very numerous (forty), in a cloſe ſomewhat conical ſpike, for the moſt part roſe or fleſh-coloured with us, often purple, rarely white. Petals lanceolate, the two outer of the upper ones reflex; the middle one and the two inner converging; lower lip of the nectarium obſcurely three-lobed, ſerrate, middle lobe longeſt, narrow and ſomewhat pointed, marked with dots and lines, forming a regular figure, following the form of the lower lip. Spur ſhorter than the germ, regularly conical*, blunt, incurved. Anthers roundiſh, club-ſhaped, yellowiſh green*. Germ twiſted.

There are ſome variations in the ſegments of the lip of the nectary, as obſerved by Retzius in *morio* and *maſcula*; whence Dr. Stokes has noticed three varieties of this Orchis*.

Linnæus diſtinguiſhes this ſpecies from *maculata*, by its bractes longer than the flower, the want of ſpots on the leaves, and its hollow ſtem.—With us the leaves are ſeldom ſpotted; or if at all, obſcurely; Villars ſays that they are frequently ſpotted in Dauphiné, but leſs than in *maculata*. According to him, the ſpur is longer than the germ, if it be obſerved during the time of flowering; for after that time the germ lengthens, and the nectary is then the ſhorteſt. This obſervation of Monſ. Villars is well founded, and has not been ſufficiently attended to.—He deſcribes the lower lip as almoſt entire, wider than its length, divided into three lobes, of which the middle is the ſmalleſt, often toothed, of the ſame length with the lateral lobes, which are turned back.—He remarks that the old authors have abundance of figures and ſynonyms of this Orchis; that Haller has collected a hundred of them, which is not half the number.

Haller compares this ſpecies with *maculata* which it moſt reſembles, but the leaves are wider; the ſtem ſoft, hollow, and lower, the bractes longer than the flowers, and giving the ſpike a peculiar and leafy appearance, flowers larger, the ſpots and lines on the lip not ſo regular.

Native of Europe in wet meadows and marſhes, commonly with Valeriana dioica, Menyanthes trifoliata, and Lychnis Flos Cuculi: flowering towards the end of May. Loureiro found it alſo in Cochinchina.

34. This very much reſembles the preceding; but the leaves are pale green and unſpotted, not dark green and ſpotted; the ſtem is ſhorter by half; the bractes are ſcarcely longer than the flower or germ; the corolla is pale fleſh-coloured, not red; the two dorſal petals are quite bent back, not merely ſpreading, nor are they ſpotted*. Our *latifolia* has pale green leaves, rarely ſpotted, and the corolla is frequently pale fleſh-colour. The *incarnata* however is probably no more than a variety of the *ſambucina*, as Haller, Scopoli and Villars have inſiſted.

35. This is eaſily diſtinguiſhed from *O. latifolia* by its having few flowers, the ſtem leafy only below the middle, the bractes by no means longer than the flowers, the leaves not at all ovate-lanceolate, but almoſt tongue-ſhaped, as in *O. maculata*, from which it is alſo very diſtinct in the fewneſs of its flowers, the want of notches in the lip, the greater length of the horn, the having no ſpots on the leaves, the roots leſs divaricated, and the whole habit. It is different from all the ſpecies in the ſtructure of its fructification, the yellow colour of the flowers varying to purple, its ſtation in wet places on mountains, and in flowering very early with Corona Imperialis*.

Scopoli cannot diſcover any mark in the long deſcription given by Linnæus in the Flora ſuecica of the *ſambucina*, by which it can be diſtinguiſhed from his *latifolia*. We may conclude therefore that his *latifolia* is the ſame with the *ſambucina* of Linnæus, and probably his *conopſea* is our *latifolia*.

Villars ſays that this ſpecies differs from *latifolia*. 1. In having the bractes ſhorter than the flowers. 2. The lower lip almoſt flat or very little convex, whereas the lateral lobes are turned back in the other. 3. The nectary blunter and ſhorter. 4. The lateral petals raiſed very much as if they were broken, inſtead of being carried forwards and a little open.

The ſtem is about half a foot high, thick and ſolid; the flowers red and purple in the *incarnata*, yellowiſh-white in this.

Native of ſeveral parts of Europe, but not of Britain. It has the ſmell of Elder flowers, whence the name.

36. Bulbs palmated, compreſſed, with the ſegments much divaricated. One of them, according to Linnæus, floats in water, and nouriſhes the ſtem, the other ſinks and bears the bud for the next year. But with us it does not grow in water, only ſometimes in moiſt meadows. Stem ſolid, from ſeven or eight to eighteen inches high, the lower part round, the upper ſomewhat angular. Lower leaves embracing the ſtem, loweſt conſtantly ſhort, broad and blunt, the next conſiderably longer, bluntly lanceolate, above theſe more acutely lanceolate, upper ones very narrow and apparently ſeſſile, but the margins are decurrent, whence the angular appearance of the ſtem; beneath they are ſilvery green, with parallel green nerves, above pale green, often partially covered with the ſame ſilvery ſkin, marked with numerous reddiſh brown ſpots, moſtly oval and tranſverſe, but ſometimes irregular. Flowers numerous (forty) in a cloſe conical ſpike. Bractes acutely lanceolate, much longer than the germ, (or, according to Dr. Stokes, the lower longer, the upper ſhorter than the flowers;) purpliſh, if the upper part of the ſtem be ſo, but green, if this be green. Corolla uſually pale purple: petals acutely lanceolate, the three outer patent, ſometimes ſpotted, the two inner converging: lip of the nectarium deeply trifid, outer ſegments angular and notched, middle one longeſt narrow and lanceolate, all marked with purple ſpots and lines: horn rather blunt, ſhorter than the germ: (or of the ſame length, *Relh.*) cafes of the ſtamens dark purple, ſtanding cloſe: ſtamens very ſhort: anthers green.—This is readily diſtinguiſhed from the *latifolia* by the ſolid ſtem, the lower leaf always very blunt, the ſpike conical, which in the other is ſomewhat cylindrical, and in flowering later*.

It varies with white flowers, and the leaves are ſometimes not ſpotted*.—Orchis maſcula and morio, and ſometimes latifolia having ſpotted leaves, confuſion has hence ariſen, by giving too much attention to the trivial name of this ſpecies*.

Native of moſt parts of Europe in moiſt meadows and woods; ſometimes in barren paſtures, when the ſpike is only half the ſize, and has fewer flowers*. It flowers in June and July.

37. This is not a variety of O. conopſea, though they agree in many circumſtances. The ſtem is harder, the leaves are hard and ſtiff, pointing upwards, linear, four or five inches in length. Stem from a foot to eighteen inches in height. Bractes longer than the germ, with a long awn. Flowers pale or bright purple: the three outer petals ſpreading, the middle one almoſt ſtraight, ovate, ſomewhat ſerrate, the ſide ones tranſverſe, ſomewhat lanceolate: the two inner petals ſhort, lanceolate, ſlightly ſerrate, bent about the ſtamineous column, which they cover: lip ſmall, ſhorter than the uppermoſt petal, almoſt equally and not deeply trifid, the middle ſegment wider, moderately acuminate, the lateral ones a little narrower: ſpur ſhorter than the germ, widiſh, mucronate: ſtamineous column ſhort: anthers yellow. It has a ſingular, pleaſant, ſtrong ſmell.—The ſpur is only half the length of that in *O. conopſea*, but wider,

* Woodw. Mſ. * Curtis. * Wither. arr.
* Linn. ſuec. * Idem. * Woodw. Mſ. * Lightfoot. * Withering.
* Ray.

the

the petals ſerrate, the lip longer but not ſo wide, the middle ſegment more produced, and it is of a firmer habit[a].

The palmate bulbs are elongated in an irregular manner, the leaves are narrow, the ſpike of flowers is oblong, pale red mixed with white, the nectary of the ſame length with the germ, the lower lip three-lobed, the two ſide ones truncated, nearly equal, and as long as the middle one[b].

Native of France, Germany, Switzerland, Auſtria, Italy; Sweden alſo and Norway but rare.

38. Bulbs palmated, compreſſed. Stem twelve to eighteen inches high, ſmooth and firm, round below, angular upwards; lower leaves ſheathing the ſtem, long, narrow, and acutely lanceolate, bright green, ſhining, keeled, with a ſtrong midrib, on each ſide of which are two or three faint veins and one ſtrongly marked. Lower ſtem-leaves embracing, upper ſeſſile, lanceolate, acute, decreaſing in ſize till they reſemble the bractæ. Flowers fleſh-coloured or pale purple, (forty-two) in a looſe ſpike, three inches long. Bractæ lanceolate, acuminate, longer than the germ, herbaceous; the middle of the exterior, and the two interior petals oval-lanceolate, cloſely converging, their tips inflected and covering the ſtamens; the two exterior lanceolate, patent at right angles to the tip of the nectarium, which is ſhort and broad, and divided into three roundiſh ſegments, the middle one rather broadeſt and longeſt. Spur awl-ſhaped, curved, full of juice, ſemitranſparent, much longer than the germ. Stamens ſhort, with two gibbous fleſhy prominencies at their baſe: anthers greeniſh: opening of the ſtigma very apparent. Flowers ſmelling very ſweet[c].

It has ſome reſemblance to O. pyramidalis, from which it is diſtinguiſhed by the root, the narrowneſs of the leaves, and the length of the ſpike, as it is ſufficiently from every ſpecies of this diviſion by the great length of the horn of the nectary. The flowers are ſometimes white.

Native of many parts of Europe in meadows and paſtures; flowering in june. Hareſield in Middleſex, Aſply in Nottinghamſhire, King's hedges, Cheſterton, Hinton, Triplow, Devil's ditch, Cambridgeſhire, rough paſtures adjoining Cowley common in Oxfordſhire, on the Wiltſhire downs, paſtures under Shortwood near Pucklechurch, Gloceſterſhire, Knutsford moor, Cheſhire, in a moraſs near Leeds, near Auchin Dewney ſeven miles from Edinburgh, and abundantly on the hilly grounds north of the river Leven, Dunbartonſhire. In the moiſt heathy ground of Newton park, Ireland.

39. Lower leaves palmary, lanceolate, large. Spike narrow. Flowers obſoletely yellow. Native of Virginia[a].

40. Native of Siberia.

41. Stem a ſpan high. Leaves lanceolate-linear, alternate, the lower ones longer. Spike leafy. Upper lip trifid; lower obcordate, two-lobed. Horn of ſpur ſlender. Native of the iſland of Ceylon[b].

42. Stem a palm high with the Spike. Leaves alternate, lanceolate, the length of the ſtem. Spike ovate, with linear-lanceolate bractes, the length of the flowers. Corollas yelloviſh-green: uppermoſt petal wider, ovate; the two upper lateral ones lanceolate, converging to the firſt; the two lower lateral ones oblong: lip ſcarcely longer than the petal. Native of Iſland: found by Koenig[a].

43. Roots compoſed of thick horizontal fibres wrinkled tranſverſely. Stem ſtraight, upright, eighteen inches or more in height, blue or violet, leafleis but ſheathed with ſcales. Flowers in a very long thin ſpike, violet. Bractes the length of the germ. Spur conical, ſlightly curved, acutely pointed, longer than the germ: the lower lip oval and entire, which diſtinguiſhes this plant clearly from O. nidus avis, that has this lip prolonged and cloven, with the ſegments at right angles. Fruit the largeſt of any in the Orchis tribe[b].

[a] Haller. [b] Villars. [c] Woodw. Mſs.
[a] Linn. ſpec. [b] Linn. ſuppl. [a] Linn. mant.
[b] Linn. Villars, Woodw. Mſs. Haller.

Native of France, Germany, Switzerland, Auſtria, Norway. Mr. John Goodyer is ſuppoſed to have found this in the border of a field called Marborne, near Habridge in Haliborn, a mile from Alton in Hampſhire; the 29th of june 1624. He deſcribes the ſtalk as nine inches high, with a few ſmall ſharp-pointed ſhort ſkinny leaves ſet without order, very little or nothing at all wrapping the ſtalk, having a ſpike of flowers like thoſe of Orobanche, without tails or leaves growing amongſt them. The lower part of the ſtalk within the ground is not round like Orobanche, but ſlender or long, and of a yelloviſh white colour, with many ſmall brittle roots growing underneath confuſedly, folded together like thoſe of the common Nidus avis. The whole plant as it appears above ground, is of a violet or deep purple colour[a]. It has not been ſince found by any perſon, ſo that it is yet a doubtful native of Britain.

44. Stem upright, ſmooth, from ancipital acutely four-cornered. Leaves on the ſtem from three to five, alternate, ſeſſile, acute, ſmooth, quite entire, nerved, keeled, ſheathing at the baſe, two inches long. Spike ovate-oblong, many-flowered. Flowers blue-purple. Bractes lanceolate, nerved, a little longer than the germs. Petals flat, equal in length, three lines long; the uppermoſt or dorſal petal ovate, obtuſe, erect; the two outer lateral ones ovate, acute, ſpreading very much; the two inner lateral ones oblong, obtuſe, next the dorſal petal erect, below the middle dilated, and there toothletted, attenuated at the baſe: lip of the nectary a little longer than the petals, the diviſions wide, wedge-form, equal, flat, ſubdivided in the middle into awl-ſhaped ciliæ; the ſide ones divaricated, the middle one ſpreading. Germ half an inch long.

Native of Canada and Newfoundland. Introduced in 1777, by William Pitcairn, M. D. It flowers in july[a].

45. This has the habit of Orchis maculata. Stem with linear, acuminate, ſcattered leaves on it. Spike long, cloſe. Petals converging; the three outer ovate, the two inner oblong, ſubciliate. Lip reflex, the ſegments very narrow at the baſe, wedge-form, ciliate at the tip. Native of North America[a].

46. Root-leaves two, oval, petioled, blunt, almoſt the length of the plant. Spike of five or ſix flowers. Bractes lanceolate-oval, the length of the germ. The two outer petals of the flowers ſpreading a little, green; three converging and more tender: lip oval, emarginate, with the tips divaricating. Native of Virginia[a].

47. Stem half a foot high and more, ſomewhat flexuoſe. Root-leaves very many, linear, acute, ſhort: ſtem-leaves lanceolate, acuminate. Spike of eight or nine flowers, remote; germs clothed with bractes: uppermoſt petal pedicelled, arched, oval-oblong; the lateral ones ſeſſile, riſing up: nectary within the flower erect, turbinate, cowled; upper lip bifid, obtuſe, lower the ſame; horn capillary, hanging down, the length of the petals.

Native of the Cape of Good Hope, where it was found by Thunberg[a].

48. Root-leaves lanceolate-ovate, petioled. Scape leafleſs, except that there is a ſmall lanceolate leaf in the middle. Flowers alternate in an oblong ſpike: upper lip three-leaved, ovate; the middle leaf longeſt, lower lip a little longer, three-parted, almoſt equal, with linear ſegments: horn ſix times as long as the petals. Native of Kamtſchatka[a].

49. Stem ſomewhat angular, ſmooth, a ſpan high. Leaves alternate, half embracing, lanceolate, ſomewhat keeled, entire, ſmooth, longer than the internodes, about ſix, a finger's length; the upper ones narrower and ſhorter. Flowers in ſpikes, ſnow white, very many. Bractes lanceolate, the length of the flower. Perianth three-leaved: upper dorſal leaf ovate, concave, erect, entire, two lines long; the two lower lateral, ſubtriangular, concave, hanging down, the ſize of the upper one. Corolla three-

[a] Ger. emac. [b] Hort. kew. [c] Linn. ſpec.
[a] Idem. [b] Linn. ſuppl. [a] Idem.

petalled:

petalled: the two upper petals lateral, lanceolate, erect, forming a helmet, the length of the calyx; the lower two-horned; upper horn or lip cylindrical, a little attenuated, hanging down; the lower cylindrical, gradually attenuated, hanging down, recurved, three times as long as the capsule. Anthers ſeſſile, ovate, white, inſerted into the ſtigma. Pollen pedunciled, granulated, yellow. Stigma concave. Native of Japan, near Miaco; flowering in June.

50. Root-leaves ſeveral, equitant, enſiform, convoluted, revolute-ſickled, ſmooth, a finger's length, the lower ones ſhorter. Scape erect, ſmooth, ſhorter than the leaves. Flowers in ſpikes. Horn of the nectary curved, an inch long.

Native of Japan, near Nagaſaki, in the mountains, among ſhrubs.]

PROPAGATION AND CULTURE.

All the ſorts of Orchis for the ſingularity and beauty of their flowers, deſerve a place in every good garden; and the reaſon for their not being cultivated in gardens, proceeds from their difficulty to be tranſplanted; though this, I believe, may be eaſily overcome, where a perſon has an opportunity of marking their roots in their time of flowering, and letting them remain until their leaves are decayed, when they may be tranſplanted with ſafety; for it is the ſame with moſt ſorts of bulbous or fleſhy-rooted plants, which, if tranſplanted before their leaves decay, ſeldom live, notwithſtanding you preſerve a large ball of earth about them; for the extreme parts of their fibres extend to a great depth in the ground, from whence they receive their nouriſhment; which, if broken or damaged by taking up their roots, ſeldom thrive after; for though they may ſometimes remain alive a year or two, yet they grow weaker until they quite decay; which is alſo the caſe with Tulips, Fritillarias, and other bulbous roots, when removed, after they have made ſhoots; ſo that whoever would cultivate them, ſhould ſearch them out in their ſeaſon of flowering, and mark them; and when their leaves are decayed, or juſt as they are going off, the roots ſhould be taken up, and planted in a ſoil or ſituation as nearly reſembling that wherein they naturally grow, as poſſible, otherwiſe they will not thrive, ſo that they cannot be placed all in the ſame bed; for ſome are only found upon chalky hills, others in moiſt meadows, and ſome in ſhady woods, or under trees; but if their ſoil and ſituation be adapted to their various ſorts, they will thrive and continue ſeveral years, and, during their ſeaſon of flowering, will afford as great varieties as any flowers which are at preſent cultivated.

[Theſe plants, ſays Mr. Curtis, multiply themſelves very little, the ſmall increaſe they make appearing to be from off-ſets, that hitherto we have no ſatisfactory proof of their being propagated from ſeed; yet the ſeed-veſſels in many of them are large, well-formed, and filled with ſeeds, which though extremely minute appear perfect. The ſmallneſs of the ſeed is certainly no argument againſt its vegetating; ſome of the Ferns whoſe ſeeds are much ſmaller are now well known to be propagated from ſeed; and it is moſt probably owing to a want of minute attention, that the progreſs of Orchis ſeedlings has not yet been obſerved. Such as are diſpoſed to doubt the vegetative power of theſe ſeeds may perhaps urge that their barrenneſs is owing to their not being properly impregnated, the anthers in this tribe appearing to be different in their ſtructure from thoſe of other plants, and not containing, ſo far as we have yet been able to diſcover, any ſimilar pollen.

Mr. Salisbury of Chapel Allerton near Leeds in Yorkſhire, a very eminent botaniſt and ſkilful cultivator of rare exotic plants, has raiſed abundance of young plants from the ſeeds of the ſplendid Limodorum Taukervilliæ, ſo long ſince as the year 1785 or 1786. This is perhaps the firſt inſtance of the kind among the Orchis tribe[s], and may encourage ſkilful cultivators to try the experiment on ſome of the other genera.]

[r] Thunberg. [s] Smith's tour, 1. 32.

ORCHIS. See [*Aletris*, *Arethuſa*, *Cypripedium*, *Epidendrum*] *Ophrys*, *Satyrium*, *Serapias*.

[Orchis burmanniana.—O. peſtinata. *Thunb.* See *Arethuſa ciliaris*.

OREGA. See *Origanum*.

ORELIA. See *Alamanda*.

ORELLANA. See *Bixa*.]

OREOSELINUM. See *Athamanta*.

[OREOTA. See *Mimoſa*.

ORIBASIA. See *Pſychotria*.

Origano cognata. See *Origanum*.]

ORIGANUM. *From* ορος, *mons*, *and* γανος *lætitia*: *the delight of the mountain*. Origanum *of Pliny*, Οριγανον *of Theophraſtus and Diſcoridet.*)

Lin. gen. n. 726. *Reich. n.* 784. *Schreb. n.* 981. *Tournef.* 1. 64. *Juſſ.* 115.

Claſs. 14. 1. Didynamia Gymnoſpermia.

Nat. order of *Verticillatæ*. *Labiatæ* Juſſ.

GENERIC CHARACTER.

CAL. *Involucre* ſpiked: compoſed of imbricate, ovate, coloured bractes. *Perianth* unequal, various.

COR. one-petalled, ringent: *tube* cylindrical, compreſſed: *upper lip* erect, flat, blunt, emarginate: *lower* trifid, the ſegments almoſt equal.

STAM. *Filaments* four, ſubform, the length of the corolla, of which two are longer. *Anthers* ſimple.

PIST. *Germ* four-cleft. *Style* ſubform, inclined to the upper lip of the corolla. *Stigma* very ſlightly bifid.

PER. none. *Calyx* converging, ſoſtening the ſeeds at bottom.

SEEDS four, ovate.

OBS. *The involucre of the calyx conſtitutes the eſſence of the genus.*

The Perianth in ſome almoſt equal, five-toothed; in others bilabiate, the upper lip large, entire, the lower ſcarcely any; in others two-leaved.

Origanum T. *Flowers ſolitary each from its proper ſcalelet. Calyx five-toothed.*

Majorana T. *Flowers in an imbricate four-cornered head. Calyx two-leaved.*

Dictamnus *of Ray and Bauh.* Amaracus *Gled. Flowers in a looſe imbricate head. Calyx labiate. Tube of the corolla ſpurred or gibbous.*

ESSENTIAL CHARACTER.

Strobile four-cornered, ſpiked, collecting the calyxes.

SPECIES.

1. Origanum ægyptiacum. *Egyptian Marjoram.*
Lin. ſpec. 822. *Reich.* 3. 76. *Haſſelqu. it.* 479. *ed. angl.* 251.
Majorana rotundifolia ſcutellata exotica. *Tourn. inſt.* 199.
Origano cognata Zatarhendi. *Bauh. pin.* 223. *Mor. hiſt.* 3. 360. *ſ.* 11. *t.* 3. *f. ult.*
Zatarhendi. *Alp. exot.* 94. *t.* 95.
Leaves fleſhy tomentoſe, ſpikes naked.
2. Origanum Dictamnus. *Dittany of Crete* or *Candia.*
Lin. ſpec. 823. *Reich.* 3. 76. *hort. cliff.* 304. *mat. med.* 150. *Knip. cent.* 4. *n.* 58. *Ludw. edit.* 1. 134. *Blackw. t.* 462. *Sabb. hort.* 3. *t.* 76. *Regn. bot. Curt. magaz.* 298. *Linn. cochinch.* 373.
Dictamnus creticus. *Bauh. pin.* 222. *Park. theat.* 27. 1. *Raii hiſt.* 537.
Dictamnum creteuſe. *Cam. epit.* 472.
Dictamnum. *Lob. ic.* 502.—creticum. *Ger.* 651. 1. *emac.* 797. 1.
Dictamnus cretica f. vera. *Bauh. hiſt.*
Lower leaves tomentoſe, ſpikes nodding.
3. Origanum ſipyleum. *Dittany of Mount Sipylus.*
Lin. ſpec. 823. *Reich.* 3. 77. *hort. cliff.* 304.
O. montis ſipyli. *Herm. lugd.* 462. *t.* 463.
O. ſpicatum. mont. ſipyli, foliis glabris *Whyteri. Raii hiſt.* 540.
Dictamnus ſipyleus, majoranæ foliis. *Mor. hiſt.* 3. 357. *ſ.* 11. *t.* 4. *f.* 2.
Leaves all ſmooth, ſpikes nodding.
4. Origanum Tournefortii. *Dittany of Amergos.*
Ait. hort. kew. 2. 311.
O. hybridum. *Mill. dict. n.* 12.

O. Dictamnus

O. Dictamni cretici facie, folio craſſo, nunc villoſo, nunc glabro. *Tourn. cor.* 13. *it.* 1. 240. *fig. ed. ult.* 1. 285.
Spikes four-cornered, braktes roundiſh very large.

5. Origanum creticum. *Cretan Marjoram.*
Lin. ſpec. 823. *Reich.* 3. 77. *mat. med.* 151. *Hall. helv. n.* 234. *Gron. orient.* 75. *Amoen. acad.* 1. 160. *Lour. cochinch.* 373.
O. creticum. *Bauh. pin.* 223. *Bauh. hiſt.* 3. 238. *Raii hiſt.* 540. *Mor. hiſt.* 3. 260.
β. O. folio ſubrotundo. *Bauh. pin.* 223.
O. monſpelienſe pulchrum. *Camer. epit.* 468. *Bauh. hiſt. Raii hiſt.* 540.
Spikes aggregate long prismatic ſtraight, braktes membranaceous twice as long as the calyx.

6. Origanum ſmyrnæum. *Smyrna Marjoram.*
Lin. ſpec. 823. *Reich.* 3. 77. *hort. cliff.* 304. Wheeleri. *Raii hiſt.* 540.
Majorana cretica, Origani foliis, villoſa, Satureiæ odore, corymbis majoribus albis. *Tournef. cor.* 13.
Leaves ovate acute ſerrate, ſpikes heaped umbellately faſtigiate.

7. Origanum heracleoticum. *Winter Sweet Marjoram.*
Lin. ſpec. 823. *Reich.* 3. 77. *Lour. cochinch.* 373.
O. heracl. Cunila gallinacea Plinii. *Bauh. pin.* 223.
O. heracl. *Ger.* 541. 1. *emac.* 666. 1. *Raii hiſt.* 539.—verius. *Park. theat.* 15. 1.
Orega, O. heracl. Cunilæ. *Lob. ic.* 492.
Spikes long peduncled aggregate, braktes the length of the calyxes.

8. Origanum vulgare. *Common Marjoram.*
Lin. ſpec. 824. *fl. ſuec.* 541. *Reich.* 3. 78. *hort. cliff.* 305. *fl. ſuec. n.* 534. *mat. med.* 151. *Woodv. med. bot.* 451. *t.* 164. *Hudſ. angl.* 262. *Wither. arr. ed.* 3. 535. *Curt. lond.* 5. 39. 338. *Lightf. ſcot.* 317. *Relh. cant. n.* 445. *Sibth. oxon. n.* 535. *Hall. helv. n.* 233. *Gmel. ſib.* 3. 244. *Neck. gallob.* 259. *Crantz. auſtr.* 282. *Stoerk. carn. n.* 740. *Pollich pal. n.* 573. *Fl. dan. t.* 638. *Allion. pedem. n.* 82. *Villars. dauph.* 2. 395. *Kniph. ſilef. n.* 952. *Ludw. elt. t.* 90. *Kniph. cent.* 4. *n.* 59. *Sabb. hort.* 3. *t.* 75. *Regn. bot. Gron. virg.* 65.
O. ſylveſtre. *Bauh. pin.* 223. *Blacken. t.* 280. *Dod. pempt.* 285. 2.
O. ſylv. ſ. vulgare. *Fuchſ. hiſt.* 552. *Riv. mon.* 60. *f.* 1.
O. vulgare. *Matth.* 701. *Trag.* 36. 1. *Lonic.* 1. 118. 2. *Mor. hiſt. ſ.* 11. *t.* 3. *f.* 12.
O. vulg. ſpontaneum. *Bauh. hiſt.* 3. 236. *Raii hiſt.* 539. *ſuv.* 236. *Petiv. brit. t.* 34. *f.* 8.
O. anglicum. *Ger.* 541. 4. *emac.* 666. 4.
Majorana ſylveſtris. *Park. theat.* 12. 6.
β. O. humile. *Mill. dict. n.* 4.
O. ſyl. humile. *Bauh. pin.* 223. *prodr.* 109.
γ. O. latifolium. *Mill. dict. n.* 3.
O. humilius latifolium glabrum. *Tournef. inſt.* 199.
δ. O. orientale. *Mill. dict. n.* 5.
O. orient. Prunellæ folio glauco, flore purpureo. *Boerh. ind.* 1. 179.
Spikes roundiſh panicled conglomerate, braktes longer than the calyx ovate.

9. Origanum Onites. *Pot Marjoram.*
Lin. ſpec. 824. *Reich.* 3. 78.
O. lignoſum ſyracuſanum perenne, umbellâ ampliſſima brevi, lato & nervoſo folio. *Bocc. muſ.* 2. 45. *t.* 38.
Spikes oblong aggregate hirſute, leaves cordate tomentoſe.

[10. Origanum ſyriacum. *Syrian Marjoram.*
Lin. ſpec. 824. *Reich.* 3. 78. *Lour. cochinch.* 374.
Majorana ſyriaca vel cretica. *Bauh. pin.* 224. *Raii hiſt.* 538.
Marum ſyriacum. *Lob. ic.* 499.
Spikes long ternate peduncled villoſe, leaves ovate villoſe.

11. Origanum Maru.
Lin. ſpec. 825. *Reich.* 3. 79.
Majorana cretica, Origani folio, villoſa Satureiæ odore, flore purpuraſcente. *Tournef. cor.* 13.
Maru creticum. *Alp. exot.* 289. *t.* 288.
Spikes hirſute, leaves ovate tomentoſe ſeſſile.]

12. Origanum Majorana. *Sweet or knotted Marjoram.*
Lin. ſpec. 825. *Reich* 3. 79. *hort. cliff.* 304. *upſ.* 161. *mat. med.* 298. *Woodv. med. bot.* 453. *t.* 165. *Blackw. t.* 319. *Regn. bot. Lour. cochinch.* 374.
Majorana vulgaris. *Bauh. pin.* 224. *Raii hiſt.* 538.
M. vulg. annua. *Mor. hiſt. ſ.* 11. *t.* 3. *f.* 1.
M. vulg. æſtiva. *Park. theat.* 11. 1.
M. major. *Ger.* 538. 1. *emac.* 664. 1.
M. majori folio, ex ſemine nata. *Bauh. hiſt.*
Amaracus vulgatior. *Lob. ic.* 498.
β. M. tenuifolia. *Bauh. pin.* 224. *Ger.* 539. 3. *emac.* 664. 3. *Park. theat.* 11. *Raii hiſt.* 538.
M. tenuior & ſignoſior. *Bauh. hiſt.*
M. hortenſis odorata perennis. *Mor. hiſt.* 3. 359.
Leaves oval ſtand, ſpikes roundiſh compact puberſcent.

DESCRIPTION, *&c.*

1. This is a perennial plant with a low ſhrubby ſtalk, ſeldom riſing more than a foot and half high, dividing into branches. Leaves roundiſh, thick, woolly, hollowed like a ladle; they are like thoſe of common Marjoram, but of a thicker ſubſtance, and have much the ſame ſcent. The flowers are produced in roundiſh ſpikes, cloſely joined together at the top of the ſtalks; and at the end of the ſmall ſide branches, they are of a pale aſh colour, peeping out of their ſcaly coverings.

[Haſſelquiſt remarks that it is cultivated in the gardens at Cairo on account of its ſmell, which is ſtronger than that of Dittany of Crete, aromatic, and comforting the head; and that the Arabians call it Zatarhendi, that is Origanum indicum.

Native of Egypt. Cultivated in 1731, by Mr. Miller. It flowers from june to auguſt[1].]

2. This alſo is a perennial plant. Stalks hairy, about nine inches high, of a purpliſh colour, ſending out ſmall branches from the ſides by pairs. Leaves round, thick, woolly, very white. The whole plant has a piercing aromatic ſcent, and biting taſte. The flowers are collected in looſe leafy heads of a purple colour, and nodding; they are ſmall, and the ſtamens ſtand out beyond the corolla.

[The fabulous qualities attributed to Dictamnus may be ſeen in Virgil's 12th Æneid, and in Cicero de Natura Deorum, 2. 50.

Native of the iſland of Candia[2] and, according to Loureiro, of China near Canton. It flowers from june to auguſt. Cultivated in 1568, by Mr. Riche, as appears from Turner's herbal[3].]

3. This has a perennial root, but an annual ſtalk. The root is compoſed of many ſlender woody fibres. The leaves are oval, ſmooth, and of a grayiſh colour; the ſtalks are ſlender, of a purpliſh colour, ſmooth, near two feet high, ſending out ſlender branches oppoſite, terminated by ſlender oblong ſpikes of ſmall purpliſh flowers, peeping out of their ſcaly covers. The ſtamens are extended beyond the corolla to a conſiderable length. The leaves on the lower part of the ſtalk are almoſt as large as thoſe of the common ſort, but thoſe on the upper part of the ſtalk and branches are very ſmall, and ſit cloſe to the ſtalk.

It grows naturally in the Levant, and was diſcovered by Sir George Wheeler on mount Sipylus; he ſent the ſeeds to the Oxford garden; [where it was cultivated in 1699, by Mr. Jacob Bobart. It flowers from june to ſeptember[4].

4. Root ſometimes as large as the thumb, woody, about a foot long, brown without, reddiſh within, with twiſted fibres. Stems eight or nine inches high, glaucous, ſimple or branched. Leaves round or oval, nine or ten lines in length, not unlike thoſe of n. 2. ſome of them thick, fleſhy and ſmooth, others thinner and ſlightly villoſe, ſome are inſipid, others ſharp, ſome odoriferous, others without ſcent; none of theſe leaves diminiſh, except towards the top of the branches and ſtems, which commonly divide into two ſpikes, or are terminated by one only; each ſpike is fifteen or twenty lines long, and five or ſix wide, formed by four rows of ſcales, of a pale purple colour, oval pointed, four or five lines long; ſometimes they are pale green with

[1] Hort. kew. [2] Idem. [3] Idem.

purple borders: the flowers expand ſucceſſively from the axils of theſe, nine or ten lines long: the tube is half a line in diameter, white, and ſpreads into two lips, the upper two lines and a half long, blunt and folded; the lower of the ſame ſize, rounded and divided into three blunt ſegments, terminated behind by a ſpur half a line in length. Stamens longer than the upper lip, but of the ſame colour: anthers twin. Calyx tubular, two lines and a half long, pale green; at the bottom of it two or three very ſmall blackiſh ſeeds ripen, one of the embryos being always abortive. The ſeeds vegetated well in the Royal Garden at Paris, and the plant was not altered by culture [b].

Native of the iſland of Amorgos. Introduced in 1788 by the late John Sibthorp, M. D. It flowers in auguſt [c].

Mr. Miller applies this name of Tournefort's to his twelfth ſort, which he ſays] is undoubtedly a variety produced from the intermixing the farina of the Cretan Dittany with that of Mount Sipylus, for the plants in the garden belonging to the Company of Apothecaries were accidentally produced from the ſeeds of one ſpecies, where both ſorts ſtood near each other in the botanic garden of John Browning, Eſq. Maſter in Chancery, at Cheliea; the ſeeds were dropped from the plant into the border between the two ſorts, ſo that it is uncertain from which ſpecies they came; but as the ſtalks and heads of flowers bear a greater reſemblance to the Dittany of Mount Sipylus, we may ſuppoſe it aroſe from the ſeeds of that, impregnated by the farina of the Cretan Dittany, which grew near it; for the under leaves of this are round, of a thick texture and woolly, ſo nearly reſembling thoſe of the Cretan Dittany as not to be diſtinguiſhed from it, but the ſtalks riſe full as high as thoſe of the Dittany of Sipylus, but branch out more their whole length; they are of a purple colour and hairy: the lower leaves on the ſtalk are much larger than thoſe of Mount Sipylus and are hairy, approaching to thoſe of the Cretan Dittany, but not ſo thick or woolly; the upper leaves are ſmooth, and approach to thoſe of the other ſort, but are larger, as are alſo the ſpikes of flowers, and the ſealy leaves which cover the flowers are larger and of a deeper purple colour.

Mr. Miller had alſo dried ſamples of another variety, which aroſe from ſeeds in the Leyden garden: theſe ſeeds were ſent from Paris, by the name which Tournefort gave to that which he found in the Levant. The leaves of this are as large as thoſe of the Dittany of Crete, but not ſo thick or woolly; the ſtalks riſe more like thoſe of the Dittany of Mount Sipylus, but branch out wider at the top; the flowers grow in cloſer cluſters, and do not hang downward: they are ſmall, ſhaped like thoſe of the former ſort, and flower at the ſame time.

By the character which Linneus gave to the Cretan Dittany, it may be ſuppoſed he had not ſeen the true ſort, for it better ſuits the variety. All the leaves of the true Dittany are very thick and woolly, even thoſe which are ſituated immediately below the flowers, whereas the lower leaves only are ſo in his character.

[Mr. Miller's hybridum ſeems to be only a variety of the ſecond ſort, and by no means the ſame with this of Tournefort.]

5. This is the Origanum of Crete, directed to be uſed in medicine; but there has been great confuſion among botaniſts in diſtinguiſhing the ſpecies. It riſes a foot and half high. The leaves are ovate and hoary, with a ſtrong aromatic ſcent. The flowers grow in long, erect, bunched ſpikes at the top of the ſtalks, having membranaceous bractes between, twice the length of the calyx. The flowers are ſmall and white, like thoſe of common Origanum. It flowers in july, but ſeldom perfects ſeeds in England.

[According to Gronovius, the leaves are ovate, acute and ſmooth, with the veins rugged; according to Linneus, in the Amoenitates, they are ovate, blunt, rugged and quite entire; the ſpikes cluſtered, compact and ſmooth.

[b] Tournef. voyage. [c] Hort. kew.

Haller ſays that he compared the dry plant with the ſpecimen in Caſpar Bauhin's herbarium; that it agrees with it in the ſpikes, which are long, cylindric, and have bractes ſuch as are in the common ſort, ovate-lanceolate, but heaped and imbricate, to twenty-four in a ſingle ſpike. In the Swiſs ſpecimen the leaves are more acuminate; in the Cretan ſpecimen they are a little rounder. The Cretan may be a variety of the Swiſs with larger bractes, and the flowers are ſometimes larger.

Native of the South of Europe, about Baſil, and in Paleſtine on mount Libanus, the mount of Olives, and between Rama and Joppa. China near Canton, according to Loureiro.

6. This is a perennial plant, with ſeveral rod-like, woody, long ſtems, putting forth branchlets at intervals. Leaves ſmaller than thoſe of Cretan Marjoram, leſs hoary, and not ſo round, but rather oblong, acuminate, nerved, and ſomewhat lanuginoſe. Scaly heads terminate the ſtems and branches. It exhales a very fragrant ſmell.

Found by Sir George Wheeler abundantly at Smyrna, on the mount upon which the citadel is built [d]. Linneus adds Crete, and Tournefort gives it the epithet *creticа*.]

7. Root perennial; from which ariſe many branching ſtalks a foot and half high, hairy, and inclining to a purpliſh colour. Leaves ovate, obtuſe, hairy, reſembling greatly thoſe of Sweet Marjoram, on ſhort footſtalks. Flowers in ſpikes about two inches long, ſeveral ariſing together from the diviſions of the ſtalk. Flowers ſmall, white, peeping out of their ſcaly covers.

[Linneus remarks, that it has the habit of Common Marjoram, but that the ſpikes are a finger's length, looſely imbricate. It differs from *O. creticum*, in having the bractes longer than the calyxes, and the ſpikes peduncled.]

It grows naturally in Greece and the warm parts of Europe. It is now commonly known by the name of Winter Sweet Marjoram, but was formerly called Pot Marjoram. It is chiefly cultivated for noſegays, becauſe it comes ſooner to flower than Sweet Marjoram. There is a variety with variegated leaves.

[Mr. Miller cultivated it in 1731 [e]. According to Loureiro, it is a native of China and Cochinchina.

8. Root perennial, creeping, horizontal, brown, tufted with numerous fibres. Stem a foot, eighteen inches or near two feet in height, upright, ſomewhat woody, a little downy, and often tinged with purple: branches oppoſite, upright, more tender than the ſtalk, in other reſpects ſimilar. Leaves ovate, pointed, finely and thinly toothed, above nearly ſmooth, beneath downy, dotted on both ſides, the edge finely ciliate, ſpreading. Petioles downy. The axils of the leaves, in the cultivated plant, bear numerous ſmaller leaves. Bractes ovate, ovate-lanceolate or lanceolate, ſeſſile, concave, entire, more deeply coloured than the corolla, appearing downy when magnified [f]. Calyx nearly equal, the mouth cloſed with briſtly hairs, which at firſt lie parallel to the ſides, but when the corolla falls off they ſtand out cloſing up to the mouth; without beſet with ſhort fine hairs, and minute white ſhining globules. Corolla pale red, hairy, the middle ſegment rather longer than the reſt. Stamens as long as, or longer than the corolla, but in ſome ſpecimens ſhorter, and then the anthers appear to be deſtitute of pollen [g].

Wild Marjoram is an aromatic and ornamental plant, growing wild in thickets and hedges, chiefly in a calcareous ſoil; and flowering from the end of june through auguſt.

The dried leaves, uſed inſtead of tea, are exceedingly grateful; the are alſo uſed in fomentations: the eſſential oil is ſo acrid, that it may be conſidered as a cauſtic, and is much uſed with that intention by farriers; a little cotton moiſtened with it, and put into the hollow of an aching tooth, frequently relieves the pain. The country people uſe the tops to dye woollen cloth purple [h]. It alſo dyes linnen of a reddiſh brown

[d] Ray. [e] Hort. kew. [f] Curtis. [g] Withering. [h] Idem.

colour;

colour; for this purpose the linnen is first macerated in alum water and dried; it is then soaked for two days in a decoction of the bark of the crab-tree; it is wrung out of this, boiled in a ley of ashes, and then suffered to boil in the decoction [1]. According to the Swedish experiments, goats and sheep eat it; horses are not fond of it; and kine refuse it.

The leaves vary in shape from ovate to ovate-lanceolate and ovate-cordate.] There is a variety with white flowers and light-green stalks; and another with variegated leaves. It is sometimes cultivated in gardens, and is by some called Pot Marjoram; being commonly used in soups.

[Our Wild Marjoram is found not only in most parts of Europe, but also in the rocky parts of Canada, where the bractes are of a very high colour [2]. I have placed three of Mr. Miller's species as varieties under this.

9. Pot Marjoram has the habit of Sweet Marjoram (O. Majorana), but it is woody. Stems with long spreading hairs. Leaves small, subsessile, acute, thinly serrate, tomentose on both sides; with rudiments of branches from the axils. Spikes heaped, as in O. Majorana, but oblong, by threes on each peduncle, the middle one sessile, villose: flowers white [3].]

Stems perennial, woody, a foot and half high, dividing into many small branches. Leaves a little larger than those of Marjoram and woolly. Flowers small, white, just emerging out of their scaly covers. They appear in july, but seldom perfect seeds in England.

Native of Sicily, about Syracuse. [Cultivated in 1759, by Mr. Miller [4]. Certainly not an English plant. We do not know what Mr. Hudson took for it.

10. This has the habit of O. Majorana. Leaves roundish-ovate, acute, with wandering hairs scattered over them. Racemes from the axils. Corymb terminating, brachiate with longer branches. Spikes generally every where three, terminating, long, erect, four-cornered, villose.

Place of growth uncertain [5]. According to Loureiro it grows wild in Cochinchina.

11. This also has the appearance of the next species, but is more rigid. Leaves without any manifest petioles, very thick, tomentose, ovate not obovate, white. Stem purple, with a few villose hairs scattered over it. Heads very hirsute, triternate; the last sessile, terminating the stem and branches.—Native of Crete [6].

12. Root biennial, brown, with many long tough fibres. Stems numerous, woody, branched, a foot and half high. Leaves downy, entire, pale green, petioled. Flowers small, white, appearing successively between the bracteal leaves, which are numerous, and form roundish compact terminating spikes. Calyx tubular, divided at the brim into five pointed segments. Tube of the corolla funnel-shaped, divided at the border into two lips, the upper erect and roundish, the under cut into three pointed segments [7].]

It begins to flower in july, at which time it is cut for use, and is then called Knotted Marjoram, from the flowers being collected into roundish close heads like knots.

Sweet Marjoram was cultivated here in 1597, as appears from Gerarde's Herbal [8]. Loureiro says it grows in China and Cochinchina, but is rare, and perhaps introduced from abroad.

It is thought to be the Σαμψυχος or Amaracus of the ancients. The place of which it is a native has not been ascertained.

The leaves and tops have a pleasant smell, and a moderately warm aromatic bitterish taste. They yield a considerable quantity of essential oil, amounting, according to Beaume, to fifteen ounces from one hundred and fifty pounds of the recent plant. This oil, on being long kept, assumes a solid form. The medicinal qualities of this plant agree with those of Wild Marjoram; but being much more fragrant, it is deemed more cephalic, and better adapted to those complaints known by the name of nervous, and may be therefore employed with the same intentions as Lavender. It is directed in the composition of Pulvis sternutatorius in the London and Edinburgh Pharmacopœias, with a view to the agreeable odour which it gives to the Asarabacca, rather than to its errhine power, which is very inconsiderable. In its recent state we are told that it has been successfully applied to schirrous tumours of the breasts [9].

Our English name is evidently corrupted from *Majorana*; by our old herbarists it is written *Marjerone*; and Gerarde says, of the best sort it was called *Majorane*.]

[1] Haller. [2] Linn. [3] Idem. [4] Hort. kew. [5] Linn. [6] Idem. [7] Woodville. [8] Hort. kew.

PROPAGATION AND CULTURE.

1. It is increased by slips or cuttings, planted in a border of good earth in any of the summer months, shaded and duly watered. Plant them in small pots filled with light kitchen-garden mould, when they are well rooted, and place them in the shade till they have taken new root; then remove them to an open situation till the end of october, when they must be placed under shelter. Under a hot-bed frame, where they may be protected from hard frost, and have as much free air as possible in mild weather, they will thrive better than if more tenderly treated.

2. Dittany of Crete is increased in the same manner, in pots or a shady border, covering the slips or cuttings close with a bell-glass or hand-glass, and now and then refreshing them with water, but not too much. The following spring some of the plants may be shaken out of the pots, and planted in a warm border, in a dry soil, where they will live through common winters; but being liable to be killed by severe frost, it will be proper to keep a few plants in pots, to be sheltered in winter.

3, 4. May be propagated and treated in the same manner.

5, 6. Are increased by parting the roots in autumn, but must have a dry soil and a warm situation.

7. Winter Sweet Marjoram is hardy enough to thrive in the open air in England, in a dry soil, and is generally propagated by parting the roots in autumn.

8. Common Marjoram, with all its varieties, is propagated in the same manner; or it will rise plentifully from scattered seeds.

9, 10, 11. May be increased by cuttings or slips.

12. Sweet or knotted Marjoram is propagated by seeds, which are generally imported from the South of France or from Italy, for they seldom ripen in England. Sow them on a warm border towards the end of march; and when the plants are about an inch high, transplant them into beds of rich earth, at six inches distance every way; watering them duly till they have taken new root: after which they require only to be kept clean from weeds.

[ORIGANUM. See *Cunopodium*, and *Monarda*.

ORLEANA. See *Bixa*.

Ornithogali facie. See *Hypoxis*.

Ornithogalo affinis. See *Claytonia* and *Ornithogalum*.

ORNITHOGALUM (*of Pliny.* Ορνιθογαλον *of Dioscorides.* Ορνιθου γαλα, *Avis lac. From the white colour of the flowers (or roots) like the feathers or beaks of some fowls.*)

Lin. gen. n. 418. *Reich. n.* 451. *Schreb. n.* 566. *Tournef. t.* 203. *Juss.* 53. *Gærtn. t.* 17. Stellaris *Dill. gen.* 110.

Class. 6. 1. Hexandria Monogynia.

Nat. order of *Coronariæ*. *Asphodeli* Juss.

GENERIC CHARACTER.

CAL. none.

COR. *Petals* six, lanceolate, upright below the middle, above it spreading, permanent, losing their colour.

STAM. *Filaments* six, upright, alternately widening at the base, shorter than the corolla. *Anthers* simple.

PIST. *Germ* angular. *Style* awl-shaped, permanent. *Stigma* blunt.

PER. *Capsule* roundish, angular, three-celled, three-valved.

SEEDS many, roundish.

OBS. Filaments *in some flat, upright, the alternate ones trifid at top, the middle segment supporting the anther; in others alternate simple.*

[1] Woodville.

ESSENTIAL CHARACTER.

Cor. six-petalled, upright, permanent, spreading above the middle. *Filaments* alternate widening at the base.

SPECIES.

* *With all the flaments awl-shaped.*

[1. Ornithogalum uniflorum. *One-flowered Star of Bethlehem.*
Lin. syst. 327. *Reich.* 2. 52. *mant.* 62. *Laxm. nov. act. petrop.* 18. *t.* 6. *f.* 3.
Scape two-leaved, pedunele one-flowered.

2. Ornithogalum niveum. *Snowy Star of Bethlehem.*
Ait. hort. kew. 1. 440.
Raceme few-flowered, petals lanceolate, leaves filiform channelled.]

3. Ornithogalum umbellatum. *Umbelled Star of Bethlehem.*
Lin. spec. 441. *syst.* 328. *Reich.* 2. 56. *hort. cliff.* 124. *upf.* 84. *Ait. hort. kew.* 440. *Hudf. angl.* 143. *Withet. arr. ed.* 3. 337. *Engl. bot.* 130. *Relb. cant. n.* 1070. *fuppl.* 2. *Sibth. oxon. n.* 335. *Hall. helv. n.* 1215. *Pollich pal. n.* 333. *Gron. orient. n.* 111. *Scop. carn. n.* 403. *Jacqu. auftr.* 4. 22. *t.* 343. *Allion. pedem. n.* 1901. *Villars dauph.* 2. 272. *Krock. filef. n.* 525.
O. umb. medium anguſtifolium. *Bauh. pin.* 70. *Raii ſyn.* 372.
O. vulgare. *Ger.* 132. 1. *emac.* 165. 1. *Park. par.* 136.
O. vulg. & verius. *Baub. hiſt.* 2. 630. *Raii hiſt.* 1153.
Bulbus Leucanthemus minor ſive Ornithogalum. *Dod. pempt.* 221. 1.
O. candidum vulg. *Lob. obſ.* 72. 2.
O. ſpicatum. *Swert.* 1. 57. 4.
Eliocarmos. *Renealm. ſpec.* 88. *t.* 87.
Corymb few-flowered, peduncles longer than the bractles, the outer taller than the central ones.

4. Ornithogalum luteum. *Yellow ſtar of Bethlehem.*
Lin. ſpec. 439. *ſyſt.* 327. *Reich.* 2. 53. *fl. ſuec. n.* 285. *hort. cliff.* 124. *Hudſ. angl.* 143. *Withet. arr. ed.* 3. 336. *Engl. bot.* 21. *Lightf. ſcot.* 180. *Sibth. oxon. n.* 334. *Hall. helv. n.* 1213. *Gmel. ſib.* 1. 46. *Neck. gallob.* 162. *Scop. carn. n.* 410. *Pollich pal. n.* 332. *Fl. dan. t.* 378. *Allion. pedem. n.* 1898. *Villars dauph.* 2. 268. *Krock. ſilef. n.* 521. *Bauh. pin.* 71. *Park. par.* 140. *t.* 137. 7. *Lob. obſ.* 72. 3. *ic.* 149. *Raii hiſt.* 1153. *ſyn.* 372. *Petiv. brit. t.* 66. *f.* 12. *Swert.* 1. 57. 3. *Mor. hiſt. ſ.* 4. *t.* 13. *f.* 12.
O. lut. ſ. Cepe agraria. *Ger.* 132. 2. *emac.* 165. 2.
Bulbus *Trag.* 737.—ſilveſtris *Fuchſ.* 169. *Dod. pempt.* 222. *Cluſ. hiſt.* 1. 188. 2. *Tabern.* 633. *Lonic.* 193. 1.—flore luteo, ſ. O. luteum. *Bauh. hiſt.* 2. 622. 1.
Pyrrhochiton. *Renealm. ſpec.* 91. *t.* 90.
Scape angular two-leaved, peduncles umbelled ſimple.

5. Ornithogalum minimum. *Small Star of Bethlehem.*
Lin. ſpec. 440. *ſyſt.* 327. *Reich.* 2. 53. *Fl. ſuec. n.* 286. *Gunn. nov. n.* 1114. *Gouan. monſp.* 309. *illuſtr.* 26. *Leers herborn. n.* 254. *Villars dauph.* 2. 269. *Krock. ſilef. n.* 522. *Fl. dan. t.* 612. *Knipb. cent.* 6. *n.* 66. *Hall. helv. n.* 1214. (Phalangium.)
O. pannonicum minus flore luteo. *Cluſ. pann.* 190. 191. *hiſt.* 189. 1.
O. luteum minus. *Baub. pin.* 71.
O. pallido flore. *Baub. hiſt.* 2. 624.
O. luteum. *Tabern.* 633.
Hypoxis. *Reutalm. ſpec.* 92.
β. O. bulbiferum minimum. *Col. ecphr.* 323. 324. *Rudb. elyſ.* 139. *Mor. hiſt. ſ.* 4. *t.* 13. *f.* 13.
Scape angular two-leaved, peduncles umbelled branched.

6. Ornithogalum pyrenaicum. *Pyrenean Star of Bethlehem.*
Hudſ. angl. 143. *Withet. arr. ed.* 3. 337. *Jacqu. auſtr.* 2. 2. *t.* 103. *Hall. helv. n.* 1210. (Phalangium.)
O. anguſtifolium majus, floribus ex albo virefcentibus. *Baub. pin.* 70. *Raii hiſt.* 1151. *ſyn.* 373. *Mor. hiſt. ſ* 4. *t.* 13. *f.* 5.

O. majus. *Cluſ. hiſt.* 1. 187.
O. pyrenaicum. *Cluſ. cur.* 21.
Aſphodelus bulboſus. *Ger.* 89. *emac.* 97.—Galeni, ſ. O. majus flore ſubvireſcente. *Park. parad.* 136. *t.* 137. 5.—Dodonæi (209. 1.) ſ. O. ſpicatum flore virente. *Baub. hiſt.* 2. 627. 1.
Raceme very long, petals linear blunt, filaments lanceolate equal, ſtyle the length of the ſtamens.

[7. Ornithogalum ſtachyoides. *Cloſe-ſpiked Star of Bethlehem.*
Ait. hort. kew. 1. 441.

O. pyrenaicum. *Lin. ſpec.* 440. *Reich.* 2. 54. *Gouan. fl. monſp.* 309. *illuſtr.* 26. *Scop. carn. n.* 409. *Gron. orient. n.* 110. *Villars dauph.* 2. 271. *Krock. ſilef. n.* 523.
Stachyoides. *Renealm. ſpec.* 93. *t.* 90.
Raceme very long, petals lanceolate-oblong, filaments broad-lanceolate, alternate ones ſhorter by half.

8. Ornithogalum narbonenſe.
Lin. ſpec. 440. *ſyſt.* 327. *Reich.* 2. 54. *amoen.* 4. 312. *Pall. it.* 3. 654. *Gouan. illuſtr.* 26. *Dod. pempt.* 222. *Allion. pedem. n.* 1900.
O. majus ſpicatum, flore albo. *Baub. pin.* 70. *Park. par.* 135. 2. *t.* 137. 3. *Raii hiſt.* 1151.
O. ſpicatum. *Ger. emac.* 168. 8.
Raceme oblong, filaments lanceolate membranaceous, peduncles and flowers ſpreading.]

9. Ornithogalum latifolium. *Broad-leaved Star of Bethlehem.*
Lin. ſpec. 440. *ſyſt.* 327. *Reich.* 2. 55.
O. latifolium & maximum. *Baub. pin.* 70.
O. max. album. *Park. par.* 135. 1. *t.* 137. 2.
O. max. floribus prorſus niveis. *Cluſ. Baub. hiſt. Raii hiſt.* 1152.
O. vel Lilium alexandrinum, flor. albis innumerabilibus. *Swert. floril.* 58.
Raceme very long, leaves lanceolate-enſiform.

[10. Ornithogalum longibracteatum.
Lin. ſyſt. 327. *Jacqu. hort.* 1. *t.* 29.
Raceme very long, bractles almoſt double the length of the peduncles, leaves lanceolate-enſiform.

11. Ornithogalum comoſum.
Lin. ſpec. 440. *Reich.* 2. 55. *amoen.* 4. 312.
O. ſpicatum ſ. comoſum, flore lacteo. *Baub. pin.* 70. *Rudb. elyſ.* 2. 135. *f.* 1.
O. lacteï ſpecies major. *Beſl. cyſt.*
Raceme very ſhort, bractles lanceolate the length of the flowers, petals blunt.]

12. Ornithogalum pyramidale. *Pyramidal Star of Bethlehem.*
Lin. ſpec. 441. *Reich.* 2. 55. *Gartn. fruct.* 1. 65.
O. anguſtifolium ſpicatum maximum. *Baub. pin.* 70. *Rudb. elyſ.* 2. 134. *f.* 4.
O. lacteum maximum. *Beſl. cyſt. vern.* 5. *t.* 14. *f.* 2.
Raceme conical, flowers numerous aſcending, petals elliptic-oblong flat, ſtamens lanceolate equal, ſtyle very ſhort.

[13. Ornithogalum unifolium. *One-leafed Star of Bethlehem.*
Retz. obſ. 2. 17. *n.* 46.
Leaf radical ſolitary fleſhy oblong ciliate, ſcape naked, raceme ſhort.]

** *With the alternate ſtamens emarginate.*

14. Ornithogalum arabicum. *Great-flowered Star of Bethlehem.*
Lin. ſpec. 441. *ſyſt.* 327. *Reich.* 2. 55. *Cluſ. hiſt.* 1. 186. *Beſl. cyſt. vern.* 5. *t.* 12. *f.* 1. *Park. parad.* 134. *t.* 137. *f.* 1. *Raii hiſt.* 1152. *Mor. hiſt. ſ.* 4. *t.* 13. *f.* 1.
O. majus arabicum. *Ger. emac.* 167. 7.
O. umbellatum maximum. *Baub. pin.* 69. *Rudb. elyſ.* 2. 130. *f.* 1.
Lilium alexandrinum, ſ. O. magnum ſyriacum. *Baub. hiſt.*
Melenomphalé. *Renealm. ſpec.* 89. *t.* 90.
Corymb many-flowered, filaments awl-ſhaped, corolla broad bell-ſhaped, outer petals obſoletely three-toothed.

15. Ornithogalum thyrſoides. *Spear-leaved Star of Bethlehem.*
Lin. ſyſt. 328. *Ait. hort. kew.* 1. 442.
α. O. dubium. *Houtt. nat. hiſt.* 12. 309. *t.* 82. *f.* 3.
With yellow flowers, and bractles ſhorter than the peduncles.

β. O.

β. O. thyrſoides. *Jacqu. hort.* 3. 17. *t.* 28.
O. racemo conico laxo, pedunculis longiſſimis, floribus erectis. *Mill. fig.* 128. *t.* 192.
With white flowers, and bractes the length of the peduncle.
Corymbs many-flowered raceme-form, alternate filaments forked, leaves lanceolate.

[16. Ornithogalum caudatum. *Long-ſpiked Star of Bethlehem.*
Ait. hort. kew. 1. 442.
Raceme very long, leaves lanceolate-linear, corollas ſpreading, ſtament widened, the alternate ones wedge-form.]

17. Ornithogalum nutans. *Neapolitan Star of Bethlehem. Lin. ſpec.* 441. *ſyſt.* 328. *Reich.* 2. 56. *hort. cliff.* 124. *upſ.* 84. *Jacqu. auſtr.* 4. 1. *t.* 301. *Hall. helv. n.* 1216. *Gærtn. fruct.* 1. 66. *Curt. magaz.* 269.
O. exoticum magno flore minori innato. *Baub. pin.* 70. *Rudb. elyſ.* 1. 137. *f.* 12.
O. neapolitanum. *Cluſ. app.* 2. *p.* 9. *t.* 9. *Ger. emac.* 168. *f.* 9. *Park. par.* 138. *t.* 137. 8. *Baub. hiſt. Raii hiſt.* 1152.
Flowers directed one way pendulous, nectary ſtamineous bell-ſhaped.

18. Ornithogalum capenſe.
Lin. ſpec. 441. *Reich.* 2. 56. *Thunb. prodr. cap.* 62.
O. africanum plantaginis roſeæ folio radice tuberoſa. *Comm. hort.* 2. 175. *t.* 88.
Ornithogalo affinis radice tuberoſa, cyclaminis folio, flore pallide cæruleo. *Breyn. cent. t.* 41. *Rudb. elyſ.* 1. 138. *f.* 14.
Leaves cordate petioled.

*** *New Species.*

[19. Ornithogalum crenulatum.
Lin. ſyſt. 328. *ſuppl.* 198. *Thunb. prodr. cap.* 62.
Leaves oblong blunt ciliate, raceme upright.

20. Ornithogalum rupeſtre.
Lin. ſyſt. 328. *ſuppl.* 199. *Thunb. prodr. cap.* 61.
Leaves filiform fleſhy, flowers reflex.

21. Ornithogalum ciliatum.
Lin. ſyſt. 328. *ſuppl.* 199. *Thunb. prodr. cap.* 62.
Leaves ovate acute ciliate, raceme upright.

22. Ornithogalum altiſſimum.
Lin. ſyſt. 328. *ſuppl.* 199. *Thunb. prodr. cap.* 62.
Leaves oblong-elliptic, raceme very long, bractes briſtle-ſhaped.

23. Ornithogalum piloſum.
Lin. ſyſt. 328. *ſuppl.* 199. *Thunb. prodr. cap.* 61.
Leaves linear-enſiform ciliate, flowers racemed, peduncles curved inwards.

24. Ornithogalum bulbiferum.
Lin. ſyſt. 328. *ſuppl.* 199. *Pallas it.* 2. 736. *t.* 9.
Bulbs axillary, ſtem many-leaved, one-flowered.

25. Ornithogalum circinatum.
Lin. ſyſt. 328. *ſuppl.* 199.
O. reticulatum. *Pallas it.* 3. 727. *t.* D. *f.* 2.
Hoary with hairs, leaves linear recurved channelled, root-leaf ſolitary, ſtem-leaves three, ſtem three or four-flowered.

26. Ornithogalum japonicum.
Lin. ſyſt. 328. *Thunb. jap.* 137.
Raceme ſpiked cylindric very long, ſcapes ſtricted.

27. Ornithogalum ſinenſe.
Lour. cochinch. 206.
Scape round grooved, ſpike ſimple long upright.

28. Ornithogalum graminifolium.
Thunb. prodr. cap. 61.
Leaves linear entire ſmooth, raceme ſpiked erect.

29. Ornithogalum albucoides.
Thunb. prodr. cap. 62.
Leaves linear channelled ſmooth, raceme upright.

30. Ornithogalum maculatum.
Thunb. prodr. cap. 62.
Leaves lanceolate, flowers directed one way, the three outer petals ſhorter duſky-ſpotted.

31. Ornithogalum ovatum.
Thunb. prodr. cap. 62.
Leaves ovate entire ſmooth, raceme ovate.

32. Ornithogalum nanum.
Thunb. prodr. cap. 62.

Fritillaria nana. *Lin. ſyſt.* 325. *Reich.* 2. 46. *Burm. prodr.* 9.
Leaves obovate, ſcape club-ſhaped, flowers ſpiked aggregate fleſhy.

33. Ornithogalum undulatum.
Thunb. prodr. cap. 62.
Leaves enſiform waved, ſcape ſubcylindrical, raceme comoſe ſhort.

34. Ornithogalum punctatum.
Thunb. prodr. cap. 62.
Leaves enſiform channelled, ſcape cylindrical, raceme very long comoſe, flowers remote.

35. Ornithogalum aureum. *Golden Star of Bethlehem. Curt. magaz.* 190.
Leaves ovate-lanceolate edged with white flowers racemed cluſtered, filaments placed on an emarginate nectary.

DESCRIPTIONS, *&c.*

1. The plant altogether reſembles O. luteum, but the peduncle is undivided and one-flowered. Flower half the ſize of Tulipa ſylveſtris, but three times as big as that of O. luteum. Petals lanceolate, blunt-iſh, yellow, green underneath. Filaments and anthers yellow, ſhorter than the petals. Germ oblong. Style the ſame length with the ſtamens. Stigmas three, blunt, all yellow. Leaves on the ſtem two, one above, both the length of the flower or the plant, double the breadth of O. luteum. Found in Siberia by Laxman[1]. Introduced in 1781, by Baron Claes Alſtroemer[2].

2. Leaves ſmooth, ſcarcely a finger's length. Scape ſhorter than the leaves. Peduncles ſcarcely half an inch long. Bractes oblong, acuminate, very ſhort. Petals four lines in length, white; the three outer with a green keel. Filaments ſhorter by half than the petals, ſnow white, alternately wider and narrower. Anthers pale yellow. Found by Maſſon at the Cape of Good Hope, and introduced in 1744. It flowers here in auguſt[3].

3. Bulb ſolid, having ſmaller bulbs joining to it. Root-leaves (ſometimes five) ſoft, keeled, or convex on the outſide and channelled within, with a white ſilvery ſtreak, from one to two lines in width, and above a foot in length, linear, bright green. Scape upright, round, very ſmooth, a long ſpan or a foot in height, terminating at top in alternate peduncles, very long and broad, all together forming a ſort of corymb, reſembling an irregular umbel, but not ſpringing from the ſame point; the lower ones being longer the flowers are all nearly of the ſame height; they are one-flowered, and each has a white, membranaceous, lanceolate, very large bracte. Petals white, with a broad green ſtreak along the under ſide; lanceolate, in two rows, three appearing to be a little larger, near an inch long, and four lines wide. Filaments lanceolate, flat, fleſhy, every other broader; all ſimple, not three of them forked or emarginate, as deſcribed by Linneus, Haller, &c. Anthers pale yellow, two lines in length. Germ with ſix blunt angles. Stigma three-ſided, white, blunt. Capſule ovate, blunt[4].

Mr. Woodward remarks that this ſpecies is very improperly called *umbellatum*, as the flowers are in a moſt evident ſpike (or rather corymb), whereas in *O. luteum* they actually grow in an umbel.

Native of the ſouthern parts of Europe, Germany, France, Switzerland, Auſtria, Carniola, Italy; alſo of the Levant; in orchards, paſtures, vineyards, and thickets. With us it is a doubtful native, as many of the bulbous plants are. In the cloſes about Streatham in Surry. Stillingfleet obſerved it in Norfolk, Relhan in Cambridgeſhire, Sibthorp near Barton, and in Chriſt-Church meadows Oxfordſhire, and Mr. Robſon ſays it is plentiful in a field near Knareſborough, Yorkſhire. By Ledſtone Hall near Leeds in the ſame county. It flowers in april and may.

4. Root-leaves generally ſingle and longer than the ſtem, which is from four to ſix inches high. Stem-leaves ſometimes two, three or four, one very large, the other ſmaller, all unequal; fringed with fine white hairs. From theſe ariſe a few fruit-ſtalks, (three to ſeven)

[1] Linn. mant. [2] Hort. kew. [3] Idem.
[4] Pollich, Haller, Villars, Withering. Woodw. Mſs.

each supporting one flower, and forming an umbel. Petals in two ſeries, the inner greeniſh yellow, the outer entirely green [f].

Mr. Woodward has a ſpecimen from the banks of the Tees, in which from two bracteal leaves, ariſes a ſingle fruitſtalk, ſupporting one flower. He remarks that this plant is well figured in Flora Danica, only much too large. Gerarde *emac.* 165. 2. and Petiver, 66. 12. both repreſent it well. Moriſon's is a very bad figure.

The roots of this ſpecies have been uſed for food in times of ſcarcity in Sweden: thoſe of all the ſpecies are nutritious and wholeſome [a].

Native of moſt parts of Europe, in woods, paſtures, and moiſt ſandy places; flowering in april. With us in the meadows near Godalming in Surry. Woods near Aſhford-mill, and Fauler in Oxfordſhire. In ſeveral parts of the North, as in a meadow adjoining to the Copper-mills, Derby. Under Malham-cove; near Doncaſter, Yorkſhire; and Kendal, Weſtmoreland; woods on the banks of the Tees near Greta-bridge, and Bignal, Yorkſhire. In Northumberland. Found in Scotland by Sibbald.

5. This reſembles the preceding very much, but the petals are more acute [a]. Scopoli and Gmelin think that they are only varieties; and Haller allows that there is a great ſimilitude between them. The preceding has the flowers yellow and larger, on ſimple peduncles: the leaves are alſo wider and greener. This has ſmaller flowers, more numerous, greeniſh or aſh-coloured yellow, on ſubdivided peduncles; leaves ſmall, aſh-coloured green [b].

Leers diſtinguiſhes it from the common yellow ſort by the ſcape being roundiſh, the umbel ſhorter, the leaves of the involucre more and longer, the peduncles round ſomewhat branched pubeſcent, the petals ſix, eight or nine, of a golden ſhining yellow, ſpreading very much, ſharper, the three outer blunter, pubeſcent underneath, the piſtil ſubvilloſe commonly abortive, the bulbs or offſets heaped axillary bracted.

Krocker remarks, that it is readily known from the preceding by its growing in a tuft.

The Biſhop of Dronthem, who doubts whether this and the *luteum* be diſtinct, ſays that it is only half the ſize, that the root-leaf is very narrow, and filiform at the baſe, not ſo flat as that of *O. luteum*. One or two of the peduncles branched, but this is ſometimes the caſe in the *luteum*. The petals are acute, nay extremely ſo in both; but ſometimes both have them blunt. The roots, though ſmall, are eſculent [c].]

Mr. Miller ſays that the bulbs are not larger than peas, that one or two narrow keel-ſhaped leaves about five inches long of a grayiſh colour ariſe from them, that the ſtalk is angular, about four inches high, having two narrow keel-ſhaped leaves juſt below the flowers, which are diſpoſed in an umbel on branching peduncles, they are yellow within but of a purpliſh green on the outſide; *they* appear in may, and are ſucceeded by ſmall triangular capſules, filled with reddiſh uneven ſeeds.

[Native of Sweden, Norway, Denmark, Germany, France, Switzerland, Hungary, Italy, on the borders of fields.

6. Stem naked, a foot and half or two feet high. Flowers in a long ſpike on ſlender peduncles, each ariſing from a membranaceous half-embracing bracte, broad at the baſe, tapering to a point. Petals narrow, ſpreading, pale yellow within, green on the outſide with whitiſh margins [a].]

Bulb pretty large, with ſeveral long keeled leaves coming out from it and ſpreading on the ground; among theſe comes out a ſingle naked ſtalk about two feet long, ſuſtaining a long looſe ſpike of flowers of a yellowiſh green colour, on pretty long peduncles and ſpreading wide from the principal ſtalk; petals narrow, making little appearance. The flowers have an agreeable ſcent, and appear in may: when the ſeed-veſſels are formed, the fruit-ſtalks become erect, and approach to the ſtalk. The ſeeds ripen in auguſt.

[f] Woodw. Mſt. Robſon in With. [a] Linn. ſuec. & With. [a] Linn. [b] Villars. [c] Fl. norv. 147. [d] Woodw. Mſs.

[Native of ſome parts of Europe, in paſtures. Between Bath and Bradford, near Little Aſhley. Between Bath and Warminſter, three miles from Briſtol in the way to Bath, and near Queen Charlton in Somerſetſhire. Half a mile from Chicheſter ſouthgate, in a meadow.

7. Height almoſt three feet. Bractes not embracing, very much tailed, the length of the pedicels. Petals very narrow, concave, wider at the tip, ſulphur-coloured, with a green dorſal nerve. Stamens not narrower one than another, but only alternately ſhorter. Flowers from fifty to ſixty.

It is eaſily known from O. narbonenſe, to which it is nearly allied, by the leaves being ſcarcely a palm in length and very narrow, whereas in the other they are a foot and half long, and an inch wide [a].

According to Scopoli, the principal difference conſiſts in the flowering peduncles of this ſpreading very much, but the fruiting peduncles erect and preſſed or parallel to the ſcape. Beſides the root is eaſily pulled up; the leaves three or four, channelled, turning yellow and withering, whilſt the plant is flowering; ſcape round, naked, two feet high, terminated by flowers in a long raceme and ſpreading; filaments alternately ſhortly bifid when examined by a glaſs. Capſule ovate, terminated by the ſtyle, and having five ſeeds in a cell.

Native of the South of Europe. Introduced about 1771. It flowers in april [b].

8. This is ſmaller than the preceding, with longer wider leaves. Gerard and others regard it as a variety of that.

Native of the South of France, Spain, Italy, Germany and Siberia.]

9. Bulb large. Root-leaves ſeveral broad ſword-ſhaped, ſpreading on the ground. Stalk thick, ſtrong, between two and three feet high, bearing a long ſpike of large white flowers, upon long pedicels.

[The leaves are a foot long, and more than two inches in breadth [a].

Ray, who cultivated it in his little garden at Cambridge, remarks that in the flowers which opened firſt the tips of the petals were green, whereas Cluſius ſays they are all of a ſnowy whiteneſs without any green nerve; that the pedicels are two inches long; and that the leaves begin to wither before the flowers open, nay are quite dried up if the plant be late in flowering. Cluſius counted above one hundred flowers on a ſpike.

Native of Egypt and Arabia. Cultivated here in 1629, as appears from Parkinſon. It flowers in june [b].

10. This ſpecies was received by Profeſſor Jacquin from the Cape of Good Hope, and is figured in the third volume of his Hortus Vindobonenſis. The bulb is ovate, whitiſh, with cloſely compacted ſcales, and of the ſize of an egg. Leaves about a foot and half long, and an inch and half broad, glofſy, acute, of a bright green, ſomewhat erect, thickiſh, ſeveral in number. Stem erect, *cylindric*, of the thickneſs of a finger, and two feet high, terminating in a conic, thick ſpike, which is gradually diſplayed, and at length changes into a lax, cylindric raceme of almoſt a foot long. The bractes, which are ſeated at the baſe of every footſtalk, are lax, of a pale green, ſubulate; the lower ones nearly four inches long; the upper ones gradually ſhorter. Footſtalks numerous, and about two inches long: flowers white, inodorous, with obtuſiſh petals each ſtreaked behind with a green ſtripe or line. Stamens ſhorter than the flower, wideſt at bottom. Anthers oblong, yellow, incumbent. Piſtil green. This ſpecies may perhaps be the ſame with the O. bracteatum of Thunberg prodr. plant. capenſ. p. 62.

11. Beſler deſcribes this ſpecies as having a foot conſiſting of two connate bulbs, with their fibres; leaves narrow, thick, porraceous, reflex. Stems aſſurgent, cloathed on the upper part with numerous milk-white flowers, of a medicated odour. Stamens purple with yellow anthers.—See Beſl. Hort. Eyſt. 1. Ord. 5. Plant. Vern. t. 14. fig. 3.]

[a] Gouan. Illuſtr. [a] Hort. kew. [b] Linn.
[b] Hort. kew.

12. This

12. This has a very large oval bulb, from which arife ſeveral long keeled leaves, of a dark green colour; in the middle of theſe ſprings up a naked ſtalk near three feet high, terminated by a long conical ſpike of white flowers, on pretty long pedicels.

[Capſule ſuperior, ovate-pyramidal, membranaceous, thin, whitiſh, three-grooved, having the partition in the middle. Receptacle none, beſides the central margin of the partitions, to which the ſeeds are faſtened horizontally in a double row. Seeds ſix or eight in each cell, few of them ripening, ovate-globular, beaked with a tubercle at the navel, ſomewhat wrinkled, black [1].]

It grows naturally upon the hills in Spain and Portugal, but has been long cultivated in the Engliſh gardens by the name of Star of Bethlehem. It flowers in june, and the ſeeds ripen in auguſt. [Cultivated by Mr. Miller in 1739 [2].

13. Bulb ovate, the ſize of a hazel nut. Leaf upright, flat, broad-lanceolate, blunt, naked, ciliate, ſheathing the ſcape at the baſe. Scape upright, round, longer than the leaf, terminated by a few-flowered raceme. Flowers peduncled, alternate. Bracte equalling the pedicel, embracing the baſe of it, awl-ſhaped. Corolla dirty yellow, ſpreading very wide; petals lanceolate, blunt. Filaments broad-lanceolate, quite entire, alternately wider and narrower. Anthers verſatile, yellow. Germ roundiſh three-cornered, with the corners channelled. Theſe corners are white from the baſe, and being placed as it were on the germ, terminate in a ſubulate-three-cornered ſtyle; the deep ſinuſes between theſe are green and melliferous. Stigma ſimple. Thunberg ſent the bulbs from the Cape of Good Hope, and it flowered in the garden at Lund in 1776 [3].

I do not find this plant in Thunberg's prodromus of Cape plants, publiſhed in 1794.

The Ornithogalum unifolium of Parkinſon is the Scilla unifolia of Linneus.]

14. Bulb large. Many long keeled leaves ariſe from it, which embrace each other at the baſe; they are of a deep green and ſtand erect. [Bractes embracing, cordate. Stamens connate [4]. Stem eighteen inches high, ſmooth, naked, ſlender. Flowers the ſize of thoſe of Narciſſus, on long pedicels; petals white, ſmelling like Coriander ſeed [5].

Native of Arabia, according to Miller; of Alexandria in Egypt and the Cape of Good Hope, according to Linneus. Cluſius ſays that in his time it was ſent every year to Vienna from Conſtantinople.—In the Kew catalogue it is ſet down as a native of Egypt and Madeira; Parkinſon ſays it was often ſent him out of Turkey, and likewiſe out of Italy, and that he had two roots ſent him out of Spain by Guillaume Boel, which, as he ſaid, he gathered there.

It flowers here in march and april.] Miller ſays that he had never ſeen the flowers, though he tried many ways to procure them; that the bulbs are frequently brought over from Italy for ſale, but that he had not heard of any having flowered. [Cluſius does not ſay that he never ſaw but one root flower; but that the bulbs did not flower at Vienna unleſs they came freſh from Conſtantinople. Parkinſon calls it the Great Starre-flower of Arabia; and Ray, Great Arabian Star-flower.

15. This ſpecies, variety *a*, is figured in Houttuyn. 12. t. 82. fig. 3. and Profeſſor Jacquin has figured variety *β* on pl. 28 of his Hortus Vindobonenſis. The whole plant is ſmooth. Leaves ſeveral, weak, long-lanceolate, ſharp and thickiſh. Stem a foot high, of the thickneſs of a gooſe-quill, and glaucous. Raceme erect, nearly ſix inches long, thick, and elegantly thyrſiform. Peduncles an inch long. Bractes at their baſes of the ſame length and lanceolate. Flowers ſnow-white, with a ſpot of brownith yellow at the baſe of each petal. Sometimes (but not always) each alternate petal is narrower than the reſt. Germ blackiſh-green. Flowers ſlightly odorous.—Received by Jacquin from the Cape of Good Hope.

The variety *a*, figured in Houttuyn, ſeems chiefly to differ in being ſomewhat thinner or narrower in all its parts than the plant repreſented by Jacquin, and in having yellow flowers.

16. The whole plant is ſmooth. Leaves a foot and half long, an inch and half wide. Scape round, three feet high. Raceme a foot and half long: peduncles ſcattered, ſpreading during flowering, ſcarcely an inch in length. Bractes lanceolate, awl-ſhaped, the length of the peduncles, membranaceous. Petals half an inch long, white with a longitudinal green fillet. Filaments ſhorter than the petals, white. Style three-ſided, white, the length of the ſtamens.

Native of the Cape of Good Hope. Found there by Mr. Fr. Maſſon. Introduced in 1774. It flowers from february to auguſt [6].]

17. This has a pretty large, compreſſed bulbous root, from which come out many long narrow keeled leaves, of a dark green colour. The ſtalks are very thick and ſucculent, about a foot high, ſuſtaining ten or twelve flowers in a looſe ſpike, each hanging on a footſtalk an inch long. Petals white within, but of a grayiſh green on their outſide: within the petals is ſituated the bell-ſhaped nectarium compoſed of ſix leaves, out of which ariſe the ſix ſtamens, terminated by yellow anthers. As the capſules grow large, they are ſo heavy as to weigh the ſtalk to the ground. [They are ovate, three-cornered, black. Seeds globular, the ſize of Radiſh ſeed, without any tubercle at the navel, with ſmall excavations all over them, of a blackiſh brown colour [1].

Native of Italy.] It grows in great abundance in the kingdom of Naples, and is now become very common in England. The roots propagating ſo faſt by offſets and ſeeds as to become troubleſome weeds in gardens; and where the roots have been thrown out, they grow on dunghills and waſte places plentifully. [It is alſo become a denizon of Switzerland, is common in the meadows near Berne, and in the orchards about Geneva. I found it in april 1779 at Chatelaine. It was cultivated in England in 1633. Linneus ſays it was known at Naples about 1570. It flowers in april and may.]

18. This has an irregular tuberous root, varying greatly in form and ſize, covered with a dark brown ſkin, from which ſpring ſeveral leaves, upon pretty long foot-ſtalks, and having ſeveral longitudinal veins like Ribwort Plantain. The flower-ſtalks are ſlender, naked, and about a foot high, ſuſtaining ſeveral ſmall greeniſh-white flowers, formed in a looſe ſpike, ſtanding upon long ſlender pedicels. They come out in november, make but little appearance, and are not ſucceeded by ſeeds in England.

Native of the Cape of Good Hope. [Linneus remarks, that the ſtamens are connected into a cylinder.

19, 20, 21, 22, 23. Found at the Cape of Good Hope by Thunberg.

24. This is a very diſtinct plant with a ſimple one-flowered ſtem; leaves alternate filiform, all having a little bulb in the axils; flowers yellow, like thoſe of *O. minimum*, with awl-ſhaped petals.

Found by Pallas in muddy places that are dry by the Wolga and Jaick.

25. This reſembles O. minimum very much, but is quite diſtinct. Sheath looſe, fibrous, netted, ferruginous, ſurrounding the leaf and ſcape as it were with a cowl. Root-leaf ſlender, recurved, linear, channelled, longer than the ſcape and cyme. Stem-leaves three or four, as many as the flowers, of the ſame form with the root-leaf. Cyme of the ſame diviſion and number of flowers as in O. minimum. Flowers larger and handſomer than thoſe of O. luteum. Outer petals quite awl-ſhaped. The whole plant, except the flower, covered with a very ſmall hoary ſhaggineſs.—Found by Pallas in dry ſpots near Aſtrachan [4].

26. Bulb conical, fleſhy, white, a little larger than a hazel nut. Leaves radical, linear, flat, ſmooth, upright, a finger's length, ſhorter than the ſcape. Scape round, ſmooth, upright, a foot high or more. Flowers

upright,

[1] Gartner. [2] Hort. kew. [3] Retzius. [4] Linn. [5] Cluſius. [6] Hort. kew. [1] Gartner. [2] Linn. ſuppl.

upright, opening one after another, in a raceme of a finger's length or upwards. Bractes linear, ſhrivelling but permanent, ſhorter than the peduncles; which are capillary, erect, one-flowered, a line in length. Corolla blue-purple, ſpreading, permanent: petals lanceolate, a line in length. Filaments awl-ſhaped, erect, white, the length of the corolla, alternately broader at the baſe. Anthers ovate, twin. Germ ſuperior. Style awl-ſhaped, erect, white, the length of the corolla. Stigma ſimple, blunt, white. Capſule ovate, acute, three-ſided, ſix-ſtreaked, ſomewhat villoſe.

Native of Japan, about Jedo, Nagaſaki, &c. flowering in auguſt and ſeptember [1].

27. Bulb ovate, tunicated, an inch and half long. Leaves radical, ſubulate-linear, ſtrict, channelled, ſmooth. Scape quite ſimple, two feet high, ſtraight, round, many-grooved, naked. Flowers ſmall, violet, on ſhort pedicels. Bractes lanceolate, ſmall, permanent. Corolla inferior, deeply ſix-parted, erect. Stamens equal, entire, three alternate ones wider at the baſe. Capſule triangular-ovate, with one ſeed in each cell.—Native of China about Canton.

It is nearly allied to the preceding, but the flowers are by no means in a branched or racemed ſpike. The petals are neither diſtinct nor very ſpreading. The leaflet under each flower involves it, and is therefore rather a ſpathe than a bractе [2].

28, 29, 30, 31, 32, 33, 34. Found at the Cape of Good Hope by Thunberg [3].

35. Bulb whitiſh, reſembling in ſhape and ſize that of *Lachenalia tricolor*; from this ſpring three or four ſmooth, ſomewhat fleſhy, upright, dark-green leaves, about half an inch wide, and three or four inches long, edged with white, and, if magnified, appearing fringed with very fine villoſe hairs. Stalk naked, from eight to twelve inches high, ſupporting many flowers, which ſpring from the axils of large, hollow, pointed bractes, and opening one after another, keep the plant a conſiderable time in flower; they are uſually of a bright orange or gold colour, but ſometimes paler. All the filaments are dilated at the baſe, or rather ſit on a white glandular nectary, emarginate on the outſide.

Native of the Cape of Good Hope. Introduced by Meſſrs. Lee and Kennedy, a few years ſince. It flowers in january and february, and continues for ſeveral months [4].

Jacquin has figured five new ſpecies (giganteum, ſcilloides, revolutum, juncifolium, barbatum) in t. 87, 88, 89, 90, 91. of a magnificent work entitled Hortus Schoenbrunenſis.]

PROPAGATION AND CULTURE.

Several of theſe plants (3, 4, 5, 6, 7, 9, 12, 14, 17) are cultivated for ornament in the Engliſh gardens, and are hardy bulbs. They are propagated by offſets, which their roots commonly produce in great plenty. The beſt time to tranſplant them is july or auguſt, when their leaves are decayed; for if they are removed late in autumn, their fibres being ſhot out, they will be apt to ſuffer on being diſturbed. They ſhould have a light ſandy ſoil, not over-dunged. They may be mixed with other bulbs in the borders of the pleaſure-garden; and need not be tranſplanted oftener than every other year: for if they are taken up every year, they will not increaſe much, and if they are ſuffered to remain much longer unremoved, they will have ſo many offsets as to weaken the blowing roots. They may alſo be propagated from ſeeds, but the plants will not flower under three or four years.

The 3d, 4th, 5th, 14th and 17th, have in general no great beauty, but thriving in any ſituation, a few plants of each may be admitted for variety. The 3d, 5th and 17th will thrive in ſhade, but the 4th ſhould have an open ſituation. The 14th multiplies ſo faſt by offsets as to become a troubleſome weed.

The Cape ſorts (2, 15, 16, 18—23, 28—35) are alſo propagated by offsets, but being too tender to thrive in the open air, the roots muſt be planted in pots filled with light earth, and in autumn placed under a hot-bed frame, where they may be ſcreened from froſt, and in mild weather enjoy the free air. In the beginning of july the leaves and ſtalks generally decay, and then the roots may be taken up, and laid in a dry cool place till the end of auguſt, when they muſt be planted again.

[ORNITHOGALUM. See *Albuca*, *Hyponis*, *Melanthium*, *Scilla*.

ORNITHOPODIO AFFINIS. See *Aſtragalus*, *Hippocrepis*, *Ornithopus*.

ORNITHOPODIUM. See *Hedyſarum* and *Ornithopus*.

ORNITHOPUS. (*Ornithos* avis, *Bird's-foot*. *The legumes growing ſeveral together, in manner and ſhape like bird's claws.*)

Lin. gen. n. 884. *Reich. n.* 957. *Schreb. n.* 1199. *Juſſ.* 361. *Gærtn. t.* 155. Ornithopodium. *Tournef. t.* 224.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

CAL. *Uniſol* ſimple. *Perianth* one-leafed, tubular; *mouth* five-toothed, almoſt equal, permanent.

COR. papilionaceous. *Standard* obcordate, entire. *Wings* ovate, ſtraight, ſcarcely the ſize of the ſtandard. *Keel* compreſſed, very ſmall.

STAM. *Filaments* diadelphous (ſimple and nine-cleft). *Anthers* ſimple.

PIST. *Germ* linear. *Style* briſtle-ſhaped, aſcending. *Stigma* a terminating dot.

PER. *Legume* awl-ſhaped, round, bowed, jointed, intercepted by iſthmuſes, ſeparating by joints.

SEEDS ſolitary, roundiſh.

ESSENTIAL CHARACTER.

Legume jointed, round, bowed.

SPECIES.

1. Ornithopus perpuſillus. *Common Bird's-foot.*
   Lin. ſpec. 1049. *Fl. ſuec.* 670. *Reich.* 3. 494. *hort. cliff.* 364. *Hudſ. angl.* 321. *Wither. arr. ed.* 3. 640. *Curt. lond. n.* 64. *Lightf. ſcot.* 399. *Relh. cant. n.* 530. *Sibth. oxon. n.* 630. *Neck. gallob.* 309. *Pollich pal. n.* 692. *Fl. dan. t.* 730. *Krock. ſileſ. n.* 1192. *Sauv. monſp.* 236. *Villars dauph.* 3. 397. *Hall. helv. n.* 393. (Ornithopodium). *Berg. phyt.* 2. 193.
   Ornithopodium minus. *Bauh. pin.* 350. *Ger.* 1061. *emac.* 1241. 4. *Park. theat.* 1092. 2.
   O. perpuſillum. *Dalech. hiſt.* 487.
   β. O. majus. *Bauh. pin.* 350. *Mor. hiſt. ſ.* 2. *t.* 10. *f.* 13. *Ger. emac.* 1241. 3. *Park. theat.* 1092. 1. *Dod. pempt.* 544.
   γ. O. nodoſus. *Mill. dict. n.* 2.
   O. radice tuberculis nodoſa. *Bauh. pin.* 250. *Kniph. cent.* 7. *n.* 66.
   O. rad. nodoſa. *Park. theat.* 1093. *Raii hiſt.* 931. *ſyn.* 326.
   O. tuberoſum Dalechampii. *Bauh. hiſt.* 2. 351.
   Leaves pinnate, legumes bowed inwards.
2. Ornithopus compreſſus. *Hairy Bird's-foot.*
   Lin. ſpec. 1049. *Fl. ſuec.* 670. *Reich.* 3. 495. *hort. cliff.* 364. *Sauv. monſp.* 236. *Berg. phyt.* 2. 191. *Allion. pedem. n.* 1245.
   Ornithopodio affinis hirſuta ſcorpioides. *Bauh. pin.* 350. *Raii hiſt.* 932.
   Scorpioides leguminoſa. *Dalech. hiſt.* 493. *Bauh. hiſt.* 2. 349. *Ger.* 266. 2. *emac.* 1241. *f.* 5. *Park. theat.* 1095. *f.* 7.
   Leaves pinnate, legumes bowed back compreſſed wrinkled, braſile pinnate.
[3. Ornithopus durus.
   Cavan. ic. hiſp. 31. *n.* 45. *t.* 41. *f.* 2.
   Stem ſuffruticoſe, leaves pinnate glaucous ſomewhat fleſhy ſhorter than the peduncle.]
4. Ornithopus ſcorpioides. *Purſlane-leaved Bird's-foot.*
   Lin. ſpec. 1049. *Fl. ſuec.* 670. *Reich.* 3. 495. *hort. cliff.* 364. *upſ.* 234. *Gærtn. fruct.* 2. 345. *Scop. carn. n.* 914. *Villars dauph.* 3. 398. *Cavan. ic. hiſp.* 26. *n.* 39. *t.* 37. *Berg. phyt.* 2. 187. *Allion. pedem. n.* 1246.
   O. triſoliatus. *Lamarck. flor. franc.* 2. 659. *n.* 634. § 4.
   Ornithopodium portulacæ folio. *Tournef. inſt.* 400. *Mor. hiſt. ſ.* 2. *t.* 11. *f.* 5.

[1] Thunberg. [2] Loureiro. [3] Prodr. cap. [4] Curtis.

Scorpioides. *Matib.* 801. *Dalech.* 1353. *Dod. pempt.* 71. 3. *Camer. epit.* 1002. *Riv. tetr. t.* 96. *Ger.* 266. 1. *emac.* 337. *f.* 2. *Park. theat.* 1117. *f.* 3. *Raii hift* 931.

S. portulacæ folio. *Bauh. pin.* 287.

Leaves ternate fubfeffile, the end leaflet very large.

[5. Ornithopus tetraphyllus.

Lin. fpec. 1049. *Reich.* 3. 495. *amoen.* 5. 402. *Sloan. jam.* 1. 186. *t.* 116. *f.* 3.

Leaves in fours, flowers folitary.

DESCRIPTIONS, &c.

1. Common Bird's-foot has an annual ſlender root, nearly as long as the ſtem, with few long whitiſh lateral fibres. Stems ſeveral, trailing, from one to ſix inches in length, ſimple, round, pubeſcent. Root-leaves numerous, proſtrate, ſometimes on ſhort petioles: thoſe on the ſtem alternate, ſeſſile. Leaflets ovate or elliptic, oppoſite or alternate, ſomewhat keeled, appearing hairy when magnified, ſometimes blotched with purple; from three to fourteen pairs, uſually from ſix to nine, generally terminated by an odd one, which is ſmaller. Flowers ſmall, one to five in a bunch, commonly two or three, terminating, oppoſite to a leaf; on peduncles nearly of the ſame length with the leaf. Corolla variegated with white, red and yellow; ſtandard reddiſh white, marked with crimſon lines, ſlightly notched at the end, the claw yelloviſh brown; wings white with a reddiſh tinge; keel pale ſtraw-colour: ſometimes it is entirely yellow. Calyx hairy. Legume with croſs diviſions, ſeparating at the joints. Seeds about ſix, one in each joint. It is an elegant little plant, with pretty flowers, and ſingular ſeed-veſſels reſembling the claws of a bird, whence its name. It is not uncommon on dry heaths, commons and downs, on banks and by road ſides, eſpecially in a gravelly or ſandy ſoil: and flowers from may to ſeptember. It varies much in ſize, and has ſometimes little knobs adhering to the roots; but this is common in leguminous plants [a]. Hence authors have diſtinguiſhed it into three, and Mr. Miller into two ſpecies.]

2. The root of this runs deep into the ground, ſending out a few ſmall fibres on the ſide; the ſtalks are about ſix inches long, and do not lie flat on the ground like the preceding: the leaves are compoſed of ten or twelve pairs of narrow hairy leaflets, with an odd one at the end; the flowers grow in ſmall bunches at the ends of the branches, they are yellow, and are generally ſucceeded by two flat pods not much more than an inch long, turned inwards like a bird's claws.

[According to Linnæus, the plant is tomentoſe; the leaflets ſeſſile; the peduncles ſhorter than the leaf; and the flowers commonly two.

It is an annual plant, native of the South of Europe, flowers in june and july, and was cultivated by Mr. Miller in 1731 [b].

3. Root whitiſh, round, gradually ſharper, fibrous, an inch and half in length. Stems branching, ſuffruticoſe, erect, very ſmooth, three or four inches high. Leaves unequally pinnate; pinnules nine ovate, the two lower orbiculate. Stipules two ſcarioſe, ſhort, deciduous, conate at the baſe, and half embracing the ſtem. Flowers in a ſort of umbel: common peduncle an inch long, axillary, ſolitary, erect, longer than the leaf, ſupporting one, two or three ſmall flowers at the end. Calyx ſmooth, the two upper teeth very ſmall. Corolla deep yellow: ſtandard ovate, plaited, with lines of the ſame colour on the outſide; wings ovate, concave, approximating to and ſhorter than the ſtandard, the claws of all very ſhort; keel ſhorter with a bifid baſe. Germ oblong: ſtyle from recurved upright: ſtigma acute. Legume ſpiral, round. Seeds oblong, cylindrical, ruſeſcent.

It ſeems to be allied to Coronilla minima *Linn. Jacq. auſtr. t.* 271. but is abundantly diſtinct from it in the fruit.

Native of Spain, on hills, flowering and fruiting in june [c].]

4. This has many ſmooth branching ſtalks, which riſe near two feet high, and towards the top have trifoliate oval leaves ſitting cloſe, with two ſmall appendages. The lower leaves are often ſingle, and of a grayiſh colour, the middle leaflet being twice the ſize of the two ſide ones. The flowers ſtand upon ſlender peduncles, are yellow, and ſucceeded by taper pods two inches long.

[Root annual, round with ſeſſile tubercles, fibrous. Stems branched, half a foot high, herbaceous, erect or diffuſed. The whole plant is ſmooth. Leaves ternate, ſubſeſſile, the lateral leaflets orbicular, the middle one many times longer, ovate; all quite entire, bright green. Stipule oppoſite to the leaf, membranaceous, pellucid, ſheathing the ſtem, bifid at top. According to Linnæus, the leaves are ternate, or rather ſimple, petioled, with roundiſh ſtipules. Flowers umbelled: common peduncle axillary, ſolitary, longer than the leaf, naked, having from two to four flowers at top on very ſhort pedicels. The three lower toothlets of the calyx a little ſhorter than the other two. Corolla deep yellow: ſtandard ovate, entire, from erect reflex, with ſtreaks of a deeper colour, and a ſhort claw; wings ſhorter than the ſtandard, converging, concave; keel very ſhort, bifid at bottom. Germ linear: ſtyle ſetaceous, aſcending: ſtigma a brown terminating dot. Legume awl-ſhaped, round, pendulous, a little bowed, jointed. Seeds ovate [d].

According to Gærtner, the legume is about two inches in length, ſlender, awl-ſhaped, grooved and angular, bowed, jointed, but ſcarceiy ſeparating ſpontaneouſly at the joints; which are ſix or eight in number, oblong, one-celled, valveleſs; the laſt very ſmall, ſterile, clawed. Seeds oblong, ſomewhat compreſſed, ſlightly curved inwards, ſmooth, blackiſh: navel in the middle with a convex margin, faſtened to the edge of the cell at the outer future.

Native of the South of Europe, among corn and on the borders of fields. Cultivated in 1656 by Mr. John Tradeſcant, junior. It flowers in june and july [e].

5. This riſes to about a foot high, being erect, branched, and having twigs ſet with leaves alternately, on petioles three quarters of an inch long: leaflets ſmall, obcordate, yelloviſh green, ſmooth, with a prominent midrib on the lower ſurface. Flowers yellow, ſolitary from the upper axils [f].

Linnæus remarks, that having an opportunity of examining the plant only in a dry ſtate, he could not aſcertain whether it belonged to this genus or another, or whether it ought to form a new one.

Native of Jamaica.]

PROPOGATION AND CULTURE.

Theſe plants (except the fifth) are propagated by ſowing their ſeeds in the ſpring, upon a bed of light freſh earth, where they are to remain. When the plants come up, clear them from weeds, and thin them to about ten inches diſtance. In june they will flower, and the ſeeds will ripen in auguſt. There is no great beauty in them, but for the variety of their jointed pods they are preſerved in ſome pleaſure-gardens. They are annual plants, and periſh ſoon after the ſeeds are ripe.

[ORNUS. See *Fraxinus.*]

OROBANCHE (*of Pliny.* Ορόβαγχος *of Theophraſtus and Dioſcorides. From* ὄρος *Orobus. and* ἄγχω *ſtrangulo: becauſe it is ſuppoſed to ſtrangle the plants to which it fixes itſelf.*)

Lin. gen. n. 779. *Reich. n.* 841. *Schreb. n.* 1045. *Tournef. t.* 81. *Juſſ.* 101. Aphyllon. *Mitch.* 25.

Claſſ. 14. 2. Didynamia Angioſpermia.

[Nat. order of *Perſonatæ. Pediculares*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, two or five-cleft, erect, coloured, permanent.

COR. one-petalled, ringent: *tube* inclined, wide, ventricoſe; *border* ſpreading: *upper lip* concave, open, emarginate: *lower lip* reflex, trifid, with an unequal margin; all the ſegments nearly equal.

STAM. *Filaments* four, awl-ſhaped, concealed beneath the upper lip; two of them longer. *Anthers* erect, converging, ſhorter than the border.

Neftary a gland at the baſe of the germ.

[a] Curtis, Stokes, Withering. [b] Hort. kew. [c] Cavanilles. [d] Idem. [e] Hort. kew. [f] Sloane.

PIST. *Germ* oblong. *Style* ſimple, length and ſituation of the ſtamens. *Stigma* ſemibifid, blunt, thickiſh, nodding.

PER. *Capſule* ovate-oblong, acuminate, one-celled, two-valved.

SEEDS numerous, very ſmall. *Receptacles* four, linear, lateral, adnate.

OBS. *Each ſegment of the ſtigma is emarginate.*

ESSENTIAL CHARACTER.

Cal. bifid. *Cor.* ringent. *Capſ.* one-celled, two-valved, many-ſeeded. *Gland* under the baſe of the germ.

SPECIES.

1. Orobanche major. *Common Broom-rape.*
Sutton in Lin. tranſ. 4. 175. *Curt. lond.* 4. *t.* 44. 232. *Wither. arr. ed.* 3. 557. *Engl. bot. t.* 421. *Huſſ. angl.* 265. *Lightf. ſcot.* 332.
O. major caryophyllum olens. *Baub. pin. Raii ſyn.* *288. *Petiv. brit. t.* 69. *f.* 10.
O. ſ. Rapum geniſtæ. *Ger.* 1130. 2. *Raii hiſt.* 1227.
O. *Matth.* 536. *Tabern.* 684.
Stem quite ſimple, corollas quadrifid inflated, ſtamens naked below, ſtigma with two diſtant lobes, ſtyle pubeſcent above.

2. Orobanche elatior. *Tall Broom-rape.*
Sutton in Lin. tranſ. 4. 178. *t.* 17. *f.* 4.
Stem quite ſimple, corollas quadrifid, ſtamens with glandular hairs below, ſtigma obcordate, ſtyle ſmooth above.

3. Orobanche caryophyllacea. *Cleve Broom-rape.*
Smith in Lin. tranſ. 4. 169. *Tour* 2. 308.
O. major. *Pollich pal. n.* 600. *Villars dauph.* 2. 407. 6.
O. major, caryophyllum olens. *Baub. pin.* 87.
Stem ſimple, corolla inflated fringed and curled, ſegments of the lower lip blunt and equal, ſtamens hirſute at the baſe within.

4. Orobanche gracilis. *Slender Broom-rape.*
Smith in Lin. tranſ. 4. 172.
Stem ſimple, corolla inflated, lower lip very ſhort with the ſegments obcordate unequal fringed and curled, ſtamens and ſtyle with hairs ſtanding out.

5. Orobanche minor. *Small Broom-rape.*
Sutton in Lin. tranſ. 4. 179. *t.* 17. *f.* 1, 2, 3. *Engl. bot. t.* 422.
O. major. *Læſt. hiſp. n.* 35.
O. major β. *Hall. helv. ed.* 1. 610. 2. *n.* 295. *Huſſ. angl ed.* 1. 232?
O. flore minore. *Raii ſyn.* *288. 2. *hiſt.* 1227.
O. ramoſa β. *Huſſ. angl ed.* 2. 266?
Stem quite ſimple, corollas quadrifid, ſtamens with glandular hairs below, ſtigma retuſe, ſtyle ſmooth above.

6. Orobanche americana. *American Broom-rape.*
Lin. ſyſt. 573. *Reich.* 3. 184. *mant.* 88.
Stem quite ſimple imbricate with leaves, corollas recurved, ſtamens ſtanding out.

7. Orobanche cernua. *Drooping Broom-rape.*
Lin. ſpec. 882. *Reich.* 3. 184. *Læſt. it.* 2. 329.
Stem quite ſimple, corollas recurved, bractles ovate ſhorter than the corolla, ſtem almoſt naked.

8. Orobanche purpurea. *Purple Broom-rape.*
Lin. ſyſt. 573. *ſuppl.* 288.
Stem ſimple and branched, corollas quadrifid, ſtamens ſpurred.

9. Orobanche coerulea. *Blue Broom-rape.*
Sutton in Lin. tranſ. 4. 182. *Engl. bot. t.* 423. *Villars dauph.* 2. 406. *Hall. helv. n.* 294.
O. purpurea. *Jacqu. auſtr. t.* 276. *vind.* 50.
O. purpuraſcens. *Lin. ſyſt. ed. Gmel.* 954.
O. lævis. *Lin. ſpec.* 882? *ſyſt.* 573. *Reich.* 3. 183.
O. ramoſa 2. *Wither. arr. ed.* 3. 558.
O. flor. cæruleis laxe ſpicatis. *Gmel. ſib.* 3. 215. *t.* 46. *f.* 1.
O. ſubcærulea flore, ſ. ſecunda Cluſii. *Magn. bot. monſp.* 196.
O. magna purpurea monſpeſſulana. *Bauh. hiſt.* 2. 782. ic. non deſc.
O. majore flore. *Baub. pin.* 88. *Raii hiſt.* 1227. 3.
O. caule ſimplici cæruleo, bracteis brevibus. *Sauv. meth.* 4.
Stem commonly ſimple, corollas quinquefid, bractles by threes, calyxes tubular half quadrifid.

10. Orobanche ramoſa. *Branched Broom-rape.*
Lin. ſpec. 882. *Reich.* 3. 184. *Huſſ. angl.* 266. *Wither. arr. ed.* 3. 558. *Engl. bot. t.* 184. *Sutton in Lin. tranſ.* 4. 185. *Hall. helv. n.* 296. *Pollich pal. n.* 601. *Villars dauph.* 2. 408. *Baub. pin.* 88. *Raii ſyn.* *288. *hiſt.* 1227.
Stem branched, corollas quinquefid, bractles by threes, calyxes ſhort deeply quadrifid.

11. Orobanche tinctoria.
Vahl ſymb. 2. 70. *Forſk. deſcr.* 112.
Stem quite ſimple imbricate, calyxes quinquefid blunt, corollas quinquefid, lobes quite entire.

12. Orobanche virginiana. *Virginian Broom-rape.*
Lin. ſpec. 882. *Reich.* 3. 185. *Gron. virg.* 168. *Mor. hiſt.* 3. 502. *ſ.* 12. *t.* 16. *f.* 9. *Raii ſuppl.* 595.
Stem branched, corollas four-toothed.

13. Orobanche uniflora. *One-flowered Broom-rape.*
Lin. ſpec. 882. *ſyſt.* 574. *Reich.* 3. 185. *Raii ſuppl.* 595.
Dentariæ ſ. Ambiato Cordi affinis, flore pallide cæruleo. *Gron. virg.* 70.
Gentiana minor aurea, &c. *Pluk. mant.* 348. *f.* 3.
Aphyllon. *Mitch.* 25.
Stem one-flowered, calyxes naked.

14. Orobanche Ægineta.
Lin. ſpec. 883. *Reich.* 3. 185.
Ægineta. *Lin. ſpec. ed.* 1. 632.
Tsiam-Cumulu. *Rheed. mal.* 11. 97. *t.* 47.
Stem one-flowered, flower ſubſpathaceous.

DESCRIPTIONS, &c.

Juſſieu deſcribes the plants of this genus as fleſhy herbs of a ruſſet-colour, and faſtening themſelves to the roots of other plants. Root tuberous, imbricate with ſcales. Stem with alternate ſcales on it, generally ſimple. Flowers in terminating ſpikes, ſupported by bractles. Some of the ſpecies have a naked one-flowered ſcape, with a ſpathaceous flower, and are akin to the one-flowered Lathræas. Thunberg deſcribes a plant reſembling an Orobanche under the name of Phelypæa.—See Lathræa Phelypæa.

The Rev. Charles Sutton, who has beſtowed great attention on this genus, obſerves that theſe plants are not ſtrictly Paraſitic, as Epidendrum, Viſcum, &c. are; for they acquire ſuſtenance and ſtability not only from the ſoſter-plants to which they are attached, but alſo, and that in no ſmall degree, from the ſoil, into which they ſend forth radical fibres: that they exhibit an ungraceful formality from the want of leaves, and have their ſurface more or leſs beſet with minute pellucid glandulifcrous hairs, which project perpendicularly from the ſtems, ſcales, bractles, calyx and corolla, and are ſometimes found within the flowers, upon the very ſtamens and piſtils; theſe, according to the remarks of Guettard, have each an articulation at the diſtance of about two thirds from their baſe, and are tipped with a globular ſort of cup, bearing a viſcid gland: we may ſuppoſe them to be intended to carry off ſecretions, and to anſwer the purpoſes of leaves in performing the offices of reſpiration, &c. They have an acrid aſtringent taſte, and are rejected by all animals, except the minuter tribes of *Cimices* and *Thripſes*. He remarks laſtly that they are acotyledonous; for, when a ſeed has attached itſelf to the root of any living plant, to which it is ſuited by its nature to adhere, it ſwells into a pellucid ſcaly germ or bulb: and after throwing out around the point of adheſion ſeveral tender fibres, it puſhes up at once into a perfect plant, without any lateral lobes or cotyledons: developing firſt the ſcales and then the ſtalk, with a head of flowers concealed by bractles, in form reſembling a young head of Aſparagus: the flowers afterwards expand in ſucceſſion upwards, and the head becomes a ſpike. Adanſon has claſſed this genus among his Monocotyledones[f]; and Juſſieu among his Dicotyledones.

It is ſingular that theſe plants ſhould attach themſelves to ſhrubs and herbs of the claſs Diadelphia chiefly. Mr. Sutton ſays he has had no experience of

[f] Linn. tranſ. 4. 173.

the common notion of the baneſulneſs of Orobanche, in deſtroying the plants that feed it: the learned Dr. William Turner however affirms, that notwithſtanding he has not ſeen any Broom choked with this herb, that he has obſerved Clover to be utterly ſtrangled, and all the natural juice to be clean drawn out by it; he therefore calls it Choke-weed [s].

Dr. Smith having ſhown that no ſuch plant as Orobanche lævis exiſts [t], it is here omitted.

1. Our common Broom-rape has a large thick fleſhy oval ſcaly root, ſometimes bulbous, adhering to the woody roots of Broom and Furze for the moſt part; "the which (as Turner ſpeaks) it claſpeth "aboute with certaine lyttel rootes on everye ſide "lyke a dogge holdying a bone in his mouth." It is furniſhed with ſimple fibres, which are very brittle. Stems ſeveral, upright, fleſhy, hollow, channelled or angular, hairy, the thickneſs of a finger, from eight inches or a foot to eighteen inches in height, of a duſky yellow or ruſt-colour tinged with purple, cloathed with lanceolate ſcattered ſcales, which are much cloſer under ground. Flowers in ſpikes, at firſt pointed but afterwards cylindrical; they are ſeſſile, hairy, browniſh ruſt-colour, with a purpliſh tinge for the moſt part; when old they become ſtiff and of a dirty ruſt colour. Bractes lanceolate, acuminate, hairy, generally longer than the flowers. Calyx almoſt equal, hairy, two-leaved, the lateral one with the leaflets deeply bifid, the ſegments acute and unequal: varying with one leaf, four-cleft, poſteriorly divided to the very baſe.

Mr. Woodward deſcribes it with four teeth, the two outer longer and ſharper, the lower blunt; and Mr. Curtis, as one-leafed, divided into four ſegments, poſteriorly quite down to the baſe, and anteriorly more deeply than at the ſides; villoſe, whitiſh, the ſegments or teeth nearly equal and ferruginous. Corolla hairy: tube inflated upwards, curved in, ſlightly keeled at the back; mouth very open; border two-lipped, obſoletely toothletted; upper lip arched, blunt, entire, a little reflex; lower lip three-lobed, the lobes nearly equal, acute, flattiſh, the middle one hanging down. Filaments hairy at top, but quite naked at bottom, channelled, flat, the two ſhorter inſerted into the ſides, the two longer into the front of the tube, decurrent, recurved at top. Anthers twin, mucronate at one of the tips, adhering ſlightly, ſtraw-coloured; finally, together with the ſtyle, ſtanding out. Germ ſhining, ſomewhat hairy. Style alſo ſomewhat hairy, pubeſcent at top, purpliſh. Stigma two-lobed; the lobes globular, yellow, diſtant, divided tranſverſely along the middle. Capſule opening longitudinally. Seeds ſubturbinate, netted-cellular.—Mr. Curtis remarks, that the germ is marked anteriorly at the baſe with three prominent yellow glands, which pour forth plentifully a ſweet liquor; that it varies in ſize according to the ſize of the root it grows on; the ſtem being ſometimes almoſt as thick as the human thumb, and at other times not much larger than a wheat-ſtraw; and that the flowers vary much in their colour, but are moſtly dead purple or yelloviſh [u].

Such is our Engliſh Broom-rape, which is ſuppoſed not to be the Orobanche major of Linnæus and ſome other foreign botaniſts.

It is found in dry barren ground, generally at the roots of Broom or Furze, flowering in June.

2. Tall Broom-rape has a root like that of the preceding, adhering moſtly to the woody roots of *Centaurea Scabioſa* and Trifolium pratenſe. Stem alſo like that of the preceding, but taller. Flowers in a long ſpike, hairy, of a pale ruſſet or feuillemort colour, with darker veins, and pale yellow ſtigmas; afterwards they become ſtiff, ſomewhat compreſſed, and ruſt-coloured; ſometimes there are upwards of a *hundred of them in a ſpike*. Bractes as in the preceding. Calyx abbreviated, hairy, one-leafed, four-cleft, behind divided to the very baſe, with the ſegments lanceolate, acuminate, the two poſterior ones divaricating and longiſh; it is ſlightly ſtriated, dirty dirty white with pale-red lines. Corolla four-cleft hairy: tube cylindrical recurved, keeled at the back; mouth open; border two-lipped, unequal, fringed and curled; upper lip rounded, reflex, entire; lower three-lobed, the lobes equal and rounded. Nectary, four glands inſerted into the tube at the baſe of the filaments; which are ſmooth and naked in front, hairy at the baſe behind, the hairs not glandular; the two ſhorter filaments are inſerted into the ſides, the two longer into the anterior part of the tube. Anthers twin, mucronate at one of the tips, ſlightly adhering; finally ſtanding out along with the ſtyle. Germ ovate, ſmooth, naked. Style ſmooth, naked. Stigma two-lobed, obcordate, yellow, tranſverſely cloven along the middle. Seeds wrinkled, or obſoletely netted.

It is found among Clover, but not the firſt year; alſo on the borders of corn fields by *Centaurea Scabioſa* and *nigra*, *Scabioſa arvenſis*, &c. flowering in july and auguſt, and is no uncommon plant, but has been confounded with the preceding, although notwithſtanding they are ſimilar in general appearance, the difference is very diſcernible on a cloſer inſpection. There is reaſon to ſuppoſe it may have been noticed by Ray very early; for in his Cambridge catalogue, printed in 1660, he ſpeaks of having found the *O. flore majore* in a field of barley between Cambridge and Granchester, and in a corn field at Cherry-hinton, places in which this ſpecies is very likely to be found, as it grows among herbaceous plants, and never on the roots of Broom or Furze. He adds, alſo at Gamlingay, at the roots of Broom plentifully: here he undoubtedly means our *O. major*, for that is ſtill found there in great abundance. In his *Catalogus Plantarum Angliæ*, publiſhed ten years afterwards, he notices them thus; "ad radices geniſtæ, interdum et inter legetes [x]. The ſame notice is continued in the third edition of the Synopſis by Dillenius. They were not therefore ever conſidered as diſtinct ſpecies by theſe celebrated botaniſts.

3. Root bulbous, covered with ſcales. Stem upright, not branched, more than a palm in height, five lines thick at the baſe, ſomewhat angular, ſolid within, yelloviſh white, ſlightly pubeſcent; having inſtead of leaves ſcales, which are ovate, acuminate, yelloviſh white, ſcattered and ſeſſile. Flowers ſolitary, alternate, ſeſſile, erect, forming a looſe ſpike, cloſer at top; ſometimes there are two or three flowers together from a bracte, and about twenty-two in the whole ſpike; they are half an inch in diameter, above ſeven lines in width, and an inch in length. Bractes lanceolate, the length of the flowers, yelloviſh brown. Calyx whitiſh tinged with pale red, pubeſcent all over on the outſide, ciliate on the edge, conſiſting of two ſegments at the baſe irregularly toothed; the two lateral teeth larger than the others and ſharp. Corolla whitiſh, very pale purple at top, with a ſmall mixture of yellow, pubeſcent on the outſide: upper lip blunt, multifid, crenulate, waved, with pale purple veins on the inſide; lower lip trifid, waved, the edge brown, ſerrulate, lobed, the middle ſegment a little longer. Filaments bent, white, pubeſcent. Anthers yelloviſh brown. Germ ovate, ſmooth. Style pubeſcent. Stigma bifid, blackiſh, bent in. Capſule ovate, blunt, ſurrounded by the calyx and corolla, ſhrivelled and permanent. Seeds orbicular, ſmooth, duſky. It has a ſtrong ſmell of Cloves [y].

O. caryophyllacea agrees very nearly with *O. major* in habit and ſize, as well as in the appearance of the flowers; but differs in having the three ſegments of the lower lip obtuſe, and much more fringed and curled. The germ alſo is entirely ſmooth, which in *O. major* is hairy in the upper part, and the ſtyle is much leſs downy than in that ſpecies. But the moſt ſtriking mark conſiſts in the lower part of the ſtamens, on the inſide, being thickly clothed with hairs, whereas in *O. major* it is always perfectly ſmooth. The ſtigma of this is brown or purpliſh; that of *O. major* is yellow.

This has been ſo generally confounded with our *O. major* by foreigners, that it is impoſſible to allot to

[s] Linn. tranſ. 174-175. [t] Idem. 164.
[u] Sutton in Linn. tranſ. Curtis Lond. Woodw. Mſs. Reli. cant.
[x] Sutton in Linn. tranſ. [y] Pollich.

each

each its proper ſynonyms, no botaniſt having properly deſcribed the ſtamens, in which the true character reſides; much leſs do the figures of old authors lend any aſſiſtance towards this diſcrimination. The *caryophyllacea* is ſo named from its having a very ſtrong and fragrant ſmell of Cloves when freſh; whereas our plant has not the leaſt degree of that ſmell, though ſome Engliſh writers affirm that it has a faint ſmell of Cloves.

It was gathered by Dr. Smith on ſhrubby hills near Valcimara at the foot of the Apennines, in april 1787. Linnæus received it from Siberia[a]. Pollich found it about Lautereen in the Palatinate, in dry paſtures, orchards, corn-fields, and among hemp; flowering in may and june. Probably in other parts of Europe, but not ſo common as the firſt ſpecies.

4. This has a taller and more ſlender ſtem than *O. major*, and is upon the whole leſs pubeſcent. The bractes are ſhorter than the flowers. Corolla the ſize of *O. major*, but the upper lip is of a dark or purpliſh colour, and leſs fimbriated or criſped. The lower lip is remarkably ſhort, in three obcordate fimbriated ſegments, of which the middle one is larger than the other two, and is connected at its baſe with the very prominent two-lobed palate of the flower. The ſtamens are ſlender, thinly clothed all over, as well as the ſtyle, with ſcattered hairs, and project out of the mouth of the flower. The germ is ſmooth.

O. graciliſ has moſt affinity to the *minor* in ſome of its characters, but differs in its larger inflated corolla, ſhort lower lip, longer ſtamens and hairy ſtyle.

Gathered by Dr. Smith in hilly paſtures at St. Orſeſe near Genoa, in july 1787[b].

5. Root like thoſe of *O. major* and *elatior*, only with fewer ſcales, adhering for the moſt part to the woody root of *Trifolium pratenſe*. Stem from ſix to twelve inches high, erect, roundiſh, hairy, almoſt the thickneſs of a gooſe quill, fleſh-coloured, or ſometimes yellow, ſcaly but with fewer ſcales: there are ſeveral of them ſometimes aggregate. Flowers in ſpikes, whitiſh yellow with purple veins, hairy; varying of a full yellow; finally becoming rigid, and ferruginous: the lower flower is often pedunculed. Bractes ſimple, lanceolate, hairy, almoſt the length of the flowers. Calyx almoſt equal, of the ſame colour with the ſtem, hairy, two-leaved, lateral, with the leaflets ſometimes bifid; the ſegments very narrow, unequal; ſometimes ſimple, lanceolate, entire, or gaſhed on one ſide. Corolla four-cleft, hairy: tube cylindrical, ſpreading, incurved, keeled at the back: mouth open: border two-lipped, unequal; upper lip rounded, crenulate, entire; lower trifid; the ſegments equal, rounded, crenulate; varying ſometimes with the middle ſegment three-lobed. Nectary four ſaffron-coloured glands at the baſe of the filaments; which are ſmooth and naked in front, hairy behind, the hairs not glanduliferous; the two ſhorter inſerted into the ſides, the two longer into the anterior part of the tube. Anthers twin, mucronate at one of the tips; finally ſtanding out together with the ſtyle. Germ ovate-oblong, naked; ſtyle filiform, almoſt naked; ſtigma retuſe, dilated at the edge, purple, with a tranſverſe cleft along the middle; ſometimes it becomes triangular or ſquare. Capſule as in the others. Seeds wrinkled or obſoletely netted. It differs from *elatior* in its two-leaved variable calyx; from *major* in its cylindrical corolla; from both, in the ſmallneſs of the corolla.

It is frequently found with a much longer ſpike than it is repreſented with in Engliſh Botany; in which caſe the flowers are not only more numerous, but much cloſer ſet than in that figure. From its growing ſo very copiouſly among Clover it is probably the ſame which Dr. Turner noticed as being ſo pernicious to it. Dr. Smith remarks that this is the only ſpecies growing in ſuch ſituations or in ſuch abundance as to be deemed a weed. None of the other old Herbaliſts have mentioned it, nor has it been introduced into any of our Britiſh Floras, if we except Hudſon, who is thought to have it in his firſt edition; but from his uncertainty reſpecting it afterwards, it ſhould ſeem he took it upon truſt from Dillenius, who, in his edition of Ray's ſynopſis, ſpeaks of its being found in a field of oats near Rocheſter.

It might poſſibly not be unknown to Ray: for having deſcribed *O. majore flore* of John Bauhin, he adds that *O. flore minore* of the ſame author differs ſo little from it, that he can ſcarcely believe it to be a diſtinct ſpecies[c]. There is little doubt of its being different from thoſe above deſcribed.

It is found in fields of Clover, but not the firſt year; alſo in paſtures with *Hypochœris radicata*. It is in the Linnæan herbarium under the name of *Orobanche major*, and was given to Linnæus by Loefling. July and auguſt are the months of its flowering[d].

Vahl has an *Orobanche* which he gathered in the fields about Tunis, eſpecially among Beans. Although it differs in ſize and colour from *O. major*, yet he does not diſtinguiſh it ſpecifically from that. He frequently found it without ſcent, which is alſo the caſe in *O. major*, the ſtamens are included, as in that, and the anthers are awned in ſeveral of the ſpecies. The ſtems are a foot high or more, the thickneſs of the little finger, and the whole plant is of a duſky purple colour[e].

Micheli, in a little treatiſe on this genus, publiſhed in the Italian language at Florence in 1723, enumerates many varieties, among which probably ſome of the above ſpecies may be found. Gmelin, in his Flora Sibirica, has alſo ſeveral varieties. Haller has a variety of his n. 295. which is probably a diſtinct ſpecies, or a variety of our O. caryophyllacea[f]. Theſe obſcure notices ſolicit farther enquiry.

6. Stems ſcarcely ſo thick as the human finger, a ſpan high, round, coloured, ſucculent, imbricated all over with ovate-lanceolate, ſeſſile, acuminate, erect, coloured, ſhrivelling leaves. Spike ſeſſile, terminating, the length of the ſtem, imbricate with the fructifications. Bractes ſolitary, lanceolate, almoſt the length of the corolla. Flowers ſubſeſſile. Calyx ventricoſe, with the margin entire. Corolla incurved, with the border narrower; upper lip longer, lower two-parted, erect. The whole plant with the fructification yellow.

Found in Carolina at the roots of trees and ſhrubs, by Dr. Garden. Linneus received one very like it from Siberia, ſcarcely to be diſtinguiſhed except in the bluntneſs of the leaves[g].

7. Native of Spain and Siberia[h].

8. This is of a red purple when freſh, but turns black in drying. The flowers are large.—It was found at the Cape of Good Hope by Thunberg[i].

9. Root as in the other ſpecies, with fibres embracing the roots of different herbs. Stem from ſix to ten inches high, erect, rigid, ſomewhat hairy, a little flexuoſe, angular, ſomewhat woody, of a yellow olive colour, the thickneſs of a gooſe or ſwan's quill; the ſcales on it ovate-lanceolate. Flowers in looſe bluntiſh ſpikes, violet with deeper-coloured veins, ſlightly hairy, like thoſe of *O. ramoſa* but larger; becoming finally twiſted, compreſſed, drooping, duſky; the lower flower is often pedunculed. Bractes ſcarcely equal to the calyx, the two lateral ones interior, linear-lanceolate, the middle one exterior, ovate-lanceolate, with ſhort hairs. Calyx of the ſame colour with the ſtem, the four ſegments equal, lanceolate, acuminate, hairy, with the rudiment of a fifth at the deeper poſterior inciſure; ſometimes, but ſeldom, it is five-cleft with the rudiment of a ſixth ſegment behind. Corolla hairy, twice as long as the calyx; tube round below, gradually widening upwards, compreſſed-triangular, ſharply keeled at the back, bluntly incurved in the middle; mouth gaping; border two-lipped, almoſt equal; upper lip bifid; the ſegments bluntiſh, reflex, toothletted, lower three-lobed, with the ſegments equal, ſharpiſh, palate ſilky, being covered with white hairs preſſed cloſe but not glanduliferous. Filaments filiform, naked, ſmooth, ſcarcely recurved, the two ſhorter inſerted into the ſides, the two longer

[a] Smith in Linn. tranſ. [b] Idem.

[c] Hiſt. 1227. [d] Sutton in Linn. tranſ. [e] Symb. 2. 70. [f] Smith in Linn. tranſ. 4. 170. 171. [g] Linn. mant. [h] Linn. ſpec. [i] Linn. ſuppl.

into the anterior part of the tube. Anthers whitiſh yellow, converging within the mouth, finally included. Germ ovate-oblong, naked, even: ſtyle filiform, incurved, ſomewhat hairy: ſtigma headed, white, two-fobed, without any cleft in it, cloſing the mouth. Capſule ovate-oblong, grooved along the middle, opening longitudinally. Seeds ſubturbinate, netted-cellular.

This and the next ſpecies differ from the five firſt in many reſpects: the upper lip of the corolla is divided, the ſhape of the flower is not cylindrical, the ſtamens are ſhort and filiform, the ſtigma has no apparent tranſverſe fiſſure, the calyx is tubular, the bractes are ternate, and the plants altogether leſs ſucculent, and perhaps leſs parafitic.

The ſtem in this ſpecies, though generally, is not always unbranched. The little that was known of it in England, till lately, was from Mr. Pitchford's ſpecimen found in 1779, at Northrepps, and from Mr. Lightfoot's, now in the poſſeſſion of the Queen. Being moſt allied to *ramoſa*, it was taken at firſt for a variety of that. In 1796 Mr. Scrimpſhire found ſeveral plants of it at Sheringham, and Mr. Sutton a few in the adjoining pariſh of Beeſton. It ſeems to be more generally found abroad, where it has uſually paſſed for *O. Lævis* of Linnæus. It grows among graſs in paſtures, and on the borders of fields [a], in Switzerland, Auſtria, Germany, and the South of France.

10. Root a ſolid bulb, elliptical, naked, or furniſhed with one or two ovate-lanceolate ſeſſile ſcales; and numerous ſhort thick fibres, affixed laterally, and intermixed with the ſlender fibres of the roots of Hemp or other annual plants, and ſometimes to thoſe of graſs. Stem a continuation of the bulb, nearly round, brown or dirty yellow, naked or furniſhed with very few ſcales, (from ſix to ten inches high, upright, ſomewhat flexuoſe, hairy, ſomewhat woody, yellow tinged with purple, the thickneſs nearly of a ſwan's quill.) Branches either immediately from the root or alternate on the ſtem, ſwelling at the baſe, nearly erect, ſimilar to the ſtem, with each a ſcale, as before deſcribed, at the baſe. Stem and branches terminated by a thick (ſharp) ſpike of ſeſſile flowers, each having an ovate-lanceolate ſomewhat carinated bracteal ſcale. (The bractes are by threes, as in the preceding, ſhort, ſcarcely equal to the calyx, membranaceous, ſoon becoming duſky, the two lateral ones interior, lanceolate, acuminate, the outer one ovate-lanceolate.) Calyx of four acute ſegments, of which the two outer are largeſt. Tube of the corolla bellying at the baſe and yellow; upper part and lips blueiſh purple, hairy on the outſide: upper lip roundiſh, bifid, lower broad, trifid, the middle ſegment largeſt, and with two yellowiſh prominencies at the mouth. Filaments within the tube, blueiſh with yellow anthers, nearly equal. Style ariſing from the oval germ, longer than the ſtamens, and bending towards them, blueiſh with a blunt ſtigma. Capſule oblong. The ſtem is ſometimes ſimple, though rarely without one or two lateral branches, and then almoſt without ſcales [b].

It is diſtinguiſhed from the preceding by its ſharp ſpikes, the few ſcales on the ſtem and branches, the calyxes and bractes being ſhorter by half than the corolla, the tube of which after flowering is globular at bottom [c].

Native of ſeveral parts of Europe, South of France, Switzerland, Germany, England. Near Beccles in Suffolk, by James Sherard, M. D. Iſle of Sheppey and near Feverſham and Rocheſter, in Kent, about Glaſtonbury, and in Devonſhire and Hampſhire, by Hudſon. In hemp-fields near Wiſbeach, by Relhan; and at Outwell, in Norfolk. Brome near Bungay in Suffolk, on the firſt of ſeptember 1784, by Mr. Woodward. Mr. Sutton remarks, that it was probably introduced into England with Hemp. Mr. Woodward found it on *Galeopſis Tetrahit*. Linnæus ſays it is found *in ſegetis*; Dr. Withering gives it to corn fields and dry paſtures. Mr. Sutton has not known it to be found in any other than a rich light moiſt ſoil, ſuch as Hemp generally grows in. He doubts whether *O. ramoſa* of Oſbeck be the ſame with ours.

11. Stem a ſpan high or more, the thickneſs of the little finger, ſmooth, covered with ſcattered ovate-lanceolate, ſmooth ſcales, the uppermoſt broader, ſometimes acuminate. Spike three inches long, thick. Flowers alternate, contiguous, imbricated. Bracte the length of the calyx, of the ſame ſtructure with the ſcales on the ſtem, under each flower; two linear, ſhorter at the baſe of the calyx. Calycine ſegments oblong, ſmooth, one-third of the length of the corolla; which is an inch and half long; the tube widening towards the border and curved; lobes of the border rounded and quite entire. Filaments ſhorter than the corolla, hirſute at the baſe. Anthers oblong, villoſe, terminated by a dagger point at the baſe. Germ oblong. Style the length of the filaments. Stigma large. It varies with blue and yellow corollas, and narrower bractes a little longer than the calyx.—Native of Arabia and Barbary [d].

12. From a thickiſh root compoſed of ſcales with fibres annexed ariſe ſeven or eight ſtalks, a palm and half or a long ſpan in height, ſlender, hard and woody, with ſharp and ſcarcely conſpicuous ſcales, one of which is placed as a bracte to each flower. Flowers oblong of an obſolete colour, covering the ſtem from the very root. Capſules ſmall, round, hard, on a very ſhort peduncle. Seeds round, pale yellow, very ſmall. Sent by Baniſter from Virginia [e].

13. Stem of a ſhining red. Flowers ſmall, conſiſting of ſix petals, five of which are red and the ſixth white, without any ſpots. Capſule yellow [f]. Linnæus remarks, that the ſheath is ſpathaceous; the flower pale blue and hanging down.—Native of Virginia, where it flowers in october.

There are many other North American Orobanches in the Supplement to Ray's hiſtory, found there by Dr. Krieg, Baniſter and Vernon.

14. Stems quite ſimple, ſtrict, round, with three lines, without any leaves, terminated by one flower. A ſpathe inveſts the flower.—Native of Malabar [g].

OROBANCHE. See *Hyobanche, Lathræa, Monotropa, Obolaria, Ophrys, Orchis, Teazia.*

OROBANCHOIDES. See *Monotropa.*]

OROBUS. (Ὄροβος *of Theophraſtus and Dioſcorides. From* ὀρύω *excito and* βοῦς, *bos; or* παρὰ τὸ ὀρύττεσθαι ὑπὸ τῶν βοῶν. *This herb, whatever it was, being uſed by the ancients in fatting oxen.*)

Lin. gen. n. 871. *Reich. n.* 945. *Schreb. n.* 1185. *Tournef. t.* 214. *Juſſ.* 360. *Gærtn. t.* 151.

Claſs. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, blunt at the baſe: *mouth* oblique, five-toothed, very ſhort; the three lower toothlets ſharper; the two upper ſhorter, more deeply and bluntly divided: ſhrivelling.

COR. papilionaceous: *banner* obcordate, reflex at the tip and ſides, longer: *wings* two, oblong, almoſt the length of the banner, riſing, converging: *keel* manifeſtly bifid below, acuminate, riſing; with the edges converging, parallel, compreſſed; the bottom ventricoſe.

STAM. *Filaments* diadelphous (ſimple and nine-cleft), aſcending. *Anthers* roundiſh.

PIST. *Germ* cylindrical, compreſſed. *Style* filiform, bent upwards, erect. *Stigma* linear, pubeſcent on the inner ſide from the middle to the top.

PER. *Legume* round, long, acuminate and aſcending at the end, one-celled, two-valved.

SEEDS very many, roundiſh.

ESSENTIAL CHARACTER.

Cal. blunt at the baſe; the upper teeth deeper and ſhorter. *Style* linear.

SPECIES.

1. Orobus lathyroides. *Upright Bitter-Vetch.*
Lin. ſpec. 1027. *Reich.* 3. 458. *hort. upſ.* 220. *Gmel. ſib.* 4. *p.* 12. *Pall. it. p.* 559. *Amm. ruth.* 151. *t.* 7. *f.* 2. (Lathyroides).
Leaves conjugate ſubſeſſile, ſtipule toothed.

[a] Sutton.
[b] Woodw. Mſ. with the paſſages between hooks from Sutton. Linn. tranſ.
[c] Sutton.

[d] Vaill. [e] Moriſon. [f] Ray ſuppl. [g] Linn. ſpec.

[2. Orobus hirſutus. *Hairy Bitter-Vetch.*
Lin. ſpec. 1027. *Reich.* 3. 458. *hort. cliff.* 366. *Boerh. lugdb.* 2. 46. *Buxb. cent.* 3. 22. *t.* 41.
Leaves conjugate petioled, ſtipules entire.]

3. Orobus luteus. *Yellow Bitter-Vetch.*
Lin. ſpec. 1028. *ſyſt.* 661. *Reich.* 3. 459. *mant.* 442. *Gmel. ſib.* 4. 13. *t.* 4. *Hall. helv. n.* 419. *Ger. prov.* 492. 2. *Villars dauph.* 3. 437. *Allion. pedem. n.* 1212. *Mill. fig.* 129. *t.* 193. *f.* 1.

a. O. alpinus latifolius. *Baub. pin.* 351. *prodr.* 149.

β. O. ſylvaticus pallido flore. *Baub. pin.* 351. *Raii hiſt.* 913. *Tournef. inſt.* 393.

O. montanus. *Scop. carn. n.* 886. *t.* 41.

O. alpinus galegæ foliis longioribus & anguſtioribus. *Pocock. compend.* 101.

Galega montana. *Dalech.* 1139. *Baub. hiſt.* 2. 343.

Leaves pinnate ovate-oblong, ſtipules rounded-creſcent-ſhaped toothed.

4. Orobus vernus. *Spring Bitter-Vetch.*
Lin. ſpec. 1028. *Reich.* 3. 459. *hort. cliff.* 366. *Fl. ſuec. n.* 641. *Hall. helv. n.* 416. *Scop. carn. n.* 882. *Pollich pal. n.* 672. *Neck. gallob.* 304. *Roy. ged.* 2. 115. *Crantz. auſtr.* 373. *Gunn. norv. n.* 236. *Weig. pom. n.* 458. *Pallas it.* 1. 180. *Krock. ſilef. n.* 1158. *Ger. prov.* 491. 1. *Villars dauph.* 3. 437. *Allion. pedem. n.* 1213. *Rivin. tetr.* 1. 58. *Jungbans ic. cent.* 1. *t.* 9. *Schmidel, t.* 59. *f.* 79.

O. ſylvaticus purpureus vernus. *Baub. pin.* 351. *Thal. herc.* 1. 6. *Raii hiſt.* 912. *Tournef. inſt.* 393. *Garid. aix.* 345. *Blackw.* 1. 208. *f.* 1, 2.

O. ſylv. purp. major. *Park. parad.* 337. *f.* 13.

O. pannonicus 1. *Cluſ. hiſt.* 2. 230.

O. pannon. *Beſl. eyſt. vern.* 6. *f.* 2.

O. ſylv. vernus. *Ger. emac.* 1247. 2.

Galega nemorenſis verna. *Baub. hiſt.* 2. 343.

Aſtragalus Dioſcoridis. *Col. phytob.* 48. *t.* 14.

β. O. latifolius parvo flore purpureo. *Baub. pin.* 351. *Tournef. inſt.* 393. *Garid. aix.* 344.

Galegæ nemorenſi ſimilis multiflora, flore purpureo. *Baub. hiſt.* 2. 345. *Raii hiſt.* 913.

Leaves pinnate ovate, ſtipules ſemiſagittate quite entire, ſtem ſimple.

6. Orobus tuberoſus. *Tuberous Bitter-Vetch.*
Lin. ſpec. 1028. *ſyſt.* 661. *Reich.* 3. 460. *hort. cliff.* 366. *fl. ſuec. n.* 642. *Hudſ. angl.* 314. *Wither. arr. ed.* 3. 631. *Curt. lond.* 1. 53. *Lighf. ſcot.* 388. *Sibbald ſcot. illuſtr. t.* 1. *Sibth. oxon. n.* 618. *Hall. helv. n.* 417. *Scop. carn. n.* 883. *Pollich pal. n.* 673. *Fl. dan. t.* 781. *Weig. pom.* 459. *Crantz. auſtr.* 377. *Krock. ſilef. n.* 1160. *Ger. prov.* 492. 3. *Villars dauph.* 3. 438. *Allion. pedem. n.* 1214. *Retz. obſ.* 1. 24.

O. radice tuberoſa. *Riv. tetr. t.* 59.—ſylveſtris tub. rad. *Mor. hiſt. ſ.* 2. *t.* 21. *f.* 3.

Aſtragalus ſylvaticus. *Thal. herc.* 7. *t.* 1. *Ger. emac.* 1237. 2. *Raii hiſt.* 916.—foliis oblongis glabris. *Tournef. inſt.* 393. *Raii ſyn.* 324.

A. ſylveſtris fol. obl. glabr. *Baub. pin.* 351.

Lathyrus ſylveſtris lignoſior. *Park. theat.* 1062. 5.

L. anguſtifolius rad. tuberoſa. *Loef. pruſſ.* 138. *t.* 37.

Leaves pinnate lanceolate, ſtipules ſemiſagittate quite entire, ſtem ſimple.

[6. Orobus anguſtifolius. *Narrow-leaved Bitter-Vetch.*
Lin. ſpec. 1028. *ſyſt.* 661. *Reich.* 3. 460. *Gmel. ſib.* 4. *t.* 14. *f.* 5. *Pallas it.* 1. 176.

Leaves two-paired enſiform ſubſeſſile, ſtipules ſubulate, ſtem ſimple.

7. Orobus albus. *White Bitter-Vetch.*
Lin. ſyſt. 661. *ſuppl.* 327. *Villars dauph.* 3. 436.

O. pannonicus. *Jacqu. auſtr.* 1. 25. *t.* 39.

Leaves two-paired enſiform petioled, ſtipules ſimple, ſtem ſimple.

8. Orobus caneſcens. *Hoary Bitter-Vetch.*
Lin. ſyſt. 661. *ſuppl.* 127.

O. anguſtifolius β. *Lin. ſyſt. ed.* 13. 556. *Ger. prov.* 493. 2. *Villars dauph.* 3. 435.

O. orientalis, fol. anguſtiſſimis coſtæ breviſſimæ innaſcentibus. *Tourn. cor.* 26.

Araci vel aphos leguminoſa ſpecies. *Baub. hiſt.* 2. 326.

Stem branched, leaves two-paired linear, ſtipules ſemiſagittate awl-ſhaped.]

9. Orobus niger. *Black Bitter-Vetch.*
Lin. ſpec. 1028. *Reich.* 3. 460. *hort. cliff.* 366. *fl. ſuec. n.* 643. *Fl. dan. t.* 1170. *Hall. helv. n.* 418. *Scop. carn. n.* 884. *Pollich pal. n.* 674. *Roy. ged.* 1. 178. *n.* 2. *Crantz. auſtr.* 372. *Weig. pom. n.* 460. *Ger. prov.* 493. 5. *Villars dauph.* 3. 439. *Krock. ſilef. n.* 1159. *Allion. pedem. n.* 1215. *Knipb. cent.* 3. *n.* 69. *Gærtn. fruct.* 2. 327.

O. ſylvaticus, viciæ foliis. *Baub. pin.* 352. *Raii hiſt.* 916. *Riv. tetr. t.* 60.

O. pannonicus 2. *Cluſ. hiſt.* 2. 230.

Aſtragaloides herbariorum. *Park. theat.* 1086. 8.

Aſtr. major Fuchſii. *Baub. hiſt.* 2. 334.

Stem branched, leaves ſix-paired ovate-oblong.

10. Orobus pyrenaicus. *Pyrenean Bitter-Vetch.*
Lin. ſpec. 1029. *Reich.* 3. 461. *Scop. carn. n.* 885. *Sauv. monſp.* 235.

O. pyrenaicus, foliis nervoſis. *Tournef. inſt.* 235.

O. pyr. latifolius nervoſus. *Pluk. phyt. t.* 210. *f.* 2.

Stem branched, leaves two-paired lanceolate nerved, ſtipules ſomewhat thorny.

11. Orobus ſylvaticus. *Wood Bitter-Vetch.*
Lin. ſpec. 1029. *Reich.* 3. 461. *amoen.* 4. 284. *n.* 66. *Hudſ. angl.* 314. *Wither. arr. ed.* 3. 630. *Lighf. ſcot.* 390. *t.* 16. *Raii hiſt.* 1892. *ſyn.* 324. *Alt. par.* 1706. 87. *t.* 90.

Stems decumbent briſtle branched.

12. Orobus venetus. *Venetian Bitter-Vetch.*
Mill. dict. n. 8. *fig. t.* 193. *f.* 2. *Cluſ. hiſt.* 232. *Ger. emac.* 1247. 1. *Raii hiſt.* 917.

Leaves pinnate ovate acute four-paired, ſtem ſimple.

13. Orobus americanus. *American Bitter-Vetch.*
Mill. dict. n. 9. *Houſt. Mſs.*

Leaves pinnate linear-lanceolate tomentoſe underneath, ſtem very much branched fruteſcent.

14. Orobus argenteus. *Silvery Bitter-Vetch.*
Mill. dict. n. 10. *Houſt. Mſs.*

Leaves pinnate oblong-ovate ſilky underneath, ſtem erect tomentoſe, flowers in terminating ſpikes.

15. Orobus procumbens. *Procumbent Bitter-Vetch.*
Mill. dict. n. 11. *Houſt. Mſs.*

Leaves pinnate, outer leaflets larger tomentoſe, ſtem procumbent.

16. Orobus coccineus. *Scarlet Bitter-Vetch.*
Mill. dict. n. 12. *Houſt. Mſs.*

Leaves pinnate, leaflets linear villoſe, ſtem procumbent, flowers axillary and terminating.

DESCRIPTIONS, &c.

1. Root perennial. Stalks three or four, branching, about a foot high. Leaflets ſmooth, ſtiff, of a lucid green. Flowers in cloſe ſpikes on ſhort peduncles, from the axils of the leaves at the top of the ſtalks, where are generally three or four of theſe ſpikes ſtanding together. The corolla is of a fine blue colour. The flowers appear in june, and are ſucceeded by ſhort ſtattish pods, containing two or three ſeeds in each, which ripen in auguſt.

Native of Siberia. [Cultivated in 1759 by Mr. Miller[s].

2. Native of Thrace[t].

3. Root very thick, often tranſverſe, hard, with the fibres widely diffuſed. Stem a foot high and more, ſtraight, angular, ſtriated, ſmooth. Leaflets four or five pairs, entire, veined on both ſides, netted, ſmooth, whitiſh underneath, terminated by a briſtle: ſometimes there is an odd leaflet. Stipules ſemiſagittate, entire or obſcurely ſerrate with diſtant teeth, of the ſame colour with the leaves. Peduncles angular, ſtriated, ſmooth, naked, twice as long as the leaves. Flowers in looſe ſpikes, all directed the ſame way, twelve or more. Calyx five-cleft, the lower legment longer. Corolla pale yellow, with the ſtandard and keel of the ſame length. Legumes long, linear, ſmooth, compreſſed.

It differs from the next ſpecies in having a higher ſtem, leſs angular; wider leaflets, narrower ſtipules,

[s] Hort. kew. [t] Linn.

longer

longer peduncles: and larger flowers, in greater abundance, of a yellow colour [a].

According to Turra in *Linn. mant.* the ſtem is three feet high, ſimple or branched; leaves glaucous underneath. Stipules quite entire and ſemiſagittate, not roundiſh creſcent-ſhaped and toothed.—Gerard ſays that the ſtem is ſimple; Haller, that it is altogether branched; Villars, that it is ſimple or branched.

Haller deſcribes it as one of the handſomeſt of the papilionaceous tribe; the ſtem three feet high and more; ſtipules large, hooked downwards, ſerrate; leaves numerous, aſcending, ſmooth; flowering ſtems from all the axils, a long ſpan in length, bearing a looſe pendulous ſpike of ten flowers; calyx cylindrical, compreſſed, the two upper ſegments very ſhort, lanceolate, recurved, the lower ſtraight and triangular; corolla long, ochroleucous; ſtandard narrow; wings blunt, equal to the keel, with blunt hooks; keel cloven at bottom, very ſharp at top; legume oblong, ſmooth, many-ſeeded.

Native of Siberia, Switzerland, the South of France and Italy. Cultivated in 1757 by Mr. Miller [b].

4. Root perennial, creeping, not tuberous, woody, black, with many ſtrong fibres. Stem about a foot high, upright, unbranched, ſmooth, angular, twiſted or elbowed at each inſertion of the leaves. Leaves alternate, petioled, leaflets two or three pairs, without an odd one, large, ovate-lanceolate, ſeſſile, quite entire, nerved, bright green, ſmooth, tender. Stipules at the baſe of the petioles, large, wide. Midrib or rachis of the leaf long, channelled, ending in a ſharp point. Peduncles axillary, an inch and half long, terminated by a one-ſided looſe raceme, conſiſting of from four to eight or ten flowers. The two upper toothlets of the calyx are ſhorter, the loweſt is longeſt. Corolla large and handſome, ſingular in the different ſhades of colour: the ſtandard is wide and emarginate, the upper part of it is red or purple with blood-red veins, the wings are blue, the keel is blue tinged with green; the colours change as the corolla advances, and become ſky-blue when the corolla is ready to fall. Legumes ſtraight, round, from red becoming black, and containing from five or ſix to nine or ten rounded, compreſſed ſeeds [c].

Scopoli remarks, that the pedicels are ſhorter than the calyx; that the uppermoſt ſtamen is bowed, and applies its anther to the baſe of the ſtigma, and that all the filaments are not antheriferous.

Native of many parts of Europe, in woods. Cultivated here in 1629, as appears from Parkinſon [d]. It flowers early, namely in march or april, or, as Scopoli expreſſes it, before the arrival of the Swallow.]

Mr. Miller mentions a variety of it with pale flowers:

5. [Root perennial, conſiſting of tough fibres, ſwelling here and there into irregular tubercles, each of which produces a ſtalk about a foot high, ſimple, upright, having two or three leafy or winged angles. Leaves alternate, three or four in number; each conſiſting of two or three pairs of ſmooth ſeſſile leaflets without an odd one, the petiole terminated by a kind of awn, as are the leaflets, being a production of the midrib; leaflets all elliptical, blueiſh underneath, the lower ones broader, the upper approaching to linear, all having three nerves or longitudinal veins. Stipules in pairs at the baſe of each leaf, frequently entire, but more often jagged at bottom, with one or ſeveral teeth. Flowers from two to four or five in a thin ſpike on naked ſlender axillary peduncles. Calyx purple, blunt at the baſe, the three loweſt teeth ſharper, the two upper ſhorter. Corolla beautiful, reddiſh purple, turning blue as it goes off: ſtandard large, oval, veined, with reflexed elevated margins; wings converging, connected with the keel, claw linear; keel acuminate, riſing upward, with hollow edges for the reception of the wings. At the baſe of the uppermoſt or ſingle filament two ſmall holes are conſpicuous. Germ a flatted cylinder: ſtyle interiorly near the top villoſe, not pointed at the end. Legume above an inch long, cylindrical, a little curved at the end, firſt red, but black when ripe, pendent, containing from four to nine or even twelve roundiſh compreſſed ſeeds of a yellowiſh brown colour [e].

Native of moſt parts of Europe, in woods, principally in a ſtrong clayey ſoil; flowering in may and june, ſometimes in april: the ſeed is ripe in july. The root is large, deep in the earth, and taken up with difficulty. The Highlanders of Scotland have a great eſteem for the tubercles of the root; they dry and chew them in general to give a better reliſh to their liquor; they alſo affirm them to be good againſt moſt diſorders of the thorax, and that by the uſe of them they are enabled to repel hunger and thirſt for a long time. In Breadalbine and Roſsſhire they ſometimes bruiſe and ſteep them in water, and make an agreeable fermented liquor with them. They have a ſweet taſte, ſomething like the roots of liquorice, and when boiled, are well-flavoured and nutritive, and in times of ſcarcity have ſerved as a ſubſtitute for bread [f].

In Engliſh it is called *Wood-Pea* or *Heath-Pea*. Dr. Withering names it *Heath-Perſeling*. In Erſe it is *Cor-meille*.

Retzius mentions a variety, with the ſtem more than a foot high, wide large ovate blunt leaves, and great ſtipules croſe-toothed at the baſe.

6. This has the habit of the preceding, but the leaves are enſiform-lanceolate with two or three pairs of oppoſite leaflets without any tendril. Flowers few, yellow, in racemes [g].

Native of Siberia. Cultivated in 1766, in the Botanic Garden at Oxford [h].

7. Roots tuberous, ſeſſile. It reſembles the preceding very much, but the leaves are petioled and not ſubſeſſile; the flowers are white, not yellow; racemes without any terminating thread. Native of Auſtria [i].

8. This alſo reſembles O. anguſtifolius, but the ſtem is branched, and the flowers are white with a tinge of blue [k].

It differs from O. anguſtifolius in having a branched ſtem, and blue flowers; nor is it a native of the Alps; but of the Levant, and the South of France, in barren paſtures.]

9. Root perennial, ſtrong, woody. Stems many, branching, two feet high, having one pinnate leaf at each joint, compoſed of five or ſix ſmall, oblong, oval leaflets. Flowers on very long, axillary peduncles, having four, five or ſix purple flowers at the top.

[Stem upright, a foot and half high, with alternate branches. Leaflets five or ſix pairs, hardiſh, glaucous-green, ovate, acuminate, the midrib ending in a point. Stipules pale, lanceolate, terminating in little hooks at the baſe. Peduncles axillary, three inches long, bearing ſix or ſeven (ſometimes twelve) flowers in a raceme, often pointing moſtly one way, hanging down. Corolla purple, eaſily changing colour: ſtandard emarginate, bent back; wings ending in blunt hooks, extending a little beyond the keel, which ends in a ſharp beak. Stigma bent down [l]. Legume two inches long and more, about a line and half wide, at firſt pendulous, but extending more ſtraight out as it ripens, oblong, roundiſh, incurved a little at the baſe, ending in a point, knobbed a little where the ſeeds lie, ſmooth, black. Seeds from three or four to ſix or eight, orbicular, cylindrical or conoid-ovate, ſmooth, with ſmall, ſcattered, duſky ſpots: navel linear, almoſt the length of the ſeed, chord very ſhort, biſid at top [m].

Native of moſt parts of Europe, in woods and among buſhes, but not of Britain, flowering from may to july.—Cultivated in 1656, by Mr. John Tradeſcant junior [n]. It turns black in drying, whence the trivial name.

10. Stem angular, with the angles ſlightly winged, branched, ſomewhat villoſe. Leaflets on ſhort petioles, the nerves underneath villoſe. Stipules oblong,

[a] Gerard. [b] Hort. kew. [c] Haller, Pollich, Villars, Krocker. [d] Hort. kew. [e] Lightf. Curtis, Woodw. Mſs. Withering. [f] Lightfoot. [g] Linn. ſpec. [h] Hort. kew. [i] Linn. ſuppl. [k] Idem. [l] Pollich, Scopoli. [m] Gærtner, Pollich. [n] Hort. kew.

one

one-tailed. Racemes ſcattered. Flowers directed one way, pendulous: ſtandard obcordate, red, with lines of a deeper colour. Legume ſubpubeſcent[a].

Native of the South of Europe.—Cultivated in 1699, by the Dutcheſs of Beaufort[b].

11. From the root ariſe numerous procumbent ſtems, much branched, and even the younger ſhoots but ſlightly hairy. Leaves alternate, with each a pair of ſemiſagittate ſtipules at the baſe, reſembling thoſe of O. tuberoſus, but ſmaller, and terminating in a more acute point. Leaflets oval or elliptical, never acutely pointed, terminated by the produced midrib, as in O. tuberoſus, on very ſhort hairy footſtalks, ſomewhat alternate, ſix to twelve pairs without an odd one, but a ſort of beard terminating the footſtalk, which as well as the ſtem is but ſlightly hairy. The flowers numerous to twelve, on ſhort pedicels, crowded on the ſummit of a long naked peduncle, moſtly pointing one way. Calyx ſhort, ſomewhat bilabiated, nearly equal, the upper lip conſiſting of two teeth, the lower of three rather longer, green tinged with red, and fringed with hairs. Coroſla long and narrow. Legume ſhort, compreſſed, ſmooth[c].

According to Linnæus, the ſtems are branched and grooved, leaflets ſix or ſeven pairs, coroſla red on the outſide, white within with purple lines, legume compreſſed containing two or three ſeeds.

Lightfoot deſcribes the flowers as white ſtriated with purple veins, the apex of the keel bright purple. Legumes hardly an inch long. The whole plant has a diſagreeable bitter taſte.

Mr. Woodward remarks, that his ſpecimens differ ſo materially in ſome points from Mr. Lightfoot's deſcription and figure, that he ſhould have been tempted to ſuppoſe his a different plant, were it not that he gathered it on the ſpot deſcribed by Ray, and that it anſwers to the deſcription in the ſynopſis, which is quoted by Linnæus; and is as follows.

Root thick, woody, perennial, with a leguminous taſte. Stems numerous, a foot or eighteen inches in height, hairy, ſtriated, branched, reclining, although they are rigid. Leaves ſmaller than thoſe of the common Vetch, to ſeven or eight pairs, without any odd leaflet or tendril, dark green above, ſmooth beneath. Flowers ſix, ſeven or more on the ſame common peduncle, approaching in their form to thoſe of *Vicia ſylveſtris multiflora* or *Glycyrrhiza ſylveſtris*, pendulous on ſlender pedicels, reddiſh on the outſide, white with purple veins within. Legumes ſhort, broad, ſmooth, containing two or three, ſeldom more, ſmall, compreſſed, greeniſh ſeeds.

Native of France and England. Found by Mr. Ray at Gamblesby in Cumberland, about ſix (ten) miles from Penrith, in the way to Newcaſtle, in the hedges and paſtures plentifully: by Tho. Williſel below Brecknock-hills in the way to Caerdiff, and in Merionethſhire not far from Bala: in Denbighſhire by Mr. Griffith. In the upper part of Merley-wood near Oxford, by Dr. Sherard. In Scotland plentifully by Mr. Sutherland and Dr. Hope; on the Tweed half a mile below the Buld, by the latter; in the woods about Airly Caſtle, by Mr. Donn; on the bank of the Clyde near Lanerk, and in the iſle of Rum, by Mr. Lightfoot. In Ireland, near Roſs-Trevor, by Dr. Sherard. It flowers from may to july.]

12. Root perennial. Stalks two or three, about a foot high. Leaflets ſmooth, pale green, placed pretty far diſtant on the midrib. Peduncles axillary, ſlender, ſuſtaining four or five purple flowers at the top. Legumes ſwelling, an inch and half long, containing three or four roundiſh ſeeds. The flowers appear in march or april, and the ſeeds ſometimes ripen in may. Native of Italy.

13. This grows naturally in Jamaica, whence the late Dr. Houſtoun ſent the ſeeds in 1731. This riſes with a very branching woody ſtalk about three feet high; the leaves are compoſed of five or ſix pairs of narrow ſpear-ſhaped leaflets, which are woolly on their under ſide. The flowers grow in looſe ſpikes at the end of the branches, are of a pale purple colour, and are ſucceeded by ſmooth compreſſed pods an inch and a half long, each containing five or ſix roundiſh ſeeds.

14. The fourteenth ſort was diſcovered by the late Dr. Houſtoun at La Vera Cruz, whence he ſent the ſeeds to England. This riſes with a ſhrubby ſtalk five or ſix feet high, dividing into many ſlender branches, which are covered with a brown woolly bark, and have ſoft, fatteny, winged leaves; thoſe on the young branches are compoſed of four pairs of oval obtuſe leaflets, of a browniſh green colour, hairy on their upper ſide, but of a ſilvery ſilky hue on their under. The leaves on the upper branches are compoſed of ſeven or eight pairs of oblong oval leaflets, of the ſame colour and conſiſtence as the lower. The flowers are produced in long erect ſpikes at the end of the branches; they are of a deep purple colour, and are ſucceeded by long, woolly, compreſſed pods, each containing four or five ſeeds.

15. The fifteenth ſort was diſcovered by Dr. Houſtoun at La Vera Cruz, and he ſent it to England in 1730. This is a low plant, whoſe ſtalks bend to the ground, and are ſeldom more than ſix or eight inches long, from which come out a few ſhort ſide branches; the leaves are compoſed of four or five pairs of ſmall, oblong, oval, woolly leaflets, terminated by an odd one, the upper ones being much larger than the lower. The flowers come out in ſmall bunches, ſtanding upon ſhort axillary peduncles; they are ſmall, and of a bright purple colour; theſe are ſucceeded by compreſſed pods near two inches long, each having ſix or ſeven roundiſh compreſſed ſeeds.

16. This was diſcovered at the ſame time, growing naturally in the ſame country as the former, by the ſame gentleman. It has a pretty thick woody root, which ſends out many ſlender ſtalks a foot and half long, trailing upon the ground; leaves compoſed of three or four pairs of narrow hoary leaflets, about half an inch long. The flowers come out from the ſide and at the end of the ſtalks, three or four ſtanding upon a ſhort footſtalk; they are ſmall and of a ſcarlet colour, and are ſucceeded by ſhort taper pods, each containing three or four ſmall roundiſh ſeeds.

PROPAGATION AND CULTURE.

All the ſpecies, except the four laſt, are hardy perennials, and ſeveral of them may be increaſed by parting their roots. The beſt time for doing this is in the autumn, that the plants may be well eſtabliſhed before the ſpring; for as ſeveral of them begin to put out their ſtalks very early in the ſpring, ſo if they are then diſturbed, it will either prevent their flowering, or cauſe their flowers to be very weak. Moſt of theſe plants delight in a ſhady ſituation, and a loamy ſoil.

They are alſo propagated by ſeeds, but theſe ſhould be ſown in the autumn, for if they are kept out of the ground till ſpring, many of the ſorts will never grow, and thoſe which do, ſeldom vegetate the ſame year. When the plants come up they muſt be kept clean from weeds, and where they are too cloſe together they ſhould be thinned, ſo as they may have room to grow till the autumn, when they ſhould be tranſplanted into the places where they are deſigned to remain. If the roots are ſtrong, they will flower very well the following ſpring, but thoſe which are weak will not flower till the ſecond year; therefore ſuch may be planted in a ſhady border at four or five inches diſtance, where they may grow one year to get ſtrength, and then may be removed to the places where they are to remain. The farther care of them is only to dig the ground between them in winter, and in ſummer to keep them clean from weeds.

The four laſt mentioned ſorts being natives of hot countries are tender, and muſt be preſerved in ſtoves, otherwiſe they will not live in England. Theſe are propagated by ſeeds, which ſhould be ſown early in the ſpring, in ſmall pots filled with light rich earth, and plunged into a hot-bed of tanner's bark, obſerving frequently to moiſten the earth, otherwiſe the ſeeds will not grow. When the plants come up, they ſhould be carefully taken out of the pots, and each tranſplanted

[a] Scopoli. [b] Hort. kew. [c] Woodw. Mſs.

transplanted into separate small pots filled with rich earth, and then plunged again into the tan-bed, observing to shade them until they have taken root: after which time they should have fresh air admitted to them every day in warm weather, and must be frequently watered. With this management the plants will make a great progress. When any of the plants are grown too tall to remain in the hot-bed, they should be taken out, and plunged into the bark-bed in the stove, where they may have room to grow, especially the thirteenth and fourteenth sorts; but the other two being of humbler growth, may be kept in the hot-bed until Michaelmas, when the nights begin to be cold; at which time they should be removed into the stove, and plunged into the bark-bed, where they must be treated as other tender exotic plants; by which method they may be preserved through the winter, and the following summer they will produce flowers. These plants are perennial, so that if they should not perfect their seeds, the plants may be maintained for several years.

[ORIGANUM. See *Abrus*, *Erysimum*, *Galega*.

ORONTIUM. (*The name of an herb in Galen, used in baths for the jaundice. Perhaps from ορωω to see; if it purged the visual ray.*)

Lin. gen. n. 435. *Reich. n.* 469. *Schreb. n.* 587. *Juss.* 25. Aronia. *Mich.* 1.

Class. 6. 1. Hexandria Monogynia.

Nat. order of *Piperitæ*. *Aroideæ*. Juss.

GENERIC CHARACTER.

CAL. *Spadix* cylindrical, quite simple, covered with florets. *Spathe* none. *Perianth* none (unless the corolla be so called.)

COR. *Petals* six, peltate, roundish-angular, permanent.

STAM. *Filaments* six, very short, ensiform, within each petal. *Anthers* twin, oblong.

PIST. *Germ* roundish, depressed. *Style* none. *Stigma* roundish, bifid.

PER. *Follicle* slender, immersed with the corolla in the spadix.

SEED single, round, fungose.

ESSENTIAL CHARACTER.

Spadix cylindrical, covered with florets. *Cor.* six-petalled, naked. *Style* none. *Follicles* one-seeded.

SPECIES.

1. Orontium aquaticum.

Lin. spec. 463. *syst.* 340. *Reich.* 2. 92. *amoen.* 3. 17. *t.* 1. *f.* 3. *Kalm. it.* 3. 54. *ed. angl.* 2. 100. *Gisek. ic. fasc.* 1. *n.* 6.

Arum folio enervi ovato. *Gron. virg.* 113.

A. fluitans, pene nodo. *Banist. virg.* 1924. *Catesb. car.* 1. *t.* 82.

Leaves lanceolate-ovate.

2. Orontium japonicum.

Lin. syst. 340. *Thunb. jap.* 144. *ic. Kæmpf. t.* 12. *Leaves cuniform veined.*

DESCRIPTIONS, *&c.*

1. The leaves of this are broad, like those of Lily of the Valley, green on the upper side, and covered with very minute hairs, so that they look like a fine velvet. Cattle, hogs and stags are very fond of these leaves in the spring, and they come out among the earliest. The Indians gather the seeds and eat them when dried like peas; boiling them repeatedly in water before they are fit for use: they also boil them in milk or butter, and use them instead of bread. They call the plant *Taw-kee*. It grows in marshes, near moist and low grounds very plentifully in Virginia, Canada and other provinces of North America[a]. It was introduced here in 1775, by John Fothergill, M. D. and flowers in june[b].

2. Radical leaf solitary, ensiform, attenuated at bottom, convoluted, having several longitudinal veins, entire, smooth, two inches wide, and two feet long. Scape round, smooth, upright, from a finger to a palm in height. Flowers at the top of the scape distinct, in an oblong spike, an inch in length. It differs from the preceding in having much longer leaves attenuated below and marked with several raised veins, and a shorter scape.

Native of Japan, near Nagasaki, &c.[b] Introduced in 1783 by Mr. John Græfer. It flowers in january[c].

ORONTIUM. See *Antirrhinum*.

ORPINE. See *Sedum* and *Telephium*.

ORTEGIA. (*So named by Loefling, in honour of Joseph Ortega, his companion in his travels.*)

Lin. gen. n. 51. *Reich. n.* 57. *Schreb. n.* 70. *Juss.* 299. *Gærtn. t.* 129.

Class. 3. 1. Triandria Monogynia.

Nat. order of *Caryophyllææ*.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, erect, with oval leaflets membranaceous at the edge, permanent.

COR. none.

STAM. *Filaments* three, awl-shaped, shorter than the calyx. *Anthers* linear, compressed, shorter than the filaments.

PIST. *Germ* ovate, three-sided at top. *Style* filiform, almost the length of the calyx. *Stigma* blunt-headed.

PER. *Capsule* ovate, three-cornered above, one-celled, three-valved at the top.

SEEDS very many, extremely small, oblong, sharp at both ends.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* none. *Caps.* one-celled. *Seeds* very many.]

SPECIES.

1. Ortegia hispanica. *Spanish Ortegia.*

Lin. syst. 82. *Reich.* 1. 95. *Willd.* 190. *mant.* 320. *Loefl. it.* 112. *Cavan. ic.* 1. 35. *n.* 53. *t.* 47. *Gærtn. fruct.* 2. 214.

Rubia lanifolia aspera. *Bauh. pin.* 333. *Raii hist.* 1033.

Juncaria salmantica. *Clus. hist.* 1. 174. *Park. Stem branched, peduncles many-flowered.*

[2. Ortegia dichotoma. *Forked Ortegia.*

Lin. syst. 82. *Reich.* 1. 95. *Willd.* 190. *Allion. pedem. n.* 2061. *misc. taurin.* 3. 176. *t.* 4. *f.* 1. *Stem dichotomous, peduncles one-flowered.*

DESCRIPTIONS, *&c.*

1. Root round, knobbed, descending, with branched fibres in the lower part. Stems several, a foot high, thickened at the joints, which are red, and distant; branches from bottom to top, decussately opposite, erect, subdivided. Leaves almost linear, opposite, sessile, erect, bright green, as is the whole plant. Between each pair of leaves are two red tubercles on each side, from the centre of which issues a bristle-shaped, whitish, deciduous stipule. Flowers herbaceous, small, from each axil, and frequently a third from the forking of the branchlets, so close as to appear to be glomerate, on very short peduncles. Calycine leaflets ovate-acute, concave, two exterior, three interior. Filaments inserted into the base of the germ, yellowish, concealed within the internal leaflets of the calyx: anthers cordate at the base, acute at the tip. Germ superior, acute at both ends, ventricose, sharpest at the tip: style erect: stigma red. Seeds ovate, yellowish red.

It is a low trailing annual plant, native of Spain, where it was first observed by Clusius[d]. Cultivated in 1768, by Mr. Miller. It flowers in june and july[e]. In the Kew catalogue it is marked as perennial.—Gærtner remarks, that the embryo is straight, which is unusual in this family.

2. Root perennial. Stature of Galium. Stem erect, stiff, somewhat rugged, channelled on each side, thickened at the joints. Leaves opposite, linear, spreading, by no means smooth at the back. Two stipules on each side between each pair of leaves, minute bristle-shaped, with a thickish coloured base. Branches alternate. Panicle terminating. Flowers dichotomous on very short peduncles, green. Stigmas three, distinct, oblong, pubescent, each thicker than the style. It is very nearly allied to Polycarpon[f].—Native of Italy. Introduced in 1781, by Mons. Thouin. It flowers in august and september[g].

ORTHOTRICHUM. See *Weissia*.

ORTIGA. See *Loasa*.

ORVALA. See *Lamium* and *Salvia*.

[a] Kalm. [b] Hort. kew. [c] Thunberg. [d] Hort. kew. [e] Cavanilles. [f] Hort. kew. [g] Linn. [h] Hort. kew.

ORYGIA. See *Portulaca.*]

ORYZA (*of Pliny.* Ορυζα *of Dioſcorides:* Ορυζον *of Theophraſtus. Perhaps from* ορυσσω, *to dig.*)

Lin. gen. n. 448. *Reich. n.* 483. *Schreb. n.* 609. *Tournef. t.* 296. *Mich.* 81. B.B. *Juſſ.* 32. *Gærtn. t.* 80.

Claſſ. 6. 2. Hexandria Digynia.

Nat. order of *Gramina, Graminea* or *Graſſes.*

GENERIC CHARACTER.

CAL. *Glume* one-flowered, two-valved, very ſmall, acuminate, almoſt equal.

COR. two-valved: *valves* boat-ſhaped, concave, compreſſed, the larger five-angled, awned.

Neƈtary (*Petals* of Micheli) two-leaved, flat, on one ſide of the germ, very ſmall: *leaflets* narrow at the baſe, truncate at the tip, caducous.

STAM. *Filaments* ſix, capillary, the length of the corolla. *Anthers* bifid at the baſe.

PIST. *Germ* turbinate. *Styles* two capillary, reflex. *Stigmas* club-ſhaped, feathered.

PER. none. *Corolla* growing to the ſeed, oval-oblong, compreſſed, margins thin, two ſtreaks on each ſide at the ſide.

SEED ſingle, large, oblong, blunt, compreſſed, with two ſtreaks on each ſide.

OBS. *Is the flower compoſed of two florets?* Aymen.

ESSENTIAL CHARACTER.

Cal. Glume two-valved, one-flowered. *Cor.* two-valved, almoſt equal, growing to the ſeed.

SPECIES.

1. Oryza ſativa.
Lin. ſpec. 475. *ſyſt.* 345. *Reich.* 2. 113. *hort. cliff.* 137. *mat. med.* 97. *Mill. illuſtr. Gærtn. fruƈt.* 2. 5. *Lour. cochinch.* 214. *Thunb. jap.* 147.
Oryza. *Bauh. pin.* 24. *theat.* 479. *Camer. epit.* 192. *Dod. pempt.* 509. *Matth.* 403. *Ger.* 72. *emac.* 79. *Park. theat.* 1136. *Raii hiſt.* 1246. *Cateſb. car.* 1. *t.* 14. *Plenck.* 278.
[α. O. communiſſima. *Common Rice.*
Pady taun. *Rumph. amb. l.* 8. *c.* 30.
β. O. præcox. *Early Rice.*
Pady djiji. *Rumph. amb. l.* 8. *c.* 30.
γ. O. montana. *Dry* or *Mountain Rice.*
Pady baggea. *Rumph. amb. l.* 8. *c.* 30.
δ. O. glutinoſa. *Clammy Rice.*
Lour. cochinch. 215. *Berg. mat. med.* 294.
Bras Pulu. *Rumph. amb. l.* 8. *c.* 31. *p.* 201.

DESCRIPTION, *&c.*

Rice has the culm from one to ſix feet in length, annual, erect, ſimple, round, jointed. Leaves ſubulate-linear, reflex, embracing, not fleſhy. Flowers in a terminating panicle. Calycine leaflets lanceolate. Valves of the corolla equal in length; the inner valve even, awnleſs; the outer twice as wide, four-grooved, hiſpid, awned. Style ſingle, two-parted.

α. Culm four feet high. Panicle ſpiked, the ſpikes commonly ſimple. Fruit oblong, pale, with long awns. It is late, and is cut from ſix to eight months after planting. Cultivated in marſhes, and withering with drought or a ſmall degree of ſaltneſs.

β. Culm three feet high. Panicle ſpiked; ſpikes branching. Fruit turgid, browniſh red, with ſhorter awns. It ripens and is cut in the fourth month from planting. It is cultivated in marſhes, and is not injured by the influx of ſalt water.

γ. Culm three feet high, and more ſlender. Fruit longiſh, with awns the longeſt of all. It is ſown on mountains, and in dry ſoils; rots with a long inundation, and periſhes with ſea water.

δ. Culm four feet high. Leaves wider, yelloviſh. Panicle large, with ſhorter awns. Seed oblong, largiſh, glutinous, uſually very white. This is cultivated both in wet and dry places. It varies with a black ſeed, which is higher flavoured, and alſo with a red ſeed[k].

The varieties of Rice, as of other cultivated grain, are innumerable. Loureiro propoſes the above as ſpecies, diſtinct not from culture, but by nature; differing in the time of ſpringing, growth and maturity, in the ſort of ſoil that they require, in the form and colour of the ſeed, and probably in other characters, if they were carefully examined.

[k] Loureiro.

The native place of Rice, like the other ſorts of grain in common uſe, is unknown. Linnæus indeed ſays, *habitat ſorte in Æthiopia*, but I do not know what authority he has for this aſſertion. By a miſtake he has generally put Æthiopia for the country about the Cape of Good Hope: but perhaps he may here intend Abyſſinia.

Rice is cultivated in great abundance all over India, where the country will admit of being flooded; in the ſouthern provinces of China; in Cochinchina, Cambodia, Siam, Japan, &c. In Japan it is very white and of the beſt quality.

It has alſo been introduced into cultivation in the ſouthern kingdoms of Europe, Italy, Spain, the South of France, and within a few years into Hungary.

In Carolina it has long been a ſtaple commodity. Mr. Houghton's account of its introduction there is, that Mr. Aſhby was encouraged to ſend a hundred pound bag full of Rice to that province, from which in 1698, ſixty tons were imported into England[l].

Mr. Dalrymple ſays, that Rice in Carolina is the reſult of a ſmall bag of Paddy, given as a preſent from Mr. Dubois treaſurer of the Eaſt India Company to a Carolina trader. A Dutch veſſel alſo from Madagaſcar brought Rice into the ſame province; and to this is attributed their having two kinds[k].

Mr. Miller cultivated it here in 1739[l]: but Gerarde had it long before, for he ſays "the flower did not "ſhow itſelf with me, by reaſon of the injury of our "unſeaſonable year 1596." In his time ſtoves were unknown.

In the hilly parts of Java, and in many of the Eaſtern Iſlands, the Mountain Rice is planted upon the ſides of hills, where no water but rain can come; it is however planted in the beginning of the rainy ſeaſon, and reaped in the beginning of the dry ſeaſon. The natives call it *Paddy Gunung*, which ſignifies Mountain Rice. In the weſtern parts of India it is entirely unknown[m].

It is well known in Cochinchina, where it thrives in dry light ſoils moſtly on the ſides of hills, not requiring more moiſture than the uſual rains and dews ſupply, neither of which is frequent at the ſeaſon of its vegetation[n].

The French colonies are indebted to M. Poivre for introducing this dry rice in Cochinchina[o].

PROPAGATION AND CULTURE.

In China.

Much of the low grounds in the middle and ſouthern provinces of China is appropriated to the culture of Rice; which conſtitutes the principal part of the food of all thoſe who are not ſo indigent as to be forced to ſubſiſt on cheaper kinds of grain. A great proportion of the ſurface of the country is well adapted to the production of Rice. Many and great rivers run through the ſeveral provinces of China; the low grounds bordering on thoſe rivers are annually inundated, by which means a rich mud or mucilage is brought upon their ſurface, that fertilizes the ſoil, in the ſame manner as Egypt is by the overflowing of the Nile.

After the mud has lain ſome days, preparations are made for planting Rice. For this purpoſe, a ſmall ſpot of ground is incloſed by a bank of clay; the earth is ploughed up; and an upright harrow with a row of wooden pins in the lower end, is drawn lightly over it by a buffalo. The grain, previouſly ſteeped in dung diluted with animal water, is then ſown very thickly on it. A thin ſheet of water is immediately brought over it, either by channels leading to the ſpot from a ſource above it, or when below it, by means of a chain-pump, the uſe of which is as familiar as that of a hoe to every Chineſe huſbandman. In a few days the ſhoots appear above the water. In that interval, the remainder of the ground intended for cultivation, if ſtiff, is ploughed, the lumps broken by

[l] Colleƈtions, 2. 461.
[l] Hort. kew.
[k] Oriental Repertory, 1.
[m] Cook's voy. 2. 732.
[n] Staunton's Emb. to China, 1. 349.
[o] Rochon, Madag. introd. p. 45.

hoes,

hoes, and the ſurface levelled by the harrow. As ſoon as the ſhoots have attained the height of ſix or ſeven inches, they are plucked up by the roots, the tops of the blades cut off, and each root is planted ſeparately, ſometimes in ſmall furrows turned with the plough, and ſometimes in holes made in rows by a drilling ſtick for that purpoſe. The roots are about a foot aſunder. Water is brought over them a ſecond time, for the convenience of irrigation, and to regulate its proportion. The Rice fields are ſubdivided by narrow ridges of clay into ſmall incloſures. Through a channel in each ridge the water is conveyed at will to every ſubdiviſion. As the Rice approaches to maturity, the water, by evaporation and abſorption, diſappears entirely; and the crop, when ripe, covers dry ground. The firſt harveſt, in the ſouthern provinces particularly, happens towards the end of may or beginning of june.

The inſtrument for reaping is a ſmall toothed ſickle. The ſheaves are placed regularly in frames, two of which ſuſpended at the extremities of a bamboo pole are carried acroſs the ſhoulders of a man to the place where it is to be threſhed. This operation is performed not only by a flail, or by the treading of cattle, but ſometimes alſo by ſtriking it againſt a plank ſet upon its edge, or by beating it againſt the ſide of a large tub ſcolloped for that purpoſe; the back and ſides being much higher than the front, to prevent the grain from being diſperſed. After being winnowed it is carried to the granary.

To remove the ſkin or huſk of Rice, a large ſtrong earthen veſſel, or hollow ſtone, in form ſomewhat like that which is uſed elſewhere for filtering water, is fixed firmly in the ground, and the grain, placed in it, is ſtruck with a conical ſtone fixed to the extremity of a lever, and cleared, ſometimes indeed imperfectly, from the huſk. The ſame object is attained by paſſing the grain between two flat ſtones of a circular form, the upper of which turns round upon the other, but at ſuch a diſtance from it as not to break the grain. The operation is performed on a larger ſcale, in mills turned by water; the axis of the wheel carrying ſeveral arms, which raiſe levers by ſtriking upon the ends of them. Sometimes twenty of theſe levers are worked at once. The ſtraw is cut chiefly into chaff, to ſerve as provender for the very few cattle employed in Chineſe huſbandry.

The labour of the firſt crop being finiſhed, the ground is immediately prepared for the reception of freſh ſeeds. The firſt operation is to pull up the ſtubble, collect it into ſmall heaps, burn it, and ſcatter the aſhes upon the field. The former proceſſes are afterwards renewed. The ſecond crop is generally ripe late in october or early in november. The grain is treated as before; but the ſtubble is no longer burnt. It is turned under with the plough and left to putrefy in the earth. This, with the ſlime brought upon the ground by inundation, are the only manures uſually employed in the culture of Rice. Lands thus fertilized by the overflowing of the tide in the proximity of the ſea, or of rivers or canals, are not appropriated ſolely to the production of Rice. They are found equally ſuitable for raiſing an excellent crop of ſugar canes, with the precaution only of keeping off the water after the young canes appear above the ſurface.

Satisfied with two crops of Rice or one of Sugar in the year, the Chineſe huſbandman generally ſuffers the land to remain at reſt till the following ſpring, when the ſame proceſs is repeated. And thus from generation to generation, ſucceſſive crops are raiſed from the ſame ſoil, without the leaſt idea of any neceſſity to let the earth lie fallow or idle for a year*.]

Culture in England.

Sow the ſeeds on a hot-bed, and when the plants are come up, tranſplant them into pots filled with rich light earth, and placed in pans of water, which ſhould be plunged into a hot-bed; and as the water waſtes it muſt be renewed from time to time. Keep them in the ſtove all the ſummer, and towards the end of auguſt, they will produce the grain, which will ripen tolerably well, provided the autumn prove favourable.

[ORYZA. See *Paſpalum.*

OSBECKIA. (*So named by Linnæus, in honour of Peter Oſbeck, rector of Haſſelef and Wexiorp in Sweden, member of the academy of Stockholm, and of the ſociety of Upſal: author of a Voyage to China and the Eaſt Indies, in* 1751; *printed in* 1757—*Engliſh by Forſter*, 1771.)

Lin. gen. n. 467. *Reich. n.* 503. *Schreb. n.* 635. *Gærtn. t.* 126. *Juſſ.* 330.

Claſſ. 8. 1. Octandria Monogynia.

Nat. order of *Calycanthemæ. Melaſtomæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, permanent: *border* four-parted, deciduous: *lobes* oblong, acute, with a ciliate ſcalelet interpoſed between the lobes.

COR. *Petals* four, roundiſh, ſeſſile, longer than the calyx.

STAM. *Filaments* eight, filiform, ſhort. *Anthers* oblong, erect, terminated by a filiform beak, the length of the anther itſelf.

PIST. *Germ* inferior, ovate, faſtened to the calyx below, terminated at top by four ciliate ſcales. *Style* awl-ſhaped, the length of the ſtamens. *Stigma* ſimple.

PER. *Capſule* clothed with the truncated tube of the calyx, ſubovate, four-celled, the cells gaping longitudinally at the top.

SEEDS very many, roundiſh. *Receptacles* creſcent-ſhaped, (wide, compreſſed, *G.*)

ESSENTIAL CHARACTER.

Cal. four-cleft, with the lobes ſeparated by a ciliary ſcale (or five-cleft without intercalated ſcales, *G.*) *Cor.* four-petalled (or five-petalled. *Stam.* eight or ten. *G.*) *Anthers* beaked. *Capſ.* inferior, four-celled (or five-celled, *G.*) ſurrounded by the truncated tube of the calyx.

SPECIES.

1. Oſbeckia chinenſis.

Lin. ſpec. 490. *Jacq. fragm.* 357. *Reich.* 2. 145. *ſuppl.* 215. *Oſb. it.* 213. *t.* 2. *ed. angl.* 1. 343. *Burm. ind.* 86. *Lour. cochinch.* 228. *Gærtn. fruct.* 2. 202. *Pluk. phyt. t.* 173. *f.* 4. (Echinophora). *Raii ſuppl. app.* 236. (Kadali).

Leaves ſeſſile, peduncles axillary three-flowered bracted.

2. Oſbeckia zeylanica.

Lin. ſyſt. 357. *ſuppl.* 215.

Leaves petioled, peduncles axillary one-flowered naked.

DESCRIPTIONS, *&c.*

1. Root perennial, woody, ſometimes conſiſting of a little knob with branches. Stems quadrangular, the thickneſs of a packthread, ſeldom exceeding half a yard in length, generally branched, and ſometimes like a little buſh. The branches, which are quadrangular and ſomewhat hairy, are commonly oppoſite, and ſingle, or not divided. On the top are commonly two flowers, ſurrounded with four leaves, two of which are ſhort, but longer than the flowers: the leaves are oppoſite; each couple is an inch or more from the other, and the nearer to the flower the farther they are aſunder. They are ſomewhat obtuſe in young plants, and about an inch long, but in old ones they are longer, and ſharp: thoſe which grow at the bottom of the branches are frequently as long again as the others. Moſt of them have no petiole, and are lanceolated ſometimes, yet narrower; almoſt every where of equal breadth; margins entire; the upper ſide covered with ſtiff hairs which lie down; on the under ſide, on the edge, and upon the three veins, which run almoſt the whole length of the leaf in a ſtraight line, there is only a thin pubeſcence. The calycine ſegments are ſomewhat downy on the outſide. Petals red. Filaments inflected, and together with the petals, faſtened to the calyx: of the ſame length with the calyx, and conſequently ſhorter than the petals. The capſule looks like a little pot or pitcher, running narrower to the bottom. Seeds ſmall, in a microſcope looking like little worms lying in a circular form†.

According to Linnæus it has the habit of Melaſtoma. Stem erect, brachiate, acutely quadrangular. Leaves

* Staunton, Emb. to China, 2. 392 to 397. See Thunberg's travels, 4. 85. 3. 148.

† Oſbeck.

narrow-

narrow-lanceolate, three-nerved, oppoſite, rugged, ſubſeſſile. Flowers terminating, few, ſeſſile, ſurrounded by four leaves, longer than the flower, and ſpreading [1].

Loureiro ſays that the ſtem is two feet high, ſuffruticoſe, hairy, branched. Leaves hiſpid, quite entire. Flowers red, heaped, terminating, pedunculed. Anthers oblong, tailed, not broken, nor beaked. Berry roundiſh, juiceleſs.

According to Gærtner, the ſeed-veſſel is an inferior ovate Capſule, covered with the hiſpid calyx adhering cloſe to it, and with ſtiff cluſtered briſtles, ſcarcely conſtituent into ſcales, crowned at the top, five-celled, and opening into five parts above. Receptacles five, one in each cell, ſemiovate, wedge-form-compreſſed, free on one ſide, on the other faſtened longitudinally to the axis of the capſule. Seeds very numerous, ſmall, globular-kidney-form, ſomewhat ruſſet, or dirty ſtraw-coloured. Skin double: outer cruſtaceous, brittle; inner membranaceous, very thin: no veſtige of any albumen: embryo of the ſame ſhape with the ſeed, bowed, yellow; cotyledons plano-convex, ſhort, thick; radicle longer than the cotyledons, curved centripetal. Gærtner doubts, whether the fruit here deſcribed, may not rather be that of Oſb. zeylanica.

Native of the Eaſt Indies and China. The Chineſe call it *Komm-Heyong-hoaa*, or *Feather of Gold Roſes*. The whole plant is ſold in the apothecaries ſhops; they boil it with old *Kuii-Tea*, and drink the decoction in colics. In ſtrains and ſwellings it is uſed in the bath [2].

2. In appearance this reſembles the preceding very much. It is a native of Ceylon, and was found there by Koenig [3].

OSIER. See *Salix*.

OSMANTHUS. See *Olea*.

OSMITES. (*From* Ὀσμὴ, *odor: on account of its powerful ſweet ſmell.*)

Lin. gen. n. 983. *Reich. n.* 1063. *Schreb. n.* 1326. *Gærtn. t.* 174. *Juſſ.* 186. Bellidiaſtrum. *Vaill. mem. par.* 1720.

Claſſ. 19. 3. Syngeneſia Polygamia Fruſtranea.

Nat. order of *Compoſitæ Diſcoideæ. Corymbiferæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Common* imbricate, gibbous; with the inmoſt leaflets augmented at the tip.

COR. *Compound* radiate: *Corollets* hermaphrodite ſeveral in the diſk. *Female* in the ray.

Proper of the hermaphrodite tubular, five-cleft: of the female ligulate, entire.

STAM. in the hermaphrodites, *Filaments* five, very ſhort. *Anther* cylindrical, tubular.

PIST. in the hermaphrodites: *germ* oblong; *ſtyle* filiform, the length of the corollet; *ſtigma* bifid. In the females, *germ* ſmaller; *ſtyle* filiform, the length of the corollet; *ſtigma* obſolete.

PER. none. *Calyx* unchanged.

SEEDS in the hermaphrodites ſolitary, oblong; with ſcarcely any *pappus*, or only margined: the *pappus* obſolete and ſomewhat chaffy:—in the females, rudiments commonly abortive.

RECEPT. chaffy.

ESSENTIAL CHARACTER.

Cal. imbricate, ſcarioſe. *Cor.* of the ray ligulate. *Down* obſolete. *Recept.* chaffy.

SPECIES.

1. Oſmites Bellidiaſtrum.
Lin. ſpec. 1285. *Reich.* 3. 892. *amoen.* 4. 330. (Anthemis).
Bellis fruteſcens africana camphorata. *Raii ſuppl.* 221. Bellidiaſtrum. *Vaill. mem. par.* 588.
Leaves linear fleſhy, ſtems ſcarioſe.

2. Oſmites camphorina.
Lin. ſpec. 1285. *ſyſt.* 783. *Reich.* 3. 892. *mant.* 477. *amoen.* 6. *afr.* 78. *Gærtn. fruct.* 2. 442. *Seba muſ.* 1. 143. *t.* 90. *f.* 2. (Bellis).
β. Anthemis leucanthia. *Lin. ſpec.* 1261.
Leaves lanceolate ſubſerrate toothed at the baſe.

3. Oſmites Aſteriſcoides.
Lin. ſpec. 1285. *ſyſt.* 783. *Reich.* 3. 893. *amoen.* 6. *afr.* 79. *Berg. cap.* 305. *Gærtn. fruct.* 2. 442. *Burm. afr.* 161. *t.* 58. *f.* 1. (Leucanthemum). *Raii ſuppl.* 221. *Seba muſ.* 1. *t.* 16. *f.* 4. (Bellis).
Leaves lanceolate dotted, ſtems leafy.

4. Oſmites calycina.
Lin. ſyſt. 783. *ſuppl.* 380.
Leaves lanceolate naked, calyxes ſcarioſe.

DESCRIPTIONS, &c.

1. Branches woody and thickiſh. Leaves oblong, narrow, acute, nearly of the ſame form and ſize with thoſe of Hyſſop, ſeſſile, all over the branches to the very flowers, which are ſeveral in number at the ends of the ſtem and branches: the diſk of them is yellow and the ray white [4].

2. Stems quite ſimple, with one pedunculed flower. Leaves like thoſe of *Coryſanthemum Leucanthemum*, or Ox-eye Daiſy, tooth-ſerrate, naked, gradually ſmaller towards the top: they are ſeſſile, alternate, cluſtered, tomentoſe. Ray of the corolla white; diſk yellow [5].

Receptacle ſomewhat convex: chaffs between the florets linear-oblong, concave, a little ſhorter than the calyx, or the ſame length with the florets of the diſk. Linnæus remarks that they are blueiſh at the tip. Seeds ſmall, ovate, attenuated each way to an obſolete edge, convex on one ſide and grooved or ſtriated, flat on the other; pale. *Pappus* chaffy, many-leaved; leaflets ſhorter by half than the ſeed, acuminate, quite entire or toothletted [6]. It has a very ſtrong ſmell of Camphor, whence both its names.

3. Stem thick, warted. Leaves ſcattered, naked, linear, ſerrate at the tip. Flowers terminating ſeſſile [7]. Calyx hemiſpherical, conſiſting of many leaves in a double row: leaflets herbaceous, acuminate, almoſt equal, pubeſcent on the outſide. Receptacle flattiſh, with the chaffs of the ſame length with the florets of the diſk. Florets of the ray neuter, with ovate-lanceolate, quite entire, yellow petals:—of the diſk androgynous, tubular; the corollets when mature arched at the baſe into a hemiſpherical ſpongy calyptra, or veil, covering the top of the ſeed. Theſe florets are ſucceeded by oblong ſeeds, ſomewhat convex, and grooved on one ſide, flat on the other, of a brown bay colour. They have no pappus; but in its ſtead a rim, that is ſomewhat waved, quite entire, covered by the veil of the corollet, ſurrounding a little ſhort white papilla, placed on the very ſummit of the ſeed. This ſpecies differs ſo much from the preceding, that it might conſtitute a ſeparate genus [8].

4. Stem erect, proliferous, not thickened: branches a little pubeſcent. Leaves ſcattered, erect, narrow-lanceolate, naked or very little pubeſcent, ſtriated, nerved underneath. Flowers terminating, ſolitary, ſeſſile. The inner row of the ſcales of the calyx lanceolate, the ſame length with the diſk of the corolla, and therefore the calyx is rayed. Corolla yellow [9].

Theſe are all ſhrubs, natives of the Cape of Good Hope.]

OSMUNDA.

[*Lin. gen. n.* 1172. *Reich. n.* 1289. *Schreb. n.* 1622. *Tournef. t.* 324. *Juſſ.* 15.

Claſſ. 24. 2. Cryptogamia Filices.

Nat. order of *Filices* or Ferns.

GENERIC CHARACTER.

Capſules diſtinct, diſpoſed in a raceme, in ſuch a manner as to look the ſame way, or elſe heaped on the back of the pinna or diviſion of the frond, ſeſſile, ſubglobular, opening tranſverſely, without any ring. *Seeds* very many, extremely minute.

OBS. *The ſpecies with capſules ſurrounded by an elaſtic ring ought to be removed from this genus.*

SPECIES.

1. Oſmunda zeylanica.
Lin. ſpec. 1519. *Reich.* 4. 378. *fl. zeyl. n.* 373.
Ophioglooſſum laciniatum. *Rumph. amb.* 6. 153. *t.* 68. *f.* 3.
Scape cauline ſolitary, fronds verticillate lanceolate undivided.

2. Oſmunda Lunaria. *Moon-wort.*
Lin. ſpec. 1519. *ſyſt.* 927. *Reich.* 4. 379. *fl. fuec. n.* 932. *lapp. n.* 389. *hort. cliff.* 472. *Hudſ. angl.*

[1] Linn. ſpec. [2] Osbeck. [3] Linn. ſuppl. [4] Ray. [5] Linn. mant. & amoen. [6] Gærtner. [7] Linn. [8] Gærtner. [9] Linn. ſuppl.

449. *Wither. arr. ed.* 3. 762. *Engl. bot. t.* 318. *Bolton fil.* 4. *Lightf. scot.* 652. *Relh. cant. n.* 755. *Sibth. oxon. n.* 738. *Hall. helv. n.* 1686. *Weis. crypt.* 285. *Pollich pal. n.* 954. *Scop. carn. n.* 1257. *Fl. dan. t.* 18. *f.* 1. *Villars dauph.* 3. 836. *Allion. pedem. n.* 2387. *Kniph. cent.* 11. *n.* 82. *Blackw. t.* 420. *Knorr. del. hort.* 2. *t.* O. 3. *Zorn. ic.* 1. *t.* 65.

O. foliis lunatis. *Tournef. inſt.* 547. *Garid. aix. t.* 75.

Lunaria minor. *Camer. emit.* 643. 1. *Dalech.* 1313. *Fuchſ.* 483. *Matth.* 903. *Lonic.* 1. 77. 1. *Ger.* 328. 2. *emac.* 405. 2. *Park. theat.* 507. *Raii hiſt.* 127. *ſyn.* 128. *Mor. hiſt. ſ.* 14. *t.* 5. *f.* 1.

L. racemoſa minor & vulgaris. *Baub. pin.* 354.

L. botrytis. *Baub. hiſt.* 3. 709.—minor. *Cluſ. hiſt.* 2. 118. 2.

Lunaria. *Dod. pempt.* 139. 2. *Trag.* 914.

L. racemoſa. *Lob. obſ.* 470. 3. *ic.* 1. 807. 2.

Epimedium Dioſcoridis. *Col. phyt.* 18.

β. Lunaria racemoſa ramoſa major. *Baub. pin.* 355. *Wither. var.* 2.

Lunariæ rarior ſpecies. *Cam. epit.* 644.

γ. L. racemoſa minor, adianti folio. *Breyn. cent.* 183. *t.* 93. *Fl. dan. t.* 18. *f.* 3. *Mor. ord.* 2. *f.* 3. *Wither. var.* 3.—β. *Hudſ. Bolt. p.* 5. *Raii hiſt.* 127.

L. minor fol. diſſectis. *Raii ſyn.* 129.

δ. L. minor rutaceo folio. *Baub. pin.* 355.

Scape cauline ſolitary, frond pinnate ſolitary.

3. Oſmunda virginica.

Lin. ſpec. 1519. *Reich.* 4. 379. *Gron. virg.* 196.

O. aſphodeli radice. *Plum. fil.* 136. *t.* 159. *Pet. fil.* 168. *t.* 9. *f.* 2.

Scape cauline ſolitary, frond ſuperdecompound.

4. Oſmunda ternata.

Lin. ſyſt. 927. *Thunb. jap.* 329. *t.* 32.

Scape cauline ſolitary, frond three-parted ſuperdecompound.

5. Oſmunda phyllitidis.

Lin. ſpec. 1520. *Reich.* 4. 379. *Plum. fil.* 133. *t.* 156. *Pet. fil.* 163. *t.* 8. *f.* 15.

Scapes cauline in pairs, frond pinnate, ſtem even.

6. Oſmunda hirta.

Lin. ſpec. 1520. *Reich.* 4. 379. *Pet. fil.* 164. *t.* 14. *f.* 5. *Plum. fil.* 114. *t.* 157.

Lunaria hirſuta, lonchitidis folio, ſpica gemella. *Raii ſuppl.* 102. *Mor. hiſt.* 3. 595. 8.

Scapes cauline in pairs, frond pinnate, ſtem rough-haired.

7. Oſmunda hirſuta.

Lin. ſpec. 1520. *Reich.* 4. 380. *Pet. fil.* 165. *t.* 8. *f.* 16. *Plum. fil.* 138. *t.* 162.

Lunaria elatior, matricariæ folio, ſpica duplici. *Sloan. jam.* 1. 71. *t.* 25. *f.* 6. *Mor. hiſt.* 3. 595. 7. *Raii ſuppl.* 101.

Scapes cauline in pairs, frond bipinnate hirſute.

8. Oſmunda adianthifolia.

Lin. ſpec. 1520. *Reich.* 4. 480. *Plum. fil.* 135. *t.* 158. *Pet. fil.* 167. *t.* 9. *f.* 1.

Lunaria elatior, adianti albi folio, duplici ſpica. *Sloan. jam.* 1. 71. *Mor. hiſt.* 3. 595. 6.

Adiantum ſaxoſum floridum. *Plum. amer.* 29. *t.* 43. *Raii ſuppl.* 101.

Scapes cauline in pairs, frond ſuperdecompound.

9. Oſmunda verticillata.

Lin. ſpec. 1520. *Reich.* 4. 380. *Plum. fil.* 137. *t.* 160. *Pet. fil.* 171. *t.* 12. *f.* 4.

Scapes radicate, racemes verticillate, frond ſuperdecompound.

10. Oſmunda cervina.

Lin. ſpec. 1521. *Reich.* 4. 380. *Plum. fil.* 132. *t.* 154. *Pet. fil.* 162. *t.* 8. *f.* 3.

Scape radicate, frond pinnate, pinnas quite entire.

11. Oſmunda bipinnata.

Lin. ſpec. 1521. *Reich.* 4. 381. *Plum. fil.* 133. *t.* 155.

Scape radicate, frond pinnate, pinnas pinnatifid.

12. Oſmunda peltata.

Swartz prodr. 127.

Lichen digitatus geranii facie. *Plum. fil. t.* 50. *f.* 4.

Shoot creeping, fructifications padate diſtinct roundiſh-halved entire, fronds dichotomous with linear ſegments.

13. Oſmunda aurita.

Swartz prodr. 127.

Scapes radicate, fronds bipinnate at bottom, pinnate at top, pinnas at the baſe eared upwards ſerrate convex ſhining.

14. Oſmunda filiculifolia.

Lin. ſpec. 1521. *Reich.* 4. 381. *hort. cliff.* 172. *Plum. fil.* 138. *t.* 161. *Pet. fil.* 170. *t.* 9. *f.* 3.

Scape radicate panicled, frond ſuperdecompound.

15. Oſmunda regalis. *Oſmund-royal*, or *Flowering Fern.*

[*Lin. ſpec.* 1521. *ſyſt.* 927. *Reich.* 4. 381. *fl. ſuec. n.* 933. *hort. cliff.* 472. *Hudſ. angl.* 449. *Wither. arr. ed.* 3. 763. *Engl. bot.* 209. *Lightf. ſcot.* 653. *Fl. dan. t.* 217. *Villars dauph.* 3. 837. *Allion. pedem. n.* 2388. *Kniph. cent.* 2. *n.* 49. *Blackw. t.* 324. *Plum. fil.* 35. *t.* B. *f.* 4. *Bolton fil.* 5. *Park. theat.* 1038. *Lob. obſ.* 474. 1, 2. *ic.* 1. 813.

Filix ramoſa non dentata florida. *Baub. pin.* 357. *Mor. hiſt. ſ.* 14. *t.* 4. *ord.* 3. *f.* 1. *Raii ſyn.* 125. *ed.* 1. 1, 2. *ad. p.* 1. fig.

F. florida ſ. O. regalis. *Ger.* 971. *emac.* 1131. *Raii hiſt.* 151.

F. floribus inſignis. *Baub. hiſt.* 3. 736.

F. paluſtris. *Dod. pempt.* 463.

β. *Gron. virg.* 123. *Pluk. phyt. t.* 181. *f.* 4. *Mor. hiſt.* 3. 593.

Fronds bipinnate, racemiferous at the top.

16. Oſmunda claytoniana. *Virginian Oſmunda.*

Lin. ſpec. 1521. *Reich.* 4. 381. *Clayt.*

Fronds pinnate, pinnas pinnatifid cloſely fruitifying at top.

17. Oſmunda capenſis.

Lin. ſyſt. 927. *Reich.* 4. 382. *mant.* 306.

Fronds pinnate, pinnas cordate-lanceolate crenulate.

18. Oſmunda cinnamomea. *Woolly Oſmunda.*

Lin. ſpec. 1522. *Reich.* 4. 382. *Pet. muſ.* 86. *Raii ſuppl.* 86.

Frond pinnate, pinnas pinnatifid, ſcapes hirſute, racemes oppoſite compound.

19. Oſmunda Struthiopteris. *Bird's-neſt* or *Ruſſian Oſmunda.*

Lin. ſpec. 1522. *ſyſt.* 927. *Reich.* 4. 382. *fl. ſuec. n.* 935. *Pallas it.* 1. 35. *Gunn. norv. n.* 1. *t.* 1. *f.* 1, 2, 3. *Fl. dan. t.* 169.

Filix paluſtris altera fuſco pulvere hirſuta. *Baub. pin.* 358.

Filicaſtrum ſeptentrionale & paluſtre. *Amm. ruth.* 175. *act. petrop.* 10. *t.* 18.

Lonchitis norvegica minor. *Raii app.* 68.

Struthiopteris. *Thal. herc.* 119.

Fronds pinnate, pinnas pinnatifid, fruitifying ſcape diſtich.

20. Oſmunda lineata.

Swartz prodr. 127.

Fronds pinnate lanceolate, obliquely cordate at the baſe, entire at the edge; the fruitifying pinnas crenulate ſcaly in the middle.

21. Oſmunda polypodioides.

Swartz prodr. 127.

Fronds lanceolate pinnatifid, ſegments confluent entire aſcending, with raiſed dots at the edge, ſcape lanceolate, pinnas remote.

22. Oſmunda Spicant. *Rough Spleenwoort.*

Lin. ſpec. 1522. *ſyſt.* 928. *Reich.* 4. 383. *fl. ſuec. n.* 936. *Fl. dan. t.* 99. *Hudſ. angl.* 450. *Curt. lond.* 2. 67. 127. *Lightf. ſcot.* 654. *Relh. cant. n.* 756.

Blechnum Spicant. *Wither. arr. ed.* 3. 765.

Acroſtichum Spicant. *Sibth. oxon. n.* 739. *Villars dauph.* 838. *Hedw. theor.* 5.

Struthiopteris. *Hall. helv. n.* 1687.—Spicant. *Scop. carn. n.* 1258. *Weis. crypt.* 287.

Filicaſtrum Polypodii folio breviore et craſſiore. *Act. petrop.* 10. 280.

Polypodioides vulgaris foliis anguſtis. *Mich. florent.* 163. *Tezzet. it.* 1. 197.

Lonchitis altera. *Cluſ. hiſt.* 2. 213. 1.

Lonchitis minor. *Baub. pin.* 359.

L. aſpera. *Dod. pempt.* 469. 1. *Ger.* 978. 2. *emac.* 1140. 2. *Raii hiſt.* 138. *ſyn.* 118.—minor. *Park. theat.* 1042. 2. *Camer. epit.* 665.

L. altera.

L. altera. *Lob. obſ.* 475. 2. *ic.* 1. 815. 2.—folio Polypodii. *Baub. hiſt.* 3. 745. 2. *Mor. hiſt.* 3. *ſ.* 14. *t.* 2. *f.* 23.

Scolopendrium majus. *Lonic.* 1. 225. 1.

Fronds lanceolate pinnatifid, ſegments confluent quite entire parallel.

23. Oſmunda criſpa. *Curled Oſmunda* or *Stone Fern.*
Lin. ſpec. 1522. *ſyſt.* 928. *Reich.* 4. 383. *mant.* 505. *Hudſ. angl.* 450. *Fl. dan. t.* 496. *Bolton* 7.

Pteris criſpa. *Wither. arr. ed.* 3. 764. *Allion. pedem. n.* 2392.

Acroſtichum criſpum. *Villars dauph.* 3. 838.

Adiantum foliis minutim in oblongum ſciſſis, pediculo viridi. *Baub. pin.* 355. *Mor. hiſt.* 3. 585. *ſ.* 14. *t.* 5. *f.* 25.

A. album tenuiſolium, Rutæ muratiæ accedens. *Baub. hiſt.* 3. 743. *Raii hiſt.* 147.

A. album criſpum alpinum. *Schwenckf. cat.* 10. *Raii ſyn.* 2. 49. 3. & 3. 126. 9. *hiſt.* 147.

A. album floridum ſ. Filicula petræa criſpa. *Raii ſyn.* 2. 51. 10. *hiſt.* 153. *Pluk. phyt. t.* 3. *f.* 2, 3.

Rutæ muratiæ ſorte affinis, A. album criſpum alpinum. *Baub. hiſt.* 3. 743.

Filix. *Hall. helv. n.* 1689.—botryoides ſ. Filicula petræa florida anglica, foliis plurifariam diviſis. *Mor. hiſt.* 3. 593. *ſ.* 14. *t.* 4. *f.* 4, & 27.

24. Oſmunda japonica.
Lin. ſyſt. 928. *Thunb. jap.* 330.
Frond bipinnate, pinnas cordate-lanceolate ſerrate.

25. Oſmunda lancea.
Lin. ſyſt. 928. *Thunb. jap.* 330.
Frond bipinnate, pinnas lanceolate ſerrate.

26. Oſmunda diſcolor.
Forſt. flor. auſtral. n. 413.
Fronds pinnate, pinnas oblong ſharpiſh entire ſeſſile alternate approximating.

27. Oſmunda procera.
Forſt. flor. auſtral. n. 414.
Fronds pinnate, pinnas remote ovate-oblong acuminate ſerrate ſeſſile.

DESCRIPTIONS, *&c.*

Some of the ſpecies (as Struthiopteris, Spicant and criſpa) do not belong to this genus, having the elaſtic ring common to the dorſiferous Ferns, or Ferns properly ſo called. *O. Spicant* is referred to *Blechnum* by ſome, to *Acroſtichum* by others, to *Struthiopteris* by Haller, Scopoli and Weis. *O. criſpa* is referred to *Pteris*; Villars make it an *Acroſtichum*; old authors in general name it an *Adiantum*. Till the genera of Ferns are better arranged, I have left the ſpecies as I find them in the 14th edition of *Syſtema Vegetabilium*; though there is no doubt of the ſpecies named above being eſſentially different from the genuine Oſmundas.

1. Plant a foot high, with a naked ſtem, terminated commonly by ſeven, petioled, undivided, lanceolate leaves, placed in a ring, and erect; among them riſes a cylindrical, peduncled ſpike[b]. Native of Ceylon and Amboina.

2. Root fibrous. Plant three, four, or five inches high, ſometimes a little higher. The ſtem divides in the middle into two branches, one of which immediately puts forth leaflets on each ſide; the other ſupports a naked flowering raceme[c]. Pinnas of the frond fleſhy, creſcent-ſhaped, ſemi-circular and halbert-ſhaped, irregularly ſcolloped, from three to eight pairs with an odd one. Spike or rather panicle from one to two inches long[d]. The branches lean one way; two rows of globular capſules are affixed to them, green at firſt, but yellow when ripe, and burſting vertically from the top to the baſe. Theſe capſules are divided by an annular zone, and contain numerous, oval, duſt-like ſeeds[e].

Weis thus deſcribes the fructification.—About the origin of the leaf, comes out a ſingle floral ſcape, which is a continuation of the ſtem; it is from an inch to two inches in length, branched, the branches commonly oppoſite, three, four, to ſix or ſeven and even more on each ſide, ſimple or ſomewhat branched, to which roundiſh capſules are fixed in a ſort of raceme, cloſely heaped in a double row, green at firſt, but turning yellow, and gaping widely from the top towards the baſe.

Linneus obſerves, that within the baſe of the ſtem, early in the ſpring, we may find a complete rudiment of the next year's plant.

Mr. Woodward remarks, that Moon-wort ſo exactly reſembles *Ophioglaſſum vulgatum* in habit and ſtructure, that they ought by no means to be ſeparated.

The difficulty, ſays Monſ. Villars, of meeting with this plant, which is not common, and lies concealed among graſs, the ſingularity of its leaves, the ſuperſtitious reveries of Matthiolus, who has attributed ſupernatural virtues to it, all conſpire to make it ſought after by philoſophers, herbariſts, and thoſe who hunt after wonderful ſecrets and the philoſopher's ſtone. After all, it is merely vulnerary, aſtringent, and a little mucilaginous.—Native of moſt parts of Europe in dry paſtures; flowering from may to july.—With us, near Linton and Chippenham in Cambridgeſhire; Colcheſter in Eſſex; Bury in Suffolk; Stratton-heath in Norfolk; Shotover-hill, and North-Leigh-heath in Oxfordſhire; Scadbury-park, Maidſtone, Blackheath and Cheſſelhurſt-common in Kent; north ſide of Bredon-hill and near Stourbridge in Worceſterſhire; near Bath in Somerſetſhire; Nottinghamſhire; Lancaſhire; near Settle and Ingleton in Yorkſhire; in mountainous paſtures of Weſtmoreland; in Scotland, on Ardgath-hill, to the north of Linlithgow; near Dundonald's, two miles from Little Loch Broom, on the weſtern coaſt of Roſs-ſhire, in the iſle of Skye, &c. In Ireland, on the riſing ground of a meadow two hundred yards north of the ſecond Lock of Lagan canal, found by Mr. John Templeton of Orangegrove near Belfaſt.

There are ſeveral varieties of this curious little plant, with ſeveral leaves and ſpikes, and with the leaves cloven.

3. Native of North America.

4. Root compoſed of numerous filiform fibres in bundles, with few fibrils. Stipe ſimple at bottom, an inch high, and then dividing into a frond and a floriferous ſcape. Frond ſolitary, petioled, ſuper-decompound-ternate, ſmooth: petiole compreſſed a little, a finger's length, triternate below, naked, leafy above, bipinnate. Pinnas and pinnules alternate, gaſhed, very finely ſerrate. Scape from the baſe of the petiole, roundiſh, ſtriated, erect, naked, ſmooth, twice as long as the frond, drooping and flowering at top. Spike branched: ſpikelets alternate, with globular capſules.

Native of Japan, about Nagaſaki, flowering in october and november[f].

5. Native of South America.

6. Root a bundle of ſmall fibres. Stems ſix or ſeven, a foot high, brittle, green with brown hairs. On the upper part of theſe are two oppoſite fronds, an inch and half long, and half an inch wide, mucronate, toothed on the edge, green and ſmooth on the upper ſurface, but loaded with white hairs on the under. From the baſe of the fronds ariſe two ſcapes, half a foot long, ſlender, covered with a ſilky lanugo, and terminated by erect, pyramidal racemes, two inches long[g].

Found by Plumier in the iſland of Martinico.

7. This riſes a foot or more, and is higher than the next ſpecies. In its higher ſpikes, which are double, it exactly agrees with it, only the pinnules are longer, narrower, not cut quite into the midrib, and of a paler green colour, ſomething in their diviſions, like the leaves of *Matricaria*.

8. This is ſometimes about a foot, but moſtly ſix or ſeven inches high, having a very ſlender green ſtalk, at firſt coming out of the earth of a dark colour. At about four inches from the ground, out of one ſide of the ſtalk ariſes one branch, on which twigs are ſet alternately, having ſeveral broad irregularly figured roundiſh pinnules, ſometimes deeply cut, at other times a little indented on the edges, of a pale green colour, like Adiantum album, and having many furrows ap-

[b] Linn. zeyl. [c] Scopoli. [d] Woodw. and Withering. [e] Lightfoot. [f] Thunberg. [g] Plumier. amer. 18. t. 26. and Moriſon.

pearing

pearing radiated. From the axil of this branch riſe two round, ſmall, green ſtalks, two inches long, towards the tops of which are ſeveral ſmall bunches of capſules, at firſt green, afterwards ferruginous. The root is covered with blackiſh hair, having ſeveral fibrils.

Both natives of Jamaica, by the banks of Rio Cobre [b].

9, 10, 11. Found in South America by Plumier.

12. This alſo is a native of Jamaica, where it was found by Swartz.—According to the Preſident of the Linnæan Society, it is a ſpecies of *Acroſtichum*.

13. Native of Jamaica, where it was found by Swartz.

14. Found in South America by Plumier.

15. Root thick, externally fibrous, and covered with thin brown ſcales. Plant from two to four feet high, of a pleaſant tranſparent green. Pinnules of the frond from ſix to ten pairs with an odd one at the end, each about two inches long, lanceolate or linear-lanceolate, blunt, finely but indiſtinctly ſerrated, divided by a midrib, from both ſides of which ariſe numerous fine biſid dichotomous nerves, their ramifications capillary and parallel; the lower and younger ones often lobed at the baſe. The central leaves are terminated by a bipinnate branch of fructifications; the pinnules awl-ſhaped, and crowded with ſeſſile cluſters of globular capſules, green when young, but reddiſh brown when ripe, and burſting vertically. The external leaves are barren [l].

Native of ſeveral parts of Europe, and alſo of Virginia, in watery places and bogs; it is the largeſt and handſomeſt of our Britiſh Ferns, and is found near Yarmouth and St. Faith's Newton bogs near Norwich; in the New Foreſt; in Cornwall; in the iſle of Angleſea; in ſeveral parts of Scotland; in Ireland, where it is called *Bog Onion*, in Kirkiſtown bog [m]. In Gerarde, the names are Water Fern, Oſmund the Waterman, St. Chriſtopher's herb.

This is the only ſpecies of Oſmunda which is noticed by Mr. Miller.

16. Linneus remarks, that O. regalis connects the preceding with this, and that this connects the following ſpecies with that.—Native of North America. Introduced in 1772, by Samuel Martin, M. D. It flowers in auguſt [n].

17. Frond leafy, more than a foot high, ſimply pinnate, with a chaffy ſtock. Pinnas ſeſſile, enſiform, tranſverſely ſtriated, ſerrulate, approximating, cordate at the baſe, embracing, even. Scape formed of the fructifying frond. Pinnas linear, diſtich, alternate, remote, a finger's length, the thickneſs of a gooſe-quill, rolled back at the edge, covering at firſt the fructification, and afterwards the diſk between the margins, as in *Acroſtichum*.—Native of the Cape of Good Hope [o].

18. Native of North America. Introduced in 1772, by Samuel Martin, M. D. It flowers in june [p].

19. The fronds grow in a ring, forming a hollow diſk, as in *Aſplenium Nidus* and *Scrophularia nodoſa*, and thus affording an aſylum to ſome of the Amphibia and the neſt of Birds [q].—Native of the north of Europe. Cultivated in 1760, by Peter Collinſon, Eſq.[r]

20, 21. Natives of Jamaica [s].

22. Several barren leaves proceed from one fibrous root, diſpoſed in a ring, half upright or reclining, from a ſpan to a foot in length, reſembling thoſe of Common Polypody, ſimple and pinnatifid; the pinnas cloſe, alternate, lanceolate, oblong, about two lines broad, quite entire, curved upwards; the middle ones largeſt, an inch or an inch and half in length; the upper and lower ones ſhorter, ribbed, the edge cartilaginous, very ſlightly notched, and bent backwards. Stipe or midrib beſet on the lower part with ſmall brown ſcales. From the centre of theſe leaves ariſe others bearing the fructifications; theſe are alſo pinnated, but twice as long, and more ſlender; the pinnas looſely ſet and alternate, a line in breadth; the middle ones longeſt, the upper and lower ones gradually decreaſing [t]. The narrow ſegments of theſe fertile leaves are remote from each other, the confluence however may almoſt always be traced, and towards the bottom of the leaf gives a waved appearance to the midrib [u]. Capſules cloſely crowded together, forming two diſtinct lines, parallel with the edges of the leaf, at firſt of a yelloviſh colour, becoming brown as they ripen [v]. Fructifications covered at firſt with a thin membrane. Capſule one-celled, two-valved, connected by an annular elaſtic cord, containing many minute ſeeds [w].

Dr. Withering, who in his ſecond edition had made this Fern an *Acroſtichum*, in his third introduces it as a *Blechnum*, in compliance with the opinion of Dr. Smith and Mr. Robſon, though from the narrowneſs of the leaflets it is not eaſy to determine whether the rows of capſules may more properly be conſidered as contiguous and parallel to the midrib, which is the character of that genus, or as diſpoſed along the edge of the leaf, which would refer it to the *Pteris*. It appears however from Hedwig's microſcopical diſſections, that the anthers are found upon the midrib; and that circumſtance ſeems ſufficient to determine that the rows of capſules more properly belong to that than to the edge of the leaf, notwithſtanding Hedwig himſelf has determined it to belong to the genus *Acroſtichum*.

Wherever botaniſts may at length agree to fix this Fern, it is clear that it cannot be an *Oſmunda*.

Rough Spleenwort is native of ſeveral parts of Europe, in woods and on moiſt heaths; producing its fructifications from july to ſeptember. It is not uncommon in Britain.

23. Leaf-ſtalks from two to ſeven inches long, waved, green. Leaf from an inch and half to three inches long. Leaflets of the barren leaves wedge-ſhaped and ſnipt at the edge; thoſe of the fertile leaves much narrower, linear or linear-lanceolate, and entire [x]. Fructifications in lines along the under margin of the leaflets, which is rolled back upon them, as in *Pteris aquilina*: after the diſcharge of the ſeeds increaſing in breadth ſo as to cover the whole diſk, except the midrib [y]. Capſules ſurrounded with an elaſtic ring: and therefore this Fern is not an Oſmunda [z].

Mr. Lightfoot remarks, that the outer barren leaves are ſmooth; the extreme pinnules of an obtuſe rhomboidal figure, plane, and toothed on the edges: the central fertile ones have the outer pinnules oval, convex, peduncled, their edges contracted, and the under ſides covered with yellow duſt-like fructifications.

Native of ſeveral parts of Europe, as Switzerland, Denmark, the South of France, Italy and Britain. With us in the county of Rutland; Cader Idris in Wales; Shap, near Kendall, &c. in the northern counties, on rocks, heaths and old walls, common. On rocks and ſtones upon the highland mountains of Scotland. The fructifications are ripe in ſeptember.

24. Stipe of the frond round, yellow, ſmooth. Frond bipinnate, with an odd leaflet. Pinnas oppoſite and alternate, oblique at the baſe, cordate, oblong, blunt, ſerrulate with a reflex margin, marked with lines, ſmooth, green above, pale beneath, an inch and half long. Fertile fronds diſtinct, bipinnate: pinnas oppoſite and alternate, linear-lanceolate. It differs from *O. regalis*, which it reſembles very much, in having the fertile fronds diſtinct.—Native of Japan, flowering in april and may.

25. This alſo has the fertile fronds diſtinct, with the flowering ſpikes ſuperdecompound ternate. Pinnas generally oppoſite, the upper ones quite ſo: pinnules alternate, ſeldom nearly oppoſite, lanceolate, very finely ſerrate, attenuated both ways, ſmooth, an inch or an inch and half long.—Native of Japan, flowering in april and may [a].

26, 27. Natives of New Zealand [b].

PROPAGATION AND CULTURE.

Oſmund Royal and the other European ſorts, except Moonwort, will grow in a moiſt ſhady ſituation in gardens: but will not thrive very well without bog earth. Moonwort muſt have a dry ſituation.

[b] Sloane. [l] Lightfoot and Withering. [m] Mr. Templeton.
[n] Hort. kew. [o] Linn. mant. [p] Hort. kew.
[q] Linn. ſuec. [r] Hort. kew. [s] Swartz.
[t] Weis. [u] Woodward. [v] Weis. [w] Hedwig.
[x] Withering. [y] Bolton. [z] Withering.
[a] Thunberg. [b] Forſter.

OSMUNDA. See *Blechnum, Onoclea, Pteris.*]

OSSIFRAGA. See *Euphorbia.*

OSTEOSPERMUM. (Οστεον σπερμα, *bony seed.*)

Lin. gen. n. 992. *Reich. n.* 1075. *Schreb. n.* 1341. *Gærtn. t.* 168. *Juss.* 183. Monilifera. *Vaill. mem. par.* 1720. *f.* 28. Chrysanthemoides. *Tournef. mem. par.* 1705. *f.* 4. *Dill. gen. 9. elth.* 68.

Class. 19. 4. Syngenesia Polygamia Necessaria.

Nat. order of *Compositæ Discoideæ. Corymbiferæ*, Juss.

GENERIC CHARACTER.

CAL. *Common* simple, hemispherical, many-leaved: *leaflets* awl-shaped, small.

COR. *Compound* rayed. *Corollets* hermaphrodite very many, in the disk. Females about ten in the ray.

Proper, of the hermaphrodite tubular, five-toothed, the length of the calyx:—of the female ligulate, linear, three-toothed, very long.

STAM. in the hermaphrodites, *Filaments* five, capillary, very short. *Anther* cylindrical, tubulous.

PIST. in the hermaphrodites, *Germ* very small. *Style* filiform, scarcely the length of the stamens. *Stigma* obsolete.—In the females, *Germ* globular. *Style* filiform, the length of the stamens. *Stigma* emarginate.

PER. none. *Calyx* unchanged.

SEEDS in the hermaphrodites none:—in the females solitary, subglobular, coloured, at length hardened, inclosing a kernel of the same shape. *Pappus* none.

REC. naked, flat.

ESSENTIAL CHARACTER.

Cal. simple or in two rows many-leaved, almost equal. *Seeds* globular, coloured, bony, (berried or nucamentaceous, *G.*) *Down* none. *Recept.* naked.

SPECIES.

1. Osteospermum spinosum. *Prickly Osteospermum.*
Lin. spec. 1308. *Syst.* 792. *Reich.* 3. 930. *hort. cliff.* 404. *mant.* 480. *Berg. cap.* 331.
Chrysanthemoides osteospermum africanum odoratum spinosum & viscosum. *Comm. hort.* 2. 85. *t.* 43.
Chrysanthemum africanum fruticosum spinosum. *Volk. norib. t.* 105. *Mor. hist.* 3. *s.* 6. *t.* 3. *f.* 56.
Spines branched.

2. Osteospermum pisiferum. *Smooth Osteospermum.*
Lin. spec. 1308. *Syst.* 792. *Reich.* 3. 930. *Mill. fig.* 129. *t.* 194. *f.* 1. *Berg. cap.* 330. *Burm. afr.* 171. *t.* 61. *f.* 2.
Leaves lanceolate mucronate subpetioled smooth serrate, branchlets angular-toothletted.

3. Osteospermum moniliferum. *Poplar-leaved Osteospermum.*
Lin. spec. 1308. *Reich.* 3. 931. *hort. cliff.* 423. *Berg. cap.* 331. *Gærtn. fruct.* 2. 424. *Dill. elth.* 80. *t.* 68. *f.* 79. (Chrysanthemoides). *Pluk. amalth. t.* 382. *f.* 4. *Breyn. cent.* 155. *t.* 76. (Chrysanthemum). *Vaill. act.* 1720. *p.* 573. (Monilifera).
Leaves obovate serrate petioled subdecurrent.

[4. Osteospermum ilicifolium. *Holm-leaved Osteospermum.*
Lin. spec. 1308. *Reich.* 3. 931. *Burm. zeyl.* 172. *t.* 62.
Leaves oblong tooth-angulate rugged half-embracing, branches grooved.

5. Osteospermum ciliatum. *Fringe-leaved Osteospermum.*
Lin. syst. 793. *Reich.* 3. 932. *Berg. cap.* 332. *Burm. afr.* 171. *t.* 61. *f.* 2.
Leaves elliptic-lanceolate crenate ciliate.

6. Osteospermum junceum. *Reedy Osteospermum.*
Lin. syst. 793. *Reich.* 3. 932. *mant.* 291. *Berg. cap.* 334.
Leaves linear acute keeled distant, panicle terminating.

7. Osteospermum triquetrum.
Lin. syst. 793. *Suppl.* 385.
Leaves linear three-sided.

8. Osteospermum corymbosum.
Lin. syst. 793. *Reich.* 3. 932. *mant.* 290.
Leaves lanceolate smooth, flowers panicled.

9. Osteospermum imbricatum.
Lin. syst. 793. *Reich.* 3. 932. *mant.* 290.
Leaves ovate blunt imbricate.

10. Osteospermum herbaceum.
Lin. syst. 793. *Suppl.* 385.
Leaves ovate subsessile spatulate serrate, stem herbaceous.

11. Osteospermum niveum.
Lin. syst. 793. *Suppl.* 386.
Leaves ovate petioled toothed woolly.

12. Osteospermum perfoliatum.
Lin. syst. 793. *Suppl.* 386.
Leaves ovate petioled angular-toothed tomentose underneath, petioles perfoliate-embracing.]

13. Osteospermum polygaloides.
Lin. spec. 1308. *Syst.* 793. *Reich.* 3. 933. *mant.* 480. *Berg. cap.* 333. *Pluk. mant.* 47. *t.* 382. (Chrysanthemum).
Monilifera polygalæ foliis. *Vaill. act.* 1720. *p.* 374.
Leaves lanceolate scattered decurrent smooth quite entire, axils woolly.

[14. Osteospermum calendulaceum.
Lin. syst. 793. *Suppl.* 386.
Leaves lanceolate setose toothed rugged, stem fleshy lax.

15. Osteospermum Arctotoides.
Lin. syst. 793. *Suppl.* 385.
Leaves lyrate petioled, petioles eared at the base half-embracing tomentose.

16. Osteospermum rigidum. *Rigid Osteospermum.*
Ait. hort. kew. 3. 275.
Leaves tooth-pinnatifid hairy, branches unarmed.

17. Osteospermum cæruleum. *Blue-flowered Osteosperm.*
Jacqu. collect. 1. 78. *Ait. hort. kew.* 3. 275.
O. pinnatifidum. *L'Herit. stirp. nov. p.* 11. *t.* 6.
Leaves pinnate, pinnas toothed.]

DESCRIPTIONS, &c.

1. This is a low shrubby plant, which seldom rises above three feet high, and divides into many branches; the ends of the shoots are beset with green branching spines; the leaves are very clammy, especially in warm weather; they are long and narrow, and set on without any order. The flowers are produced singly at the ends of the shoots; they are yellow, and appear in july and august.

[It is very nearly allied to the next species. The fruit hangs down on an oblong peduncle, and consists of dusky-purple, bony, globular berries disposed in a ring[a].

Native of the Cape of Good Hope. Cultivated in 1700 by Dr. Uvedale. It flowers from february to october[b].

2. The angles of the branches are toothletted by the back of the petioles running down, and are frequently wholly involved in wool, which disappears with age. Leaves wedge-form, crose. Peduncles scaly. Flowers small. Seeds obovate[c].]

Stem four or five feet high, dividing into many branches towards the top, which spread out flat on every side; they have a purplish bark. Leaves of a thick consistence and succulent, alternate, of a light green colour, from two to three inches long, and one inch broad in the middle. The flowers stand single upon long axillary peduncles, which have a few very small leaves growing alternately their whole length. Berry oval, at first green, then red, but when fully ripe of a dark-purple colour, having a thin pulp, which covers one hard seed[d]. The leaves are more pointed than in *O. moniliferum*, of a green colour, and acutely serrate; the petioles are bordered, and the leaves are deeply veined. It produces tufts of yellow flowers at the extremity of the shoots, from spring to autumn, and frequently ripens seeds. [It was cultivated in 1757, by Mr. Miller[e].

3. This rises with a shrubby stalk seven or eight feet high, covered with a smooth gray bark, and dividing into several branches. Leaves alternate, of a thick consistence, covered with a hoary down, which goes off from the older leaves, unequally indented on their edges. Flowers in clusters at the ends of the branches, six or eight coming out together on petioles an inch and half long; they are yellow, and shaped like those of Ragwort (Senecio Jacobæa) having about ten ligulate florets in the ray.

[Receptacle flat, in the elevated middle dotted, towards the circumference hollowed out in small pits for the reception of the fertile seeds, naked, smooth.

[a] Linn. mant. [b] Hort. kew. [c] Linn. spec. [d] Mill. fig. [e] Hort. kew.

Seeds ovate-globular, berried, dark-purple, ſmooth, bald; covered with three integuments, the outer fleſhy, thin, the middle cruſtaceous, thick, hard, the inner membranaceous, pale ruſſet: the fleſhy integument is wanting in moſt of the ſpecies, and thus the ſeed from being berried becomes nucamentaceous [s]. Linneus remarks, that the petioles have a knob under their baſe.]

This plant flowers but ſeldom in England. The time of its flowering is july or auguſt. [It was cultivated here in 1714 [t].

4. Leaves ſeſſile, almoſt embracing, angular with three teeth on each ſide, rolled in at the edge, mucronate at the angles, above rugged, beneath villoſe and almoſt woolly [l].

5. This is a woolly ſhrub, with oblong toothed or notched and ciliate leaves [k].

6. Stem five feet high, upright, ſtiff and ſtraight, even. Leaves awl-ſhaped or linear, ſtiff, even, ſeſſile, very remote. Peduncles one-flowered, thin, ſtiff, with awl-ſhaped remote leaflets ſcattered over them [l].

7. Stem ſuffruticoſe. Leaves even, a finger's length, abundant. Flowers from the uppermoſt axils, ſolitary, peduncled, yellow. Calyx like that of Geropogon, imbricated, with few, ſharp ſcaleets [m].

8. Stem upright, determinately branched, even, the thickneſs of a finger. Leaves alternate, ſeſſile, veinleſs, ſtiff, a finger's length, on the flowering branches ſmaller, rugged at the edge. Panicle terminating, corymboſe, with clammy-villoſe peduncles. Flowers yellow. Seeds berried, oblong, larger than grains of wheat [n].

9. Stem determinately branched, two feet high, ſcarred. Leaves cluſtered, ſeſſile, ovate or obovate, ſubimbricate, quite entire, even, embracing, clammy about the edge with very ſhort hairs, and the axils villoſe. Peduncle terminating, filiform, the length of the flower, one-flowered, pubeſcent, leafleſs. Calyx ſimple. Corolla yellow.

It differs from O. polygaloides, in not having the leaves lanceolate, or acute, or keeled; and the peduncles without a linear leaflet [o].

10. This reſembles a *Verbeſina*. Leaves exactly ſpatulate; the ſpatule ovate, acutely ſerrate.

11. The whole herb is covered with a thick and very white lanugo.

12. This is ſingular in having the petiole dilated at the inſertion, like a little wheel round the ſtem [p].]

13. Stalk about four feet high, dividing into many ſmall branches. Leaves ſmall, oblong, ſeſſile, on ſome of the upper branches imbricate. The flowers come out at the end of the branches, ſtanding ſingly on peduncles about an inch long.

[The ſtem between the leaves has frequently villoſe hairs on it like thoſe on the bag of the ſilk-worm. Leaves ſeſſile, erect, mucronate, keeled. Peduncles and calyxes muricated with very ſoft ſpines [q]. Cultivated by Mr. Miller, in 1759.

14. This reſembles *Calendula arvenſis* very much, and thence has its name; but it differs in the ſeeds not being winged, but cylindrical, bony and ſmooth.

15. In the ſurface, the figure of the herb, and leaves, and almoſt in the flower, this ſpecies reſembles an Arctotis, but in the ſmoothneſs of its ſeeds an Oſteoſpermum [r].

16. Introduced by Mr. Francis Maſſon in 1744. It flowers from april to july [t].

17. This is an underſhrub, three feet high, with a ſtrong ſmell. Root woody, branching, fibrous. Stem ſomewhat woody, erect, round, regularly branched, gray. Leaves alternate, ſpreading: ſegments alternate, (ſome almoſt oppoſite,) oblong, acute, ſerrate; the lower ſinuſes wider, deeper, parallel to the midrib; the upper ones rounded; they are without veins, and have only one nerve prominent beneath; they are of the ſame colour on both ſides, and fragrant, from an inch and half to two inches in length, and fifteen lines in breadth. Petioles half the length of the leaves, broadiſh, gibbous on one ſide, channelled on the other, widened at the baſe, with two teeth on each ſide, almoſt half embracing, ſcarcely pubeſcent. Flowers terminating, very looſely corymbed, peduncled, erect, blue, an inch wide. Peduncles from the upper leaflets, alternate, very long, from upright divaricated, one-flowered, ſomewhat rugged and viſcid; having one or two linear bractes on them. Calycine leaflets linear, acute, erect, almoſt equal. Female florets above twenty in the ray, ſcarce viſibly three-toothed, ſlightly two-grooved, ending in a filiform villoſe-glandular tube, twice as long as the hermaphrodites, which are longer than the calyx, with the tube narrowing at bottom like a pedicel and villoſe, the border ſharp, erect. Seeds obovate, ſomewhat angular and rugged, not at all bony [l].

Introduced by Mr. Francis Maſſon in 1774 [s].

All theſe ſhrubs are natives of the Cape of Good Hope.]

PROPAGATION AND CULTURE.

Theſe plants being too tender to live in the open air in England, are placed in the green-houſe in october, and may be treated in the ſame manner as Myrtles, and other hardy green-houſe plants, which require a large ſhare of air in mild weather; and in the beginning of may the plants may be removed into the open air, and placed in a ſheltered ſituation during the ſummer ſeaſon. The firſt and ſecond ſorts muſt have plenty of water, being very thirſty plants.

They are propagated by cuttings, which may be planted in any of the ſummer months, upon a bed of light earth, and ſhould be watered and ſhaded until they have taken root, which they will in five or ſix weeks, when they muſt be taken up and planted in pots; for if they are ſuffered to ſtand long, they will make ſtrong vigorous ſhoots, and will be difficult to tranſplant afterward, eſpecially the ſecond and third ſorts; but there is not ſo much danger of the firſt, which is not ſo vigorous, nor ſo eaſy in taking root as the other. During the ſummer ſeaſon the pots ſhould be frequently removed, to prevent the plants from rooting through the holes in the bottom of the pots into the ground, which they are very apt to do when they continue long undiſturbed, and then they ſhoot very luxuriantly; and, on their being removed, theſe ſhoots, and ſometimes the whole plants, will decay.

[OSTEOSPERMUM. See *Polymnia*.

OSTRUTHIUM. See *Imperatoria*.

OSTRYA. See *Carpinus*.

OSWEGO TEA. See *Monarda*.]

OSYRIS (*of Pliny*, Ὄσυρις *of Dioſcorides*; *q.* ὀζυρὶς, *branched*.)

Lin. gen. n. 1101. *Reich. n.* 1203. *Schreb. n.* 1497. *Juſſ.* 75. Caſia. *Tournef. t.* 488.

Claſſ. 22. 3. Dioecia Triandria.

Nat. order of *Calycifloræ*. *Eleagni*, Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* one-leafed, trifid, turbinate: *ſegments* equal, ovate, acute.

COR. none, except a triple nectariferous rim.

STAM. *Filaments* three, very ſhort. *Anthers* roundiſh, ſmall.

* *Female.*

CAL. *Perianth* as in the male, ſuperior, permanent, very ſmall.

COR. none, as in the male.

PIST. *Germ* turbinate, inferior. *Style* the length of the ſtamens. *Stigma* three-parted, ſpreading, (roundiſh, *Syſt.*)

PER. *Berry* globular, one-celled, umbilicated.

SEEDS bony, globular, filling the pericarp.

ESSENTIAL CHARACTER.

Cal. trifid. *Cor.* none.

FEM. *Stigma* roundiſh. *Drupe* one-celled. (*Berry* dry, umbilicated, *Scop.*)

[s] Gaertner. [t] Hort. kew. [l] Linn. ſpec. [k] Borm. [l] Linn. mant. [m] Linn. ſuppl. [n] Linn. mant. [o] Ibid. [p] Linn. ſuppl. [q] Linn. mant. [r] Linn. ſuppl. [t] Hort. kew. [l] L'Heritier. [s] Hort. kew.

SPECIES.

1. Osyris alba. *Poet's Cassia.*
Lin. spec. 1450. *syst.* 881. *Reich.* 4. 236. *Saiv. monsp.* 56. *Gouan monsp.* 502. *Gron. orient.* 308. *Scop. carn. n.* 1215. *Loefl. it.* 169. *Allion. pedem. n.* 2119.
O. fruteſcens bacciſera. *Bauh. pin.* 212.
Caſia poetica monſpelienſium. *Camer. epit.* 26. *Park. theat.* 452. *Lob. ic.* 432. *Ger.* 1110. *emac.* 1293. *Rati hiſt.* 1489. *Tournef. inſt.* 664.
C. lignea monſp. *Bauh. hiſt.*
C. latinorum. *Alp. exot.* 41.
C. monſpelii dicta. *Geſn. epit.* 50.
Leaves linear.

[2. Osyris japonica.
Lin. ſyſt. 881. *Thunb. jap.* 31.
Leaves ovate floriferous.]

DESCRIPTIONS, *&c.*

1. This is a very low ſhrub, ſeldom riſing above two feet high, having woody branches. Leaves long, narrow, of a bright colour. Flowers of a yellowiſh colour; ſucceeded by berries, which at firſt are green, and afterwards turn to a bright red colour, like thoſe of Aſparagus.

[According to Scopoli, it is from a foot to two feet in height. He obſerved rudiments of ſtyles and a germ in the male plant: and aſks why it has the epithet of *alba* or white, when the calyxes and almoſt the whole plant are yellow. He calls the fruit a dry umbilicated berry; and joins the *Hippophae* with it.

Linneus remarks, that the female ſhould rather be called an hermaphrodite, ſince it has ſtamens, although it is barren without the male.

Native of France, Spain, Italy, Carniola and mount Libanus. Cultivated in 1739, by Mr. Miller*.

2. Stem ſhrubby, tubercled, a fathom high. Branches alternate, bending, round, upright, ſmooth. Leaves alternate, frequent at the ends of the branches, acuminate, ſerrate with ſetaceous notches, nerved, paler underneath, ſmooth on both ſides, unequal, an inch long and more. Petioles one-third of the length of the leaves. Flowers from the midrib of the upper ſurface of the leaves in umbels, male and female on diſtinct ſhrubs. Umbels ſimple, with about eight flowers without an involucre. Peduncles capillary, unequal, ſmooth, a line in length. Perhaps it may form a new genus, but the female flowers being yet unknown, it cannot be ſettled ſatisfactorily. The leaves are ſaid to be eaten in Japan, where it is a native†.]

PROPAGATION AND CULTURE.

This plant grows by the ſide of roads, as alſo between rocks, is with great difficulty tranſplanted into gardens; nor does it thrive after being removed, ſo that the only method to obtain this plant is, to ſow the berries where they are to remain. Theſe berries commonly remain a year in the ground before the plants appear, and ſometimes they will lie two or three years, ſo that the ground ſhould not be diſturbed under three years, if the plants do not come up ſooner. Theſe ſeeds muſt be procured from the places where the plants naturally grow, for thoſe which have been brought into gardens never produce any, and it is with great difficulty they are preſerved alive.

[OSYRIS. See *Antirrhinum, Chenopodium, Chryſocoma, Hippophae, Nitraria.*

OTHERA.
Thunb. nov. gen. 56. *fl. jap.* 4. *Lin. gen. Schreb. n.* 201. *Juſſ.* 288.
Claſſ. 4. 1. Tetrandria Monogynia.
Nat. order of *Berberides*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, permanent, four-parted, with ovate ſegments.
COR. *Petals* four, ovate, blunt.
STAM. *Filaments* four, inſerted at the very bottom of the petals, ſhorter by half than the coroſla. *Anthers* twin, four-grooved.
PIST. *Germ* ſuperior, ſmooth. *Style* none. *Stigma* ſeſſile.
PER. *Capſule?*

* Hort. kew
† Thunberg.

ESSENTIAL CHARACTER.

Cal. four-parted. *Pet.* four, ovate, flat. *Stigma* ſeſſile. *Capſule?*

SPECIES.

1. Othera japonica.
Lin. ſyſt. 158. *Thunb. jap.* 61.

DESCRIPTION, *&c.*

Stem ſhrubby. Branches round, ſtriated, purple. Leaves alternate, ovate, blunt, entire, ſmooth, coriaceous, ſpreading, an inch and half long. Petioles ſemicylindric, ſmooth, a line in length. Flowers axillary, aggregate, peduncled. Peduncles half a line in length.—Native of Japan, where it is named *Mukade Ko*, that is *millepeda**.]

OTHONNA (*of Pliny.* Othonna *of Dioſcorides. From* ὄθονη *linteum. On account of the pubeſcence on the plant.*)
Lin. gen. n. 993. *Reich. n.* 1076. *Schreb. n.* 1342. *Gærtn. t.* 170. *Juſſ.* 181. Jacobæaſtrum. *Vaill. mem. par.* 1720. 15.
Claſſ. 19. 4. Syngeneſia Polygamia Neceſſaria.
Nat. order of *Compoſitæ Diſcoideæ. Corymbiferæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Common* quite ſimple, one-leafed, blunt at the baſe, ſharp at the end, equal, divided into eight or twelve ſegments.
COR. *Compound* rayed. *Corollets* hermaphrodite many, in the diſk. *Females* in the ray, the ſame number with the ſegments of the calyx, often eight: (about ten, *G.*)
Proper of the hermaphrodite tubular, five-toothed, ſcarcely longer than the calyx: of the *female* ligulate, lanceolate, longer than the calyx, three-toothed, reflex.
STAM. in the hermaphrodites, *Filaments* five, capillary, very ſhort. *Anther* cylindric, tubular, the length of the corollet.
PIST. in the hermaphrodites, *Germ* oblong. *Style* filiform, commonly longer than the ſtamens. *Stigma* bifid, ſimple: in the *females*, *Germ* oblong. *Style* filiform, the ſame length as in the others. *Stigma* reflex, larger.
PER. none. *Calyx* unchanged, permanent.
SEEDS in the hermaphrodites none: in the females ſolitary, oblong, naked or downy.
REC. naked, dotted: (ſomewhat villoſe in the middle, excavated about the edge, *G.*)
OBS. *In ſome ſpecies the ſeeds are crowned with a down; in ſome the calyx is divided beyond the middle, in others only toothed; but the figure is the ſame in all.*

ESSENTIAL CHARACTER.

Cal. one-leafed, multifid, ſubcylindrical. *Down* almoſt none: (capillary, *G.*) *Recept.* naked.

SPECIES.

[1. Othonna Cacalioides. *Tuberous Othonna* or *African Ragwort.*
Lin. ſyſt. 794. *ſuppl*, 388. *Ait. hort. kew.* 3. 276.
Tuber denudated finger-lobed plant-bearing, ſcapes one-flowered, leaves obovate toothletted.]
2. Othonna bulboſa. *Bulbous African Ragwort.*
Lin. ſpec. 1309. *Reich.* 3. 933.
Jacobææ affinis planta tuberoſa Capitis Bonæ Spei. *Breyn. cent.* 1. *t.* 66. *Mor. hiſt.* 3. 111. *ſ.* 7. *t.* 18. *f.* 33.
β. O. dentata, foliis ovato-cuneiformibus dentatis. *Lin. ſpec.* 1. 926. *Burm. afr.* 164. *t.* 59. (Solidago).
Leaves oblong naked petioled, ſtem herbaceous, peduncles one-flowered very long.
[3. Othonna denticulata. *Dentated African Ragwort.*
Ait. hort. kew. 3. 276.
Leaves oblong toothletted ſmooth attenuated at the baſe embracing, flowers panicled.
4. Othonna Tagetes.
Lin. ſpec. 1309. *ſyſt.* 793. *Reich.* 3. 934. *Murr. in comm. gott.* 1780. *p.* 17. *t.* 5.
Tagetes minimus tenuiter diviſo folio. *Breyn. prodr.* 2. 99.

* Thunberg.

Chryſanthemum africanum pumilum ramoſum, foliis tenuiſſimis. *Raii ſuppl.* 212.
Leaves linear pinnate ſomewhat toothed.

5. Othonna trifida.
Lin. ſyſt. 793. *ſuppl.* 387.
Leaves trifid linear, flowers lateral peduncled.]

6. Othonna pectinata. *Wormwood-leaved African Ragwort.*
Lin. ſpec. 1309. *ſyſt.* 793. *Reich.* 3. 934. *hort. cliff.* 419. *Mill. fig. t.* 194. *f.* 2. *Curt. magaz.* 306.
Jacobæa africana fruteſcens, foliis abſinthii umbelliferi, incanis. *Comm. hort.* 2. 137. *t.* 69. *Raii ſuppl.* 175.
β. J. abſinthites, &c. *Pluk. alm.* 106.
Leaves pinnatifid, ſegments linear parallel.

7. Othonna abrotaniſolia. *Southernwood-leaved African Ragwort.*
Lin. ſpec. 1310. *ſyſt.* 793. *Reich.* 3. 935.
Cineraria abrotaniſolia. *Berg. cap.* 292.
Aſteroplatycarpos africana fruteſcens, crithmi marini foliis. *Comm. hort.* 2. *p.* 63. *t.* 32.
Jacobæa africana fruticans, foliis abrotani ſ. crithmi, major & minor. *Volk. norib.* 225. *t.* 225. *Raii ſuppl.* 179. *Pluk. phyt. t.* 323. *f.* 2. *Seba muſ.* 2. *t.* 23. *f.* 6.
Leaves multifid pinnate linear, the joints of the ſtem villoſe.

[8. Othonna Athanaſiæ.
Lin. ſyſt. 794. *ſuppl.* 386.
Leaves pinnate filiform, calyx hemiſpherical twelve-toothed.

9. Othonna ciliata.
Lin. ſyſt. 794. *ſuppl.* 386.
Leaves pinnatifid ſeſſile, pinnas ovate ciliate, peduncles terminating elongated one-flowered.

10. Othonna pinnata.
Lin. ſyſt. 794. *ſuppl.* 387.
O. bulboſa β. *Lin. ſpec. ed.* 2. 1309.
Leaves pinnatifid, pinnas lanceolate quite entire decurrent.

11. Othonna trifurcata.
Lin. ſyſt. 794. *ſuppl.* 387.
Leaves trifid-pinnatifid, pinnas linear, peduncles lateral faſtigiate.

12. Othonna munita.
Lin. ſyſt. 794. *ſuppl.* 388.
Leaves pinnatifid imbricated curved inwards, pinnas three-ſided awl-ſhaped, ſtem dichotomous, peduncles from the divarications.]

13. Othonna coronopiſolia. *Buckſhorn-leaved African Ragwort.*
Lin. ſpec. 1310. *Reich.* 3. 935. *hort. cliff.* 419. *Gærtn. fruct.* 2. 452.
Jacobæa africana fruteſcens coronopi folio. *Comm. hort.* 2. 139. *t.* 70. *Raii ſuppl.* 175.
Lower leaves lanceolate quite entire, upper ſinuate-toothed.

14. Othonna cheirifolia. *Stock-leaved African Ragwort.*
Lin. ſpec. 1310. *ſyſt.* 794. *Reich.* 3. 935. *Duham. arb.* 2. 94. *t.* 17. *Gouan monſp.* 464. *Mill. fig.* 163. *t.* 245. *f.* 1. *Kniph. cent.* 6. *n.* 67.
O. calthoides. *Mill. dict. n.* 2.
Aſter fruticoſus africanus luteus, foliis thymeleæ. *Raii ſuppl.* 167.
Leaves lanceolate three-nerved quite entire, ſtem ſuffruticoſe creeping.

[15. Othonna craſſifolia. *Thick-leaved African Ragwort.*
Lin. ſyſt. 794. *Reich.* 3. 935. *mant.* 118. *hort. cliff.* 419. *Mill. fig.* 163. *t.* 245. *f.* 2.
Jacobæa africana fruteſcens, craſſis & ſucculentis foliis. *Comm. hort.* 2. 147. *t.* 74. *Raii ſuppl.* 174.
Leaves lanceolate quite entire ſomewhat fleſhy, ſtem upright.

16. Othonna parviflora. *Small-flowered African Ragwort.*
Lin. ſyſt. 794. *Reich.* 3. 936. *mant.* 289. *Berg. cap.* 335.
Senecio rigens. *Lin. ſpec.* 1224.
Jacobæa africana fruteſcens, folio longiore glauco. *Comm. hort.* 2. 143. *t.* 72.
J. afr. perennis, integro oblongo folio glauco. *Volk. norib. t.* 226. *Raii ſuppl.* 179.
J. ramoſa, folio rigido glauco per limbum aſpero. *Raii ſuppl.* 176. *n.* 35.
Leaves lanceolate glaucous embracing, flowers panicled.

17. Othonna tenuiſſima. *Fine-leaved African Ragwort.*
Lin. ſyſt. 794. *Reich.* 3. 936. *mant.* 118. *Pluk. phyt. t.* 319. *f.* 5.]
Craſſula fruticoſa. *Mill. dict. n.* 8.
[*Leaves filiform fleſhy, ſtem ſhrubby.*

18. Othonna linifolia. *Flax-leaved African Ragwort.*
Lin. ſyſt. 794. *ſuppl.* 388.
O. bulboſa γ. *Lin. ſpec.* 1309.
Herbaceous, leaves linear margined graſſy.

19. Othonna digitata. *Digitate-leaved African Ragwort.*
Lin. ſyſt. 794. *ſuppl.* 386.
Leaves oblong undivided or digitate-toothed, peduncles one-flowered.

20. Othonna Lingua.
Lin. ſyſt. 794. *ſuppl.* 387.
Leaves ovate-lanceolate half embracing.

21. Othonna lateriflora. *Side-flowering African Ragwort.*
Lin. ſyſt. 794. *ſuppl.* 387.
Leaves lanceolate, flowers lateral, peduncles the length of the leaves.

22. Othonna heterophylla.
Lin. ſyſt. 794. *ſuppl.* 387.
Root-leaves ovate angular-toothed, ſtem-leaves lanceolate almoſt entire.

23. Othonna Ericoides. *Heath-like African Ragwort.*
Lin. ſyſt. 795. *ſuppl.* 388.
Stem dichotomous imbricated, leaflets acerоſe, peduncle very long ſolitary from the divarications.

24. Othonna capillaris. *Capillary-branched African Ragwort.*
Lin. ſyſt. 795. *ſuppl.* 388.
Leaves lyrate, branches capillary.

25. Othonna virginea.
Lin. ſyſt. 795. *ſuppl.* 389.
Leaves wedge gaſhed.

26. Othonna fruteſcens. *Shrubby African Ragwort.*
Lin. ſyſt. 795. *Reich.* 3. 936. *mant.* 288.]
Cineraria othonnites. *Lin. ſpec.* 1244. *Mill. dict. n.* 4.
[Jacobæa africana fruteſcens craſſis & ſucculentis foliis. *Comm. hort.* 2. 147. *t.* 76. *Raii ſuppl.* 174.
Leaves oval ſomewhat toothed, ſtem fruteſcent.

27. Othonna arboreſcens. *Tree African Ragwort.*
Lin. ſpec. 1310. *Reich.* 3. 957.
Doria africana arboreſcens, floribus ſingularibus. *Dill. elth.* 123. *t.* 103. *f.* 123.
Leaves oblong quite entire, ſtem arboreſcent fleſhy, with woolly ſcars.

DESCRIPTIONS, &c.

1. This is very diſtinct by its ſmooth fleſhy ſtalk like the Cacalias, and the flower of Othonna. The ſcars of the leaves are round and tomentoſe [a]. Introduced in 1774, by Mr. Francis Maſſon. It flowers from may to november [b].]

2. This has a thick ſhrubby ſtalk, dividing into ſeveral branches which riſe five or ſix feet high; the leaves come out in cluſters from one point, ſpread on every ſide; they are ſmooth, narrow at their baſe, enlarging gradually to their points, which are rounded their edges are acutely indented like thoſe of the Holly. From the center of the leaves ariſe the foot-ſtalks of the flowers, which are five or ſix inches long, branching out into ſeveral ſmaller, each ſuſtaining one yellow radiated flower, ſhaped like the former; theſe are ſucceeded by ſlender ſeeds crowned with down.

[The floral leaves at the peduncles are often oppoſite. Peduncles frequently in pairs. Calyxes five-parted. It is one of the moſt variable plants we have:—being herbaceous, 1. with ovate, quite entire leaves. 2. With the root-leaves pinnate, quite entire. 3. With the leaves linear, very narrow. 4. With the leaves lanceolate, quite entire. 5. With the leaves lanceolate, toothed. 6. With the leaves lanceolate-ſubelliptic. 7. With the leaves ſublanceolate, three-toothed.—Or ſhrubby: 8. With the leaves of the top lanceolate, ſubſeſſile. 9. With the leaves alternate, lanceolate, toothed [c].

Introduced in 1774, by Maſſon. It flowers in may and june [d].

[a] Linn. mant. [b] Hort. kew. [c] Linn. ſpec. [d] Hort. kew.

3. Intro-

3. Introduced in 1774, by Maſſon. It flowers from april to july [a].

4. Root annual. Stem filiform, flexuoſe. Calyx pitcher-ſhaped, with about fourteen teeth at the edge. Ray many-flowered [b].

5. Stem ſhrubby, proliferous, ſpreading, duſky. Leaves ſcattered, ſemitrifid, ſomewhat fleſhy, with a white wool in the axils of the leaves. Peduncles axillary, ſolitary, one-flowered, much longer than the leaves. Calyxes deeply divided. Seeds white with wool [c].]

6. This riſes with a ſhrubby ſtalk about the thickneſs of a man's thumb, two or three feet high, dividing into many branches, covered with a hoary down. Leaves hoary, about three inches long and one broad, cut into many narrow ſegments almoſt to the midrib; theſe ſegments are equal and parallel, and have two or three teeth at the end. The flowers are produced on long axillary peduncles towards the ends of the branches; they have large yellow rays; and are ſucceeded by oblong purple ſeeds crowned with down.

[Linneus remarks that the whole plant is often tomentoſe. Stem ſcarred.

It flowers in may and june, and was cultivated in 1731, by Mr. Miller [d]: who ſays that] the ſeeds were ſent to Holland from the Cape, and plants raiſed from them, in the Amſterdam garden, in 1699.

7. This has a low, ſhrubby, branching ſtalk. The leaves are thick, like thoſe of Sampire, and are cut into many narrow ſegments. The flowers are produced on ſhort peduncles at the ends of the branches; they are yellow, and the ſeeds are brown.

[Cultivated in 1759, by Mr. Miller. It flowers from january to march [e].

8. Stem ſhrubby, like that of Athanaſia, proliferous, even. Leaves alternate, remote, three-paired with an odd leaflet, naked. Flower rather large, terminating, from the dichotomy; on a one-flowered peduncle, twice as long as the leaves and round. Calyx even. Corolla yellow, both in the ray and diſk; the former twice as long as the calyx. Seeds downy.

9, 10, 11. Found at the Cape by Thunberg.

12. This reſembles O. Ericoides very much, and differs only in having pinnatifid leaves [f].]

13. This riſes with a ſhrubby ſtalk four or five feet high, dividing into ſeveral branches. Leaves grayiſh, placed without order; thoſe on the lower part narrow and entire, but the others indented on the edges after the manner of Hart's-horn. The flowers are produced in looſe umbels at the ends of the branches, and are yellow.

[Receptacle narrow, ſomewhat convex, with hollows or cells in the middle; the edges of the cells are ſet with very ſhort, briſtly-ciliate hairs, giving the receptacle the appearance of being villoſe; next the edge are ſix or eight wider cells, receiving the germs of the female flowers. The ſeeds, which are the produce of theſe germs are largiſh, obovate, ſomewhat beaked at the baſe, ſtriated, with a ſilky hoarineſs. Down very abundant, capillary, white-ſilky, three times as long as the ſeed [g].

Cultivated in 1731 by Mr. Miller. It flowers from july to ſeptember [h].]

14. This has a ſtrong fibrous root, which ſhoots deep in the ground, and ſends out many woody ſtems, which ſpread on every ſide, and trail upon the ground. Leaves grayiſh, ſeſſile, and of a thick conſiſtence, narrow at the baſe, enlarging upwards, and broad at their points, where they are rounded. The flowers are produced upon long thick ſucculent peduncles at the ends of the branches, and from the axils; they are yellow, the rays ſharp pointed, and not much longer than the calyx, which is cut into eight equal ſegments at top; the diſk is large, and the florets as long as the calyx. The ſeeds are crowned with long down.

It was diſcovered by Dr. Shaw growing naturally near Tunis in Africa. [Mr. Miller cultivated it in 1758; and it flowers from april to june [i].

15. This has round ſtalks, which at firſt are herbaceous and ſucculent, but by age become woody: they riſe three or four feet high, and divide into many branches from the bottom. Leaves thick and ſucculent, about two inches long, and one broad in the middle, of a gray colour, placed without order, and ſeſſile. The flowers are produced towards the end of the branches upon ſucculent peduncles about four inches long, each ſuſtaining one yellow flower, ſmaller than the preceding. It begins to flower in auguſt, and there is a ſucceſſion of flowers till the middle of winter [k].—Cultivated by Mr. Miller in 1758.

Linneus remarks that this ſpecies reſembles *O. cheirifolia*, but is upright and four feet high.

16. Stem ſhrubby, two feet high, even. Leaves alternate, petioled, broad-lanceolate; the upper ones deltoid, with one tooth on each ſide, ſmooth. Peduncles very long, even, ſtiff and ſtraight; with a few, very ſmall, very remote, lanceolate leaves, having one tooth on each ſide. Panicle ſmall, with little, yellow flowers, and a ſimple, even, eight-cleft calyx [l].

17. Stem from a foot to two feet high and more, even. Leaves alternate, even, ſpreading, declining a little, narrower at the baſe [m]. It did not flower with Linneus, though he cultivated it for a long time, but from the villoſe hairs at the baſe of the leaves, as in *O. fruticoſa*, he placed it in this genus, till greater certainty could be obtained.

Mr. Miller had made it a *Craſſula*, and ſays that it] riſes with a ſhrubby ſtalk, four or five feet high, dividing into many branches, which at firſt are taper and ſucculent, but by age become woody. The leaves are very ſlender, taper, ſucculent, flaccid, generally turning downward, eſpecially in winter, near three inches in length. It did not flower with him. It was ſent him from Leyden by Adrian van Royen. [According to the Kew catalogue it flowers in july; and was introduced in 1774, by Mr. Francis Maſſon.

18. Stem a ſpan high, filiform, even, with one or two one-flowered branches. Root-leaves linear, filiform, almoſt the length of the ſtem, woolly at the baſe: ſtem-leaves only three or four, ſimilar. Flowers terminating, ſolitary, the ſize of peas, yellow. Calyx commonly eight-leaved.

19. Root bulbous. It greatly reſembles *O. ciliata*, n. 9.

20. Root bulbous.

21. This is an upright ſhrub, with the ſtem the ſize of a ſwan's quill. Leaves ſcattered, ſeſſile, quite entire, ſmooth. Peduncles lateral, ſolitary, one-flowered. Flower roundiſh. Calyx commonly eight-cleft. Corolla yellow. The peduncles and receptacles of the preceding year remain dried up on the ſtem.

22. Root bulbous.

23. This is an upright ſhrub, reſembling Heath, commonly dichotomous. Leaves like thoſe of Heath, ſcattered, ſomewhat cluſtered, awl-ſhaped, ſhort, diſtant at the ſide, curved inwards, even. Peduncles axillary, ſtraight, even, one-flowered. Flower roundiſh, not large.

24. Root fibrous, very ſlender. Root-leaves, and one or two ſtem-leaves lyrate, an inch long, even. Stems upright, a palm high, filiform, with the branches finally ſetaceous and capillaceous, even. Flowers terminating, the ſize of Hemp ſeed, yellow. Calyx five-leaved, ovate, acute.

25. Stem ſhrubby, compound, erect, round. The young ſhoots quite ſimple; thoſe of the preſent and former year leafy. Leaves ſcattered in cluſters, ſmall in proportion to the plant, ſeſſile, almoſt erect, flat, even, with five or ſeven erect teeth; the lower ones ſhorter. Flowers from the upper part of the internodes, lateral, ſcattered, ſolitary, ſmall, like thoſe of Cotula. Peduncles one-flowered, longer than the leaf. Calyx ſeven-leaved, ſimple, acute, permanent. Ray ſmall, yellow, ſertile, with a bifid ſtyle. Diſk yellow, convex. Down ſimple, ſeſſile [n].

26. This is allied to the next ſpecies. Stem of the firſt year a foot high, upright, ſimple, round, even,

[a] Hort. kew. [b] Linn. ſpec. [c] Linn. ſuppl. [d] Hort. kew. [e] Idem. [f] Linn. ſuppl. [g] Gærtner. [h] Hort. kew. [i] Idem. [k] Miller's figures. [l] Linn. mant. [m] Idem. [n] Linn. ſuppl.

ſmooth. Leaves alternate, ſubpetioled, obovate, (the upper ones lanceolate, veinleſs, oleraceous, glaucous-green, like thoſe of Cabbage, with a minute point; the lower ones quite entire; the middle ones with two teeth at the baſe; the upper ones toothed at the ſides; all ſomewhat decurrent at the back. From each axil leaflets rudiments of branches. Peduncles from the top of the ſtem, a palm in length, one-flowered, alternate, few, filiform, erect, with a few minute leaflets. Calyx cylindric, blunt, equal, eight-cleft. Ray eight-petalled, yellow, lanceolate, three-toothed or thereabouts, twice as long as the calyx. Stigmas two, lanceolate, ſhort. Diſk yellow. Seeds of the ray very ſhort; with an abundant capillary down, the length of the calyx.

It differs from *O. arboreſcens* in having remote, toothed leaves, not cluſtered and quite entire, as in that; the ſtem without any hairy ſcars of the leaves; the ray eight-petalled not five-petalled; the ſtem round with ſmooth branches; the peduncles ſomewhat branched [a].

27. Height (at five years of age) one foot, with a ſtem the thickneſs of a human finger, reſembling *Sedum arboreſcens*, and like that fleſhy and woody, though never ſo tall or thick, pliant, covered with a browniſh aſh-coloured bark, not rough but rather ſmooth, and having white woolly tubercles ſcattered over it, which is peculiar to this ſpecies: the branches alſo have them, and are obliquely curved inwards: the ends of the branches and baſes of the leaves have a fine wool on them, not conglobated but ſcattered. The branches are otherwiſe naked, ſomewhat woody, covered with a bark like that of the ſtem, browniſh green towards the end, more tender and herbaceous; theſe leaves come out alternately at ſhort diſtances; they are oblong, wider towards the top and blunt, contracted towards the baſe, green on both ſides, ſomewhat glittering and as it were mealy, like thoſe of Auricula, flat, thickiſh, ſucculent and ſmooth, veinleſs, with only a white nerve protuberant underneath, and on the upper part a little hollowed next the baſe.

Among theſe leaves ſpring the peduncles, ſolitary or in pairs, round, tender, of a pale glaucous colour, having a woolly ſcale or jag near the middle, terminated each by a ſingle flower. Calyx oblong, with five roundiſh angles, five-cleft to the middle, glaucous-green, thick and ſucculent. Corolla yellow; with five florets in the ray, oblong and rather wide, ſituated at the end, ſlightly crenate in the middle, rolled back ſoon after they open: theſe are ſucceeded by thickiſh, ſhort, oblong-round ſeeds, at firſt whitiſh, but when ripe browniſh, crowned by a copious ſhort browniſh down: the ſeeds in the diſk are longer, ſlender, round and barren with a more ſlender whitiſh down.

This plant makes very ſlow progreſs here. In auguſt it puts out young leaves, which it keeps all the winter; the heads of flowers appear about the end of november, and do not open till the middle or end of january: in ſpring the leaves gradually drop off, and the plant appears as if dead till the ſucceeding autumn. Cultivated in Sherard's garden at Eltham in 1723 [a].

All the ſpecies, except the fourteenth, are natives of the Cape of Good Hope.]

PROPAGATION AND CULTURE.

Theſe plants are preſerved in the dry ſtove, or even in the green-houſe, without any artificial warmth: it is ſufficient to protect them well from froſt; and in mild weather they muſt have a large portion of air. In ſummer place them in a ſheltered ſituation.

They may be increaſed during the ſummer months by cuttings, planted upon an old hot-bed, and covered with glaſſes, ſhading them from the ſun in the heat of the day. When they have taken root, plant each into a ſeparate pot filled with ſoft loamy earth, and place them in the ſhade till they have taken new root; then remove them to a ſheltered ſituation, where they may remain till autumn; treating them in the ſame way as the old plants.

14. The fourteenth will live in the open air, in a warm ſituation and a dry ſoil.

[a] Linn. mant. [a] Dill. elth.

[OTHONNA. See *Cineraria*.

OTITES. See *Cucubalus* and *Polypodium*.

OTTEL-AMBEL. See *Stratiotes*.

OVA PISCIUM. See *Coix*.

OVIEDA. (*So named by Linneus, in honour of Gonſalvo Fernandez d'Oviedo, or de Valde, a Spaniard, who publiſhed* Hiſtoria de las Indias, 1535.)

Lin. gen. n. 787. *Reich. n.* 850. *Schreb. n.* 1054. *Gærtn. t.* 57. *Juſſ.* 211. Valdia. *Plum.* 24.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ. Caprifolia*, Juſſ. (*Viticibus* contermina.)

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-cleft, bell-ſhaped, acute, erect, broadiſh, ſhort, permanent.

COR. one-petalled, ringent: (funnel-form, trifid, *G.*) *Tube* very long, narrow, ſubcylindric. *Border* ſhort, three-lobed, almoſt equal.

STAM. *Filaments* four, longer than the corolla. *Anthers* roundiſh.

PIST. *Germ* inferior, globular. *Style* filiform, the length of the ſtamens. *Stigma* bifid, acute.

PER. *Berry* globular, one-celled, quadripartile placed upon the calyx enlarged, bell-ſhaped, erect.

SEEDS four, gibbous on one ſide, angular on the other, one-celled, *G.*

ESSENTIAL CHARACTER.

Cal. five-cleft. *Cor.* tube ſubcylindric, ſuperior, very long: (border three-lobed or three-cleft.) *Berry* globular, one-celled, quadripartile, four-ſeeded.

SPECIES.

1. Ovieda ſpinoſa.
Lin. ſpec. 888. *Reich.* 3. 196. *Swartz obſ.* 248. Valdia cardui folio, fructu ſubcæruleo. *Plum. gen.* 14. *ic.* 256.
Leaves oval toothed.
2. Ovieda mitis.
Lin. ſpec. 889. *ſyſt.* 577. *Reich.* 3. 196. *Gærtn. fruct.* 1. 272. *Burm. ind.* 136. *t.* 43. *f.* 1, 2.
Leaves lanceolate ſubrepand.

DESCRIPTIONS, *&c.*

1. A ſhrub. Leaves oppoſite, petioled, oblong, toothed [a]; the teeth terminated by ſpines, rigid. Flowers terminating, corymbed, ſubſeſſile among the terminating leaves. Berries black.

Native of South America; in the mountains of Hiſpaniola. The fruit is ripe in may [a].

2. This alſo is a ſhrub. Leaves oppoſite, petioled, ſmooth, very long. Corymbs dichotomous. Tube of the corolla very long [a]. Berry ſucculent, covered by the acutely triangular ſegments of the calyx, ſubglobular, one-celled, having four ſtones, when ripe drying up and diviſible into four parts. Cuticle when ripe ſomewhat ſpongy, wrinkled, faſtened to the back of the ſtones; which are regularly four, but two only commonly ripen, coriaceous-cruſtaceous, gibbous on one ſide, wrinkled, concave or angular on the other, one-celled. There is one ſeed in each ſtone, of the ſame ſhape with it, faſtened to its baſe, ruſeſcent [a].

Gærtner remarks, that the *Valdia* of Plumier is of a quite different genus, if the generic character be right which Adanſon attributes to it, in *Familles des plantes*, 2. 157.

OXALIDI AFFINIS. See *Oxalis*.]

OXALIS (*of Pliny*, ὀξαλὶς *of Dioſcorides. From* ὀξὺς, *acid.*)

Lin. gen. n. 582. *Reich. n.* 634. *Schreb. n.* 794. & *p.* 831. *Gærtn. t.* 113. *Juſſ.* 270. Oxys. *Tourn. t.* 13. Oxyoides. *Garc. in phiſ. tranſ.* 1730. *n.* 415. *t.* 2.

Claſſ. 10. 5. Decandria Pentagynia.

Nat. order of *Gruinales. Gerania*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, acute, very ſhort, permanent.

COR. five-parted, often cohering by the claws, erect, obtuſe, emarginate: border ſpreading.

STAM. *Filaments* ten, capillary, (awl-ſhaped, *Jacqu.*) erect; the outer ones ſhorter. *Anthers* roundiſh, grooved.

[a] Linn. ſpec. [a] Swartz obſ. [a] Gærtner.

PIST. *Germ* five-cornered, superior. *Styles* five, filiform, the length of the ſtamens. *Stigmas* blunt.

PER. *Capſule* five-cornered, five-celled, ten-valved, (five-valved, *Jacqu.*) gaping at the corners longitudinally.

SEEDS roundiſh, flying out-covered with a fleſhy elaſtic aril. *G.*

OBS. *Capſule in ſome ſhort, with ſolitary ſeeds: in others long, with many ſeeds: the filaments of moſt coaleſce at the baſe.*

ESSENTIAL CHARACTER.

Cal. five-parted. *Pet.* five, often connected at the baſe. *Capſ.* five-celled, five-cornered, opening at the corners. *Seeds* arilled.

SPECIES.

I. *With many-flowered peduncles.*

* *Caulescent.*

[1. Oxalis pentantha.
Jacqu. monogr. 21. *t.* 1.
Stem upright, leaflets obovate, ſtyles very ſhort.

2. Oxalis rhombifolia. *Rhomb-leaved Wood Sorrel.*
Jacqu. monogr. 22. *t.* 2.
Stem upright, leaflets rhombed, ſtyles very long.]

3. Oxalis Plumieri.
Jacqu. monogr. 23.
O. fruteſcens. *Lin. ſpec.* 624. *ſyſt.* 434. *Reich.* 2. 393. *Thunb. diſſ. p.* 7. *Mill. dict. n.* 7.
Oxys lutea fruteſcens, trifolii bituminoſi facie. *Plum. ſpec.* 2. *ic.* 213. *f.* 1.
Stem upright, leaflets oblong, peduncles umbelled.

4. Oxalis Barrelieri.
Jacqu. monogr. 24. *t.* 3. *Lin. ſpec.* 624. *ſyſt.* 434. *Reich.* 2. 393. *Thunb. diſſ. n.* 23. *Mill. dict. n.* 8.
Trifolium acetoſum americanum, rubro flore. *Bocc. muſ.* 2. 63. *t.* 51.
Stem upright, leaflets oblong, peduncles biſid racemed, ſtyles equal.

[5. Oxalis roſea. *Roſe-flowered Wood Sorrel.*
Jacqu. monogr. 25.
Oxys roſeo flore, erectior. *Feuill. peruv.* 2. 733. *t.* 23.
Stem upright, leaflets obcordate, peduncles divided racemed.

6. Oxalis conorrhiza. *Conic-rooted Wood Sorrel.*
Jacqu. monogr. 26.
Oxys ampliſſimo flore luteo. *Feuill. peruv.* 2. 733. *t.* 24.
Stem upright, leaflets obcordate, peduncles ſubbiflorous.

7. Oxalis crenata. *Notch-petalled Wood Sorrel.*
Jacqu. monogr. 27.
Oxys lutea annua, floribus dentatis. *Feuill. peruv.* 3. 49. *t.* 24.
Stem upright, leaflets obcordate, peduncles umbelliferous, petals crenate.

8. Oxalis Dillenii.
Jacqu. monogr. 28.
O. corniculata β. *Lin. ſpec.* 623. *Reich.* 2. 393.
Oxys lutea americana humilior & annua. *Dill. elth.* 299. *t.* 221. *f.* 288.
Stem upright, leaflets obcordate, peduncles ſubumbelliferous, petals emarginate.]

9. Oxalis ſtricta. *Upright Wood Sorrel.*
Lin. ſpec. 624. *ſyſt.* 434. *Reich.* 2. 393. *Jacqu. monogr.* 29. *Thunb. diſſ. n.* 21. *Gron. virg.* 161. *Brown. jam.* 231. 1. *Swartz obſ.* 186. *Mill. dict. n.* 3. *Fl. dan. t.* 873.
O. ambigua. *Saliſb. in Lin. tranſ.* 2. 242. *t.* 23. *f.* 4.
Oxys americana elatior. *Tournef. inſt.* 88. *Dill. elth. t.* 221. *f.* 4.
Trifolium acetoſum corniculatum luteum majus rectum indicum ſ. virginicum. *Mor. hiſt.* 2. 184. *ſ.* 2. *t.* 17. *f.* 3.
Stem upright, leaflets obcordate, peduncles umbelliferous, petals quite entire.

10. Oxalis corniculata. *Yellow Wood Sorrel.*
Lin. ſpec. 623. *ſyſt.* 474. *Reich.* 2. 392. *hort. cliff.* 113. *upſ.* 116. *Jacqu. monogr.* 30. *t.* 5. *Thunb. diſſ. n.* 20. *Mill. dict. n.* 2. *Wither. arr.* 430.
O. puſilla. *Saliſb. in Lin. tranſ.* 2. 243. *t.* 23. *f.* 5.
Oxys flavo flore. *Clus. hiſt.* 2. 249.
Trifolium acetoſum corniculatum. *Bauh. pin.* 330.
T. luteum minus repens, etiam procumbens. *Mor. hiſt.* 2. 153. *ſ.* 2. *t.* 17. *f.* 2.
Stem proſtrate rooting, peduncles two-flowered, ſtyles almoſt equal.

11. Oxalis repens. *Creeping Wood Sorrel.*
Lin. ſyſt. 433. *Jacqu. monogr.* 32. *t.* 78. *f.* 1. *Thunb. diſſ. n.* 14. *t.* 1.
Stem proſtrate rooting, peduncles ſubbiflorous, ſtyles nearly middling.

** *Stipitated.*

12. Oxalis megalorrhiza. *Great-rooted Wood Sorrel.*
Jacqu. monogr. 33.
Oxys luteo flore, radice craſſiſſima. *Feuill. peruv.* 2. 734. *t.* 25.
Leaves ternate, root many-ſtumped.

13. Oxalis ſericea. *Silky Wood Sorrel.*
Lin. ſyſt. 433. *Jacqu. monogr.* 34. *t.* 77. *f.* 1. *Thunb. diſſ. n.* 13. *prodr. cap.* 82.
Leaves ternate tomentoſe, ſtyles of middling length.

14. Oxalis violacea. *Violet-coloured Wood Sorrel.*
Lin. ſpec. 621. *ſyſt.* 433. *Reich.* 2. 390. *Jacqu. monogr.* 35. *t.* 80. *f.* 2. *hort.* 2. 84. *t.* 180. *Thunb. diſſ. n.* 10. *Gron. virg.* 161. *Pluk. phyt. t.* 102. *f.* 4. (Oxys).
Leaves ternate obſolutely villoſe, ſtyles very ſhort, interior filaments equal, flowers when cloſed drooping, when expanded upright.

15. Oxalis caprina. *Goat's-foot Wood Sorrel.*
Lin. ſyſt. 433. *Jacqu. monogr.* 36. *t.* 76. *f.* 1. *Thunb. diſſ. n.* 11. *prodr. cap.* 82.
O. Pes capræ. *Lin. ſpec.* 622. *ſyſt. ed.* 13. 360. *Reich.* 2. 390. *Burm. afr.* 73. *t.* 28. *f.* 3. *Curt. magaz.* 237.
Leaves ternate ſmooth half-two-lobed, ſtyles very ſhort, interior filaments unequal, flowers upright.

16. Oxalis cernua. *Nodding Wood Sorrel.*
Lin. ſyſt. 433. *Jacqu. monogr.* 37. *t.* 6. *Thunb. diſſ. n.* 12. *t.* 2. *prodr. cap.* 82. *Mill. fig.* 130. *t.* 195. *f.* 1.
Leaves ternate ſmooth, ſtyles very ſhort, interior filaments equal, flowers when cloſed drooping, when expanded upright.

17. Oxalis dentata.
Jacqu. monogr. 38. *t.* 7.
Leaves ternate, petioles round, ſtyles very long.

18. Oxalis livida. *Livid Wood Sorrel.*
Jacqu. monogr. 39. *t.* 8.
Leaves ternate ſmoothiſh, ſcapes two-flowered, ſtyles middling.

19. Oxalis compreſſa.
Lin. ſyſt. 432. *ed.* 13. 360. *mant.* 389. *Jacqu. monogr.* 40. *t.* 78. *f.* 3. *Thunb. diſſ. n.* 7. *prodr. cap.* 82.
Leaves ternate birſute underneath, petioles compreſſed, ſtyles very long.

20. Oxalis Burmanni. *Digitate-leaved Wood Sorrel.*
Jacqu. monogr. 41.
O. bulboſa pentaphylla & heptaphylla, floribus magnis luteis copioſis. *Burm. afr.* 74. *t.* 29.
Leaves digitate.

21. Oxalis ſenſitiva. *Senſitive Wood Sorrel.*
Lin. ſpec. 622. *ſyſt.* 434. *Reich.* 2. 390. *fl. zeyl. n.* 180. *Jacqu. monogr.* 42. *t.* 78. *f.* 4. *Thunb. diſſ. n.* 26. *Leur. cochinch.* 350.
Oxys indica tamarindi foliis, floribus umbellatis. *Burm. zeyl.* 173.
Oxoides malabarica ſenſitiva, caule viridi glabro, flore luteo majore. *Garc in phil. tranſ.* 1730. 379. *t.* 2.
Mimoſa humilis, &c. *Pluk. alm.* 252.
Herba viva. *Cluſ. exot.* 290.—foliis Polypodii. *Bauh. pin.* 259.
Herba mimoſa Malabarenſium. *Zan. hiſt.* 199. *t.* 61.
Herba ſentiens. *Rumph. amb.* 5. 301. *t.* 104. *f.* 2.
Todda Vaddi. *Rheed. mal.* 9. 33. *t.* 13.
Leaves pinnate.

II. *With one-flowered peduncles.*

A. *Caulescent.*

22. Oxalis macroſtylis. *Long-ſtyled Wood Sorrel.*
Jacqu. monogr. 43. *t.* 9.
Corollas caryophylleous, ſtyles very long.

23. Oxalis tubiflora. *Tube-flowered Wood Sorrel.*
Jacqu. monogr. 44. t. 10.
Corollas caryophylleous, ſtyles very ſhort, filaments unequal.

24. Oxalis canescens. *Hoary Wood Sorrel.*
Jacqu. monogr. 45. t. 11.
Corollas caryophylleous, ſtyles very ſhort, filaments equal.

25. Oxalis ſecunda.
Jacqu. monogr. 46. t. 12.
Corollas caryophylleous, ſtyles of a middling length.

26. Oxalis hirta. *Hairy Wood Sorrel.*
Lin. ſpec. 623. ſyſt. 433. Reich. 2. 392. mant. 389. Jacqu. monogr. 47. t. 13. & 77. f. 3. Thunb. diſſ. n. 18. prodr. cap. 83. Burm. afr. 70. t. 28. f. 1. Plak. amalth. t. 434. f. 7.
Corollas bell-ſhaped, ſtyles very long, filaments toothleſs equal.

27. Oxalis hirtella.
Jacqu. monogr. 48. t. 14.
Corollas bell-ſhaped, ſtyles very long, filaments toothletted unequal.

28. Oxalis multiflora. *Many-flowered Wood Sorrel.*
Jacqu. monogr. 49. t. 15.
O. hirtæ varietas. *Jacqu. collect. 3. 223. ic. rar. vol. 3.*
Corollas bell-ſhaped, ſtyles very ſhort, leaflets wedge-ſhaped.

29. Oxalis rubella.
Jacqu. monogr. 50. t. 16.
O. hirta. *Jacqu. collect. 3. 232. ic. rar. vol. 3. Burm. afr. 71. t. 28. f. 2.*
Corollas bell-ſhaped, ſtyles middling, filaments toothleſs.

30. Oxalis roſacea.
Jacqu. monogr. 51. t. 17.
Corollas bell-ſhaped, ſtyles middling, filaments gibboſely toothletted.

31. Oxalis diſticha.
Jacqu. monogr. 52. t. 18.
Corollas bell-ſhaped, ſtyles middling, petioles wingedly ſtipuled.

32. Oxalis tenella.
Jacqu. monogr. 53. t. 19.
Subcauleſcent, corollas bell-ſhaped, filaments toothleſs, leaflets obcordate.

33. Oxalis reptatrix.
Jacqu. monogr. 54. t. 20.
Subcauleſcent, corollas bell-ſhaped, filaments toothletted, leaflets roundiſh.

B. *Stipitated.*

* *With ſimple leaves.*

34. Oxalis lepida.
Jacqu. monogr. 55. t. 21.
Styles very long.

35. Oxalis monophylla. *Simple-leaved Wood Sorrel.*
Lin. ſyſt. 432. Reich. 2. 388. mant. 241. Jacqu. monogr. 56. t. 79. f. 3. Thunb. diſſ. n. 1. t. 1. prodr. cap. 82.
Styles of middling length.

36. Oxalis roſtrata. *Beaked Wood Sorrel.*
Jacqu. monogr. 57. t. 22.
Styles very ſhort.

** *With binate leaves.*

37. Oxalis criſpa. *Curled Wood Sorrel.*
Jacqu. monogr. 58. t. 23.
Leaflets obovate curled.

38. Oxalis aſinina.
Jacqu. monogr. 59. t. 24.
Leaflets lanceolate, ſtyles middling.

39. Oxalis leporina.
Jacqu. monogr. 60. t. 25.
Leaflets lanceolate, ſtyles very long, filaments toothletted.

40. Oxalis lanceæfolia.
Jacqu. monogr. 61. t. 26.
Leaves binate and ternate, ſtyles very long, filaments toothleſs.

*** *With ternate leaves.*

41. Oxalis fabæfolia. *Bean-leaved Wood Sorrel.*
Jacqu. monogr. 62. t. 27.
Leaves obovate flat, petioles winged.

42. Oxalis laburnifolia. *Laburnum-leaved Wood Sorrel.*
Jacqu. monogr. 63. t. 28.
The middle leaflet ſublanceolate, the ſide ones obliquely oblong, ſtyles very long, filaments toothletted.

43. Oxalis ſanguinea. *Bloody-leaved Wood Sorrel.*
Jacqu. monogr. 64. t. 29.
The middle leaflet ſublanceolate, the ſide ones obliquely oblong, ſtyles middling.

44. Oxalis minuta. *Small Wood Sorrel.*
Lin. ſyſt. 432. Jacqu. monogr. 65. t. 79. f. 2. Thunb. diſſ. n. 2. t. 2.
Leaflets lanceolate acute, ſtyles very long, filaments toothleſs.

45. Oxalis ciliaris. *Ciliate-leaved Wood Sorrel.*
Jacqu. monogr. 66. t. 30.
Leaflets oblong blunt, ſtyles very long, filaments toothleſs.

46. Oxalis arcuata. *Bending Wood Sorrel.*
Jacqu. monogr. 67. t. 31.
Leaflets linear-oblong emarginate, ſtyles very ſhort.

47. Oxalis linearis. *Linear-leaved Wood Sorrel.*
Jacqu. monogr. 68. t. 32.
Filaments toothleſs, ſtyles very long, corollas caryophylleous, leaflets linear.

48. Oxalis gracilis. *Slender Wood Sorrel.*
Jacqu. monogr. 69. t. 33.
Filaments toothleſs, ſtyles very long, corollas bell-ſhaped, leaflets linear.

49. Oxalis reclinata. *Reclining Wood Sorrel.*
Jacqu. monogr. 70. t. 34.
Filaments toothleſs, ſtyles middling, leaflets linear.

50. Oxalis miniata. *Vermilion Wood Sorrel.*
Jacqu. monogr. 71. t. 35.
Filaments toothleſs, ſtyles very ſhort, leaflets linear.

51. Oxalis verſicolor. *Striped-flowered Wood Sorrel.*
Lin. ſpec. 622. ſyſt. 434. Reich. 2. 390. Jacqu. monogr. 72. t. 36 & 77. f. 4. Thunb. diſſ. n. 19. prodr. cap. 83. Curt. magaz. 155. Smith ic. rar. 7. t. 7.
Filaments toothletted, ſtyles very long, ſtem upright hairy generally ſimple, leaflets linear callous on the under ſide at the tip.

52. Oxalis elongata.
Jacqu. monogr. 73. t. 37.
Filaments toothletted, ſtyles very ſhort, petals emarginate, leaflets linear.

53. Oxalis tenuifolia. *Fine-leaved Wood Sorrel.*
Jacqu. monogr. 74. t. 38.
Filaments toothletted, ſtyles very ſhort, petals quite entire, leaflets linear.

54. Oxalis polyphylla. *Many-leaved Wood Sorrel.*
Jacqu. monogr. 75. t. 39.
O. verſicolor. *Jacqu. collect. 3. 225. ic. rar. vol. 3.*
Filaments gibboſely toothletted, ſtyles middling, leaflets linear.

55. Oxalis cuneata.
Jacqu. monogr. 76. t. 40.
Filaments toothleſs, ſtyles very long, leaflets wedge-ſhaped.

56. Oxalis cuneifolia.
Jacqu. monogr. 77. t. 41.
Filaments toothleſs, ſtyles very ſhort, leaflets wedge-ſhaped.

57. Oxalis glabra. *Smooth Wood Sorrel.*
Lin. ſyſt. 433. Jacqu. monogr. 78. t. 76. f. 3. Thunb. diſſ. n. 17. t. 2. prodr. cap. 83.
Filaments toothletted, ſtyles very long—ſtipe upright ſmooth, leaflets oblong or wedge-ſhaped ſmooth.

58. Oxalis puſilla. *Dwarf Wood Sorrel.*
Thunb. monogr. 79. t. 24.
Filaments toothletted, ſtyles middling, leaflets wedge-ſhaped.

59. Oxalis ambigua. *Doubtful Wood Sorrel.*
Jacqu. monogr. 80. t. 43.
Styles very long, leaflets unſpotted flat, the middle ones wedge-ſhaped, the ſide ones oblong, calycine leaflets equal.

60. Oxalis undulata. *Wave-leaved Wood Sorrel.*
Jacqu. monogr. 81. t. 44.
Styles very long, leaflets unſpotted waved, middle wedge-ſhaped, lateral oblong, one leaflet of the calyx ſpatulate.

61. Oxalis ſuſcata.
Jacqu. monogr. 82. t. 45.
Styles very long, leaflets ſpotted on both ſides, middle wedge-ſhaped lateral oblong.

62. Oxalis glandulofa. *Glandular Wood Sorrel.*
Jacqu. monogr. 83. t. 46.

Styles middling, leaves and calyxes capitately ciliate, middle leaflet wedgeſhaped lateral ones oblong.

63. Oxalis tricolor. *Three-coloured Wood Sorrel.*
Jacqu. monogr. 84. *t.* 47.
β. *Id.* 85. *t.* 48.
Styles middling, cilias ſimple, middle leaflet wedge-ſhaped, lateral ones oblong.

64. Oxalis exaltata.
Jacqu. monogr. 86. *t.* 49.
Styles very ſhort, leaflets duſky-ſpotted, middle wedge-ſhaped lateral oblong, ſcapes upright.

65. Oxalis rubroflava.
Jacqu. monogr. 87. *t.* 50.
Styles very ſhort, leaflets unſpotted, middle wedge-ſhaped lateral oblong, ſcapes upright.

66. Oxalis flaccida.
Jacqu. monogr. 88. *t.* 51.
Styles very ſhort, leaflets unſpotted, middle wedge-ſhaped lateral oblong, ſcapes flaccid.

67. Oxalis variabilis. *Variable Wood Sorrel.*
Jacqu. monogr. 89. *t.* 52.
O. purpurea foliis totis viridibus, limbo albo. *Thunb. diſſ. n.* 8. 1. β.
β. O. variabilis rubra. *Jacqu. monogr.* 90. *t.* 53.
Styles very ſhort, leaflets roundiſh unſpotted very ſlightly emarginate.

68. Oxalis grandiflora. *Great-flowered Wood Sorrel.*
Jacqu. monogr. 91. *t.* 54.
Styles very ſhort, leaflets roundiſh frequently blood-red underneath, ſcarcely emarginate.

69. Oxalis convexula. *Convex-leaved Wood Sorrel.*
Jacqu. monogr. 92. *t.* 55.
Styles middling, filaments toothleſs, leaflets roundiſh convex.]

70. Oxalis purpurea. *Purple Wood Sorrel.*
Lin. ſpec. 621. *ſyſt.* 432. *Reich.* 2. 389. *hort. cliff.* 175. *Jacqu. monogr.* 93. *t.* 56. *Thunb. diſſ. n.* 8. *prodr. cap.* 82. *Knipb. cent.* 3. *n.* 70. *Ehret pict. t.* 10. *f.* 2. *Breyn. cent.* 102. *t.* 46. *Comm. hort.* 1. 41. *t.* 21. (Oxys.)
Styles middling, filaments toothletted, petioles round, leaflets roundiſh unſpotted ciliate.

[71. Oxalis laxula.
Jacqu. monogr. 94. *t.* 57. *Thunb. diſſ. n.* 8. 2. γ.
Styles middling, filaments toothletted, petioles round, leaflets roundiſh often purple underneath.

72. Oxalis breviſcapa.
Jacqu. monogr. 95. *t.* 58.
Styles middling, filaments toothletted, petioles thick compreſſed, leaflets roundiſh.

73. Oxalis rigidula.
Jacqu. monogr. 96. *t.* 59.
Styles very long, leaflets roundiſh unſpotted.

74. Oxalis ſpecioſa. *Handſome Wood Sorrel.*
Jacqu. monogr. 97. *t.* 60. *Thunb. diſſ. n.* 8. 2. α.
Styles very long, leaflets roundiſh, unſpotted above, underneath blood red and dotted with gold.

75. Oxalis ſuggillata.
Jacqu. monogr. 98. *t.* 61.
Styles very long, leaflets roundiſh, when adult livid underneath all over and above at the edges.

76. Oxalis truncatula. *Truncate-leaved Wood Sorrel.*
Jacqu. monogr. 99. *t.* 62.
Styles very long, leaflets roundiſh truncated.

77. Oxalis ſulphurea. *Sulphur-coloured Wood Sorrel.*
Jacqu. monogr. 100. *t.* 63.
Styles very ſhort, filaments toothleſs, calyx ciliate, leaflets obcordate.

78. Oxalis natans. *Floating Wood Sorrel.*
Lin. ſyſt. 432. *Jacqu. monogr.* 101. *t.* 76. *f.* 2. *Thunb. diſſ. n.* 4.
Styles very ſhort, filaments toothleſs, calyx ſmooth at the edges, leaves floating, leaflets obcordate.

79. Oxalis ſtrumoſa.
Jacqu. monogr. 102. *t.* 64.
Styles very ſhort, filaments toothletted equal, leaflets ſpotted on both ſides, middle one obcordate, lateral ones roundiſh.

80. Oxalis luteola.
Jacqu. monogr. 103. *t.* 65.
Styles very ſhort, filaments toothletted equal, leaflets obcordate, unſpotted and ſomewhat villoſe on both ſides.

81. Oxalis lanata. *Woolly Wood Sorrel.*
Lin. ſyſt. 432. *Jacqu. monogr.* 104. *t.* 77. *f.* 2. *Thunb. diſſ. n.* 6. β.
Styles very ſhort, filaments gibbouſly toothletted equal, leaflets obcordate very birſute on both ſides.

82. Oxalis punctata. *Dotted Wood Sorrel.*
Lin. ſyſt. 432. *Jacqu. monogr.* 105. *t.* 66. *Thunb. diſſ. n.* 3. *t.* 1.
Styles very ſhort, filaments toothletted unequal, leaflets underneath coloured and dotted with gold, middle one obcordate, lateral ones roundiſh.

83. Oxalis obtuſa.
Jacqu. monogr. 106. *t.* 79. *f.* 1.
O. lanata. *Thunb. diſſ. n.* 6. α.
Styles middling, filaments toothletted unequal, calycine leaflets rounded-blunt, leaflets obcordate.

84. Oxalis fallax.
Jacqu. monogr. 107. *t.* 67.
Styles middling, filaments toothletted equal, leaflets obcordate.

85. Oxalis marginata.
Jacqu. monogr. 108. *t.* 68.
Styles middling, filaments toothleſs equal, leaflets obcordate.

86. Oxalis pulchella. *Pretty Wood Sorrel.*
Jacqu. monogr. 109. *t.* 69.
Styles very long, filaments toothleſs, leaflets obcordate.

87. Oxalis macrogonya.
Jacqu. monogr. 110. *t.* 70.
Styles very long, filaments toothletted, ſtipe ſubterraneous, leaflets obcordate.]

88. Oxalis incarnata. *Fleſh-coloured Wood Sorrel.*
Lin. ſpec. 622. *ſyſt.* 433. *Reich.* 2. 391. *hort. cliff.* 175. *Jacqu. monogr.* 111. *t.* 71. *Thunb. diſſ. n.* 15. *Comm. hort.* 1. 43. *t.* 22. (Oxys.)
Styles very long, filaments toothletted, ſtipe ſtanding out very long branched, leaflets obcordate.

[89. Oxalis bifida. *Cloven-leaved Wood Sorrel.*
Lin. ſyſt. 433. *Jacqu. monogr.* 112. *t.* 79. *f.* 4. *Thunb. diſſ. n.* 16. *t.* 1.
Styles very long, filaments toothletted, ſtipe ſtanding out commonly branched, leaflets ſemibifid, corolla bell-ſhaped.

90. Oxalis longiflora. *Long-flowered Wood Sorrel.*
Lin. ſyſt. 432. *Jacqu. monogr.* 113. *Thunb. diſſ. n.* 9.
Stipe ſtanding out, leaflets ſemibifid, corolla caryophylleous?]

91. Oxalis Acetoſella. *Common Wood Sorrel.*
Lin. ſpec. 620. *ſyſt.* 432. *Reich.* 2. 388. *hort. cliff.* 175. *fl. lapp.* 194. *ſuec. n.* 466. *mat. med.* 118. *Woodv. med. bot.* 56. *t.* 20. *Jacqu. monogr.* 114. *t.* 80. *f.* 1. *Thunb. diſſ. n.* 5. *Gærtn. fruct.* 2. 152. *Hudſ. angl.* 198. *Wither. arr. ed.* 3. 430. *Curt. lond.* 2. 31. 111. *Lightf. ſcot.* 237. *Relh. cant. n.* 334. *Sibth. oxon. n.* 421. *Pollich pal. n.* 434. *Neck. gallob.* 200. *Kroch. ſilef. n.* 694. *Villars dauph.* 3. 585. *Fl. dan.* 80. *Mill. fig.* 195. 2. *Mill. illuſtr. Salib. hort.* 1. *t.* 32. *Plenck ic. t.* 354. *Berg. phyt. t.* 41.
Oxys Acetoſella. *Hall. helv. n.* 928. *Scop. carn. n.* 561. *Allion. pedem. n.* 1602.
Oxys plinianı. *Lob. ic.* 2. 32.
O. alba. *Ger.* 1030. 1. *emac.* 1201. *Raii ſyn.* *281.
O. Trifolium acetoſum, flor. lacteis. *Tabern.* 525.
Oxys. *Fuchſ.* 567.
Trifolium acetoſum. *Dod. pempt.* 578. 2. *Matth.* 837.—vulgare. *Bauh. pin.* 330. *Park. theat.* 746. 1. *Raii hiſt.* 1098. *Petiv. brit.* 63. 7.
Oxys ſ. Trifol. acidum flore albo. *Bauh. hiſt.* 2. 387. 2. *Mor. hiſt. ſ.* 2. *t.* 17. *f.* 1. *ord.* 4.
Lujula. *Blackw. herb.* 308.
β. Trifolium acetoſum vulgare flore purpureo. *Bauh. pin.* 330. *Merr. pin. Wither. arr. var.* 2. *Raii ſyn.* *281. 2.
Stylet equal, leaflets obcordate hairy.

**** *With Digitated leaves.*

[92. Oxalis lupinifolia. *Lupin-leaved Wood Sorrel.*
Jacqu. monogr. 115. *t.* 72.
Styles very ſhort, calyx ſmooth, leaflets flat.

93. Oxalis flava. *Narrow-leaved Wood Sorrel.*
Lin. spec. 621. *fyſt.* 434. *Jacqu. monogr.* 116. *t.* 73. *Thunb. diſſ. n.* 24.
Styles very ſhort, calyx capitately ciliate, leaflets channelled-converging.

94. Oxalis ſtabelliformis. *Fan-leaved Wood Sorrel.*
Jacqu. monogr. 117. *t.* 74.
Styles of middling length: leaflets linear.

95. Oxalis pectinata.
Jacqu. monogr. 118. *t.* 75, & 78. *f.* 2.
Styles very long, leaflets ſmooth.

96. Oxalis tomentoſa.
Lin. fyſt. 434. *Jacqu. monogr.* 119. *t.* 81. *Thunb. diſſ. n.* 25. *Pluk. amalth. t.* 350. *f.* 3. (Oxys.)
Styles very long, leaflets very hirſute underneath.

DESCRIPTIONS, *&c.*

The root in this genus is commonly bulbous; in ſome ſpecies only thick and fleſhy; in a few branched: the bulbs conſiſt of fleſhy ſcales, ſometimes cloſely imbricate, ſometimes loote and diverging. In a few the ſubterraneous ſtipe and the terminating fibre of the bulb produce little dog-toothed bulbs, in ſuch abundance as to fill the whole pot to the very bottom, as in *purpurea, cernua, reptatrix.* Sometimes the bulb ſtrikes very deep, as in *tomentoſa*; the original bulb near the ſurface ſtriking a radical fibre downright from its baſe, which puts out from its ſide a new bulb, producing the next year's plant, whilſt the former periſhes: if then the young plant be pulled up, the ſtem under ground is often broken off from the bulb, which has given occaſion to a wrong deſcription of the root. Bulbs which have a hard entire coat moſt eaſily periſh, becauſe perhaps the nucleus is ſuffocated. Sometimes fuſiform, thick and long fibres ſpring in a monſtrous form from the bulbs, as in *glandulofa* and ſome others.

Some of the ſpecies have a proper *Stem* (Caulis), when it bears all the leaves and peduncles alternately, and not in a terminating umbel: this is either branched or quite ſimple, and that for the moſt part inconſtantly. Others have a *Stipe*; the leaves and flowers being aggregate together at the end of the ſtalk; this bears none or very few leaves along it, ſeldom many: this is ſometimes *ſubterraneous* or concealed under ground, when the plant is vulgarly called *ſtemleſs*; ſometimes it is above ground (exſertus), and is upright, reclining or procumbent; in the ſame plant the ſtipe is frequently from an inch to half a foot in height, and ſometimes there is none, as particularly in *polyphylla*. In ſome ſpecies the ſtipe is always ſubterraneous, as in *breviſcape, purpurea*, &c.: in others it is always *exſert*, as in *gracilis, verſicolor, tenuifolia*. Stipes are commonly quite ſimple; ſome however are branched, the branches terminating in umbels, as *incarnata* and *polyphylla*. Hence the diviſion of the ſpecies into *caulefcent* and *ſtipitate*.

The leaves are not perhaps truly ſeſſile in any of the ſpecies; they are ſubſeſſile in a few, but in moſt are petioled. They are ſimple in three ſpecies, binate in four, pinnate in one, digitate in ſix, in the reſt ternate. The petiole in a few ſprings from a widened ſubmembranaceous baſe; but in moſt the baſe itſelf of the petiole forms a ſhort joint, which is eaſily diſtinguiſhed by the ſurrounding ring; in very few it is winged.—The leaflets are generally ſubſeſſile or on very ſhort petioles, very different in their forms, commonly more or leſs dotted, very ſeldom quite ſmooth; in ſome green on both ſides, but in others coloured and frequently very elegantly underneath: almoſt all of them have an acid taſte; whence their names of Oxalis or Oxys, Wood Sorrel, &c.

The partial ſtem bearing the flower is a *peduncle* in the cauleſcent; a *ſcape* in the ſtipitate ſpecies. Each, like the petiole, ariſes at the baſe from a joint; very few ſpecies being without it.—Moſt of them have two little bractes; ſometimes alternate without any joint, ſometimes oppoſite, and then uſually ſpringing from a maniſeſt joint: they are placed at the bottom of the peduncle in ſome ſpecies, about the middle in others, at top or even cloſe under the calyx in others; but always conſtant in the ſame ſpecies. Very few are deſtitute of theſe bractes.

The calyx in moſt of the ſpecies is *ſo ſlightly* united at the baſe, that it is more properly five-leaved than five-parted: in the common ſort (O. Acetoſella) however it is truly one-leafed: the leaflets vary ſo much, even in the ſame flower, in hairineſs, colour and breadth, that they are little to be depended on for ſpecific diſtinctions.

Tournefort, Ray, Rivinus, Ludwig, Magnol, Allioni, Thunberg conſider the corolla as monopetalous; Ruppius and Knauth as pentapetalous; Linnæus takes the middle way, in deſcribing it as cohering ſlightly at the baſe; in the Kew catalogue the corolla is ſaid to conſiſt of five petals ſlightly cohering at the baſe; Dillenius alſo, to the ſpecies he has deſcribed, attributes five petals cohering ſlightly at the claws; Haller likewiſe conſiders the corolla as pentapetalous. Certainly the five baſes of the claws being diſtinct in moſt of the ſpecies, but not in all, indicate the corolla to be pentapetalous: nay there are ſome ſpecies in which the petals are entirely diſtinct, without the leaſt connection; in others the union is ſo very ſlight, that they may be ſeparated without tearing them; in others again they are really connected: this diſtinction therefore is uncertain, but upon the whole the corolla is beſt conſidered as pentapetalous. The figure of the corolla is generally campanulate, with almoſt upright claws, and a ſpreading wide border. A few have the claws very long, all together forming a cylinder, with the border ſpreading out very much; this ſort of corolla may be named *caryophylleous* from its reſemblance to that of a Pink. The colour of the corolla is white, yellow, purple or red, except in very few ſpecies, varying only in intenſity.

The filaments are commonly united into a cylinder at the baſe, and therefore are monadelphous: in a very few they are quite ſeparate, they are all placed in the ſame circle at the baſe, but as they riſe, five of them alternately tend inwards, and are called interior; the other five, being more upright, are ſaid to be exterior. In moſt ſpecies the interior filaments (the exterior never) put forth from the thickened back at bottom a very evident tooth, in others only an obtuſe bump, theſe are ſaid to be *toothletted*; thoſe which have none of this proceſs are called *toothleſs*. The interior filaments are always longer than the exterior, and are themſelves ſometimes equal, ſometimes unequal in height. The exterior ones are very rarely unequal. The filaments are either ſmooth or hairy; and the hairs are either ſimple or capitate. The hairineſs or ſmoothneſs is not always the ſame in the filaments of each order; nor do the toothlets always follow the hairineſs of the filaments, and when they are hairy, the hairs are only in front. The anthers are yellow, ſeldom white, incumbent for the moſt part, but in a few ſpecies erect.

The germ is five-cornered, oblong or ovate, ſomewhat hairy eſpecially at the top, ſeldom wholly ſmooth: it is either entirely of a pale green colour, or has a ſingle row of calluſes or orange-coloured dots on each ſide at the corners. Styles ſeldom ſmooth: ſometimes longer than the interior filaments, or *very long*; ſometimes ſhorter than theſe, but longer than the exterior filaments, or of a *middling* length; ſometimes ſhorter than the latter, denominated *very ſhort*; or preciſely *equal* to the interior filaments, which is very rare. The ſtigmas are pencilled almoſt in all; in a very few capitate. This proportion of the ſtyles to the ſtamens, together with the equality or inequality of the filaments, and the preſence or want of the toothlets, being conſtant, are circumſtances fit to make uſe of in forming *diagnoſes* or ſpecific differences.

The fruit in many of the ſpecies is unknown, but in thoſe that are known, the capſule is more or leſs quinquangular ſeldom five-winged, cylindric or ovate, generally villoſe, five-celled and longitudinally five-valved. The ſeeds in ſome very few, in others many in a longitudinal row lying over each other, roundiſh, ſomewhat compreſſed, and tranſverſely wrinkled. Each ſeed is incloſed in a white coriaceous pellucid and very ſhining pellicle, which is a ſort of aril. This aril becomes dry in the ripe ſeed, and then ſeparates with a conſiderable elaſtic force into two cohering valves,

sets the seed free, and together with it is violently cast forth at the opening angles of the capsule. The capsules then dry and contract. The aril retains the wrinkles of the seed impressed upon it.

Linneus first gave the name of *Oxalis* to this genus, in his hortus Cliffortianus, and the name has been adopted by most modern botanists. The *Oxalis* of Pliny however seems to be a species of Rumex, Lapathum or Dock, and probably *Rumex Acetosella* or Common Sorrel. The older botanists, and Haller, Scopoli and Allioni among the moderns, name the genus, with more judgment *Oxys*, Pliny having described the Oxys as having ternate leaves: he probably means our *Oxalis cornicülata*, which is a native of Italy. In deference however to Linneus and his followers, the name of *Oxalis* is here adopted [a].

Of the ninety-six species here set down from Jacquin's fine work on this genus, two only are natives of Europe, one of the East Indies, twelve of America, and all the rest of the Cape of Good Hope, that inexhaustible treasury of beautiful plants. Jacquin is here servilely followed, that illustrious author having bestowed great pains in ascertaining and describing the species; some of which however can scarcely be allowed to be any thing more than varieties.

1. Root branched. Stem a foot and half high, round, branched, the thickness of a pigeon's quill; when old brownish, smooth, when young pubescent. Branches the same. Leaves alternate, approximating at the ends of the branches, ternate. Petiole not jointed at the base, slender, hirsute, about an inch in length. Leaves obovate or oval, rounded, villose at the edge, dotted on both sides and rough with very short hairs, petioled; the lateral ones generally emarginate; the middle one larger, on a longer petiole, and for the most part quite entire. Peduncles not jointed at the base, axillary, solitary, filiform, hirsute, the length of the leaves, twice bifid at top, five-flowered; divisions very short and each supported by a little twin linear hirsute bractæ: pedicels jointed at bottom. Calycine leaflets lanceolate, acute, villose at the edge, very hirsute, upright. Corolla three times as long as the calyx, bell-shaped, spreading very much at top, rounded, yellow. Filaments connate at the base: interior toothless, equal, hirsute with simple hairs: exterior smooth. Anthers incumbent. Styles smooth. Native of the Caracas in South America.

2. Root branched. Stem round, villose, a foot and half high, the thickness of a pigeon's quill. Branches hirsute. Leaves alternate, or several together from the same point at intervals, ternate. Petiole not jointed at the base, slender, hirsute, spreading, about an inch and half in length. Leaflets subsessile, subovate-rhombed, bluntish, quite entire, villose at the edge, and minutely villose on both sides; the middle one longer, about an inch in length. Peduncles not jointed at the base, filiform, from the axils of the aggregate leaves, hirsute, umbelliferous, with an involucre of two opposite, linear, hirsute leaflets. Pedicels in pairs or threes, hirsute, commonly simple and one-flowered, more seldom bifid and two-flowered, with a little bractæ at the division. Calycine leaflets lanceolate, acute, villose at the edge, hirsute, erect. Corolla three times as long as the calyx, bell-shaped, spreading very much at top, rounded. Filaments connate at the base: interior toothless, equal, hirsute with simple hairs: exterior smooth. Anthers incumbent. Styles hirsute with simple hairs.—Native of the Caracas in South America [a].

3. Root branched. Stem round, a foot high. Leaves alternate, ternate. Petiole round, spreading, two or three inches long. Leaflets bluntish, quite entire, the middle one longer, often more than an inch in length, petioled. Peduncles axillary, solitary, spreading, about the length of the leaves. Pedicels three or four, simple, short. Calycine leaflets lanceolate, acute. Corolla almost three times as long as the calyx, bell-shaped, yellow [b].

[a] Jacquin, monogr. introd. [b] Jacquin.

[b] Jacquin from Plumier.

Jacquin has changed Linneus's name of *frutescens*, this species having the appearance perhaps of becoming something shrubby at bottom only in common with the two former and the next succeeding species; but it does not seem that any Oxalis is really frutescent.

Native of the Caribbee islands and Guiana.] Discovered by Plumier; and afterwards found growing plentifully at La Vera Cruz by Dr. Houstoun, who sent it to England. Mr. Miller says, it rises with a shrubby stalk a foot and half high, sending out several slender branches. Leaves in pairs or threes, on short petioles. Peduncles near two inches long; each sustaining four or five yellow flowers, with the petals not much longer than the calyx: each flower being on a crooked pedicel hangs down.

4. [Root branched annual. Stem somewhat villose, round, the thickness of a reed at the base, dusky at bottom, a foot and half high, putting forth many alternate branches below. Leaves alternate, ternate. Petiole not jointed at the base, half round, slightly grooved in front, somewhat hirsute, from an inch to two inches in length. Leaflets oblong or ovate, bluntish, quite entire, smooth above, somewhat villose underneath, appearing dotted when examined by a glass or held up to the light, petioled, an inch long, the middle leaflet a little larger and on a longer petiole. Peduncles not jointed at the base, axillary, solitary, generally shorter than the petioles, racemed with a solitary flower at the division; pedicels very short with very minute bractæ. Calycine leaflets lanceolate, acuminate, smooth, green, upright. Corolla twice as long as the calyx, spreading very much at top, rounded, smooth, flesh-coloured. Filaments united at the base: interior toothletted, equal, hirsute with capitate hairs, the toothlets smooth; exterior smooth. Anthers incumbent, yellow. Styles the length of the interior filaments, hirsute with simple hairs. Stigmas capitate not pencilled. Capsule ovate, pentagon-winged, acute. Seeds in each cell commonly two, ovate, acute, wrinkled, brown. It flowers in the stove from may to october.—Native of the Caracas, and Guiana [a].]

Mr. Miller says, it grows naturally in the Brazils; plants having come up in plenty, in a tub of earth which came thence. According to him, it seldom rises more than three or four inches high: the leaflets are large and hairy, on long foot-stalks: the flowers rise immediately from the root, on scapes the same length with the leaves, bifid, and supporting two pretty large red flowers. Capsules oblong, filled with brown seeds.

[Jacquin refers Feuillée's synonym, attributed by Murray to this species, to the next.

5. Root branched, annual. Stem half a foot high, the thickness of a reed. Leaves alternate, ternate. Petiole two inches long, spreading. Leaflets sessile, scarcely half an inch long. Peduncles axillary, solitary, erect: pedicels shortish, one-flowered. Calycine leaflets lanceolate, acute, erect. Corolla almost three times as long as the calyx, bell-shaped: claws upright: border obovate, rounded, rose-coloured with six red lines from the base to the middle.—Native of Chili, in moist places [a].

6. Root perennial, turbinate, putting forth capillary fibrils from the side, near an inch thick at top, ending in a sharp point at bottom, fleshy, dusky ash-coloured. Stem round, somewhat scaly, half an inch high, putting forth from the top several leaves and several branches or stems, erect, round, slender, white-villose, pale green, about nine inches long. Leaves alternate, ternate. Petioles about an inch and half in length, spreading. Leaflets sessile, half an inch long. Peduncles axillary, solitary, two-flowered or one-flowered, the length of the leaves; with little bractæ to the pedicels opposite and acute. Calycine leaflets lanceolate, acute, erect. Corolla many times longer than the calyx, very wide, rounded, yellow. Capsule membranaceous, five-celled; with many small seeds.

Native of Paraguay, in the vast plain to the north-

[a] Jacqu. monogr. [a] Jacqu. from Feuillée.

ward

ward of the river de la Plata. Observed by Feuillée with the preceding and two next species [a].

Jacquin gave this species its trivial name from the shape of the root, like a top: from *κονος*, *turbo*.

7. Root annual, fusiform, putting forth many fibrils, half an inch thick at top, pale green. Stem round, two feet high, branched, half an inch thick at the base, pale green, full of an acid juice. Leaves alternate, ternate. Petiole jointed at the base, round, spreading a little or almost upright, some inches in length. Leaflets sessile. Peduncles axillary, solitary, almost upright, about the same length with the leaves. Pedicels about eight, before flowering drooping, but whilst in flower upright. Calycine leaflets lanceolate, acute. Corolla three times as long as the calyx, bell-shaped, ten lines in diameter, yellow with purple streaks on the inside; borders crenate.

Native of Peru. It seems to be wholly smooth. About Lima it is generally cultivated in gardens, and is used as Sorrel [b].

8. Root annual, branched, fibrous. Stem round, branched, half a foot high, villose. Leaves scattered, ternate. Petiole villose, about an inch and half in length. Leaflets sessile, smooth above, underneath and at the edges villose, slightly tinged with red at the edge, especially at the back, scarcely half an inch long. Peduncles axillary, with appressed hairs. Leaflets of the involucre lanceolate, acute, small. Pedicels commonly in pairs, sometimes three or four together, slender, before flowering drooping, then erect, when fruiting reflex. Calycine leaflets lanceolate, acute, erect. Corolla three times as long as the calyx, yellow; border obovate, emarginate, spreading very much. Capsule narrow-conical, five-grooved, villose, erect, almost an inch long. Seeds roundish, white, shining.

Native of Carolina. It flowers here in june and july [c]. Cultivated in Sherard's garden at Eltham before 1732.

9. Root perennial, creeping, round, putting out capillary fibres at the knots, branched. Stems from the root as it creeps along several, roundish, slender, somewhat villose, purplish, finally branched, half a foot high and more, upright but being weak often lying down, annual. Leaves alternate, a few sometimes opposite, ternate. Petiole springing from a joint margined in front, round, villose, spreading, from two to four inches long, flaccid. Leaflets subpetioled, somewhat hirsute on both sides with decumbent hairs and green, ciliate, scarcely half an inch long. Peduncles axillary, jointed at the base, round, villose, upright, about the same length with the leaves, having from two to seven flowers in an umbel, with a pedicel often branched: leaflets of the involucre several, ciliate and somewhat hirsute. Calycine leaflets lanceolate, sharpish, somewhat hirsute, ciliate, pale green, erect. Corolla twice or thrice as long as the calyx, subcampanulate, yellow: claws upright, border obovate, very obscurely emarginate and very spreading. Filaments connate in a cylinder; interior toothless, equal, having a very few capitate hairs at top, in other parts smooth: outer smooth. Anthers oblong, incumbent, yellow. Germ oblong, hirsute, pale green. Styles almost equal, hirsute with simple hairs. Capsule columnar, sharpish, hirsute, five-cornered [d].

Swartz observes, that it varies with a stiffer and weaker stem, upright or declining, so that it is scarcely any thing more than a variety of *O. corniculata*.

Mr. Salisbury describes his *O. ambigua* as having a creeping stem, ternate leaves, on half-round petioles without stipules, emarginate leaflets, the petals obovate quite entire, styles the height of the longer filaments and spreading.

Mr. Salisbury remarks, that though the primary stems in some degree answer to the definition which Linnæus has given of the term *fruticus*, yet the branches which break out near the root are constantly creeping; there is however an obvious difference to the eye between this and the following.—I have not distinguished it in a genus perhaps already overloaded with species.

Browne recommends it as a pleasant cooler and diuretic, and says that it was formerly administered in inflammatory cases, but has been little used since the more agreeable acid fruit-trees have been so much cultivated in the West Indies.

Native of North America, Jamaica and Piedmont. Cultivated in the botanic garden at Oxford in 1658. It flowers from june to october [e] Mr. Miller remarks, that wherever this plant has been suffered to ripen its seeds, it has become a common weed.

10. [Root branched, fibrous, brownish, annual. Stems several, wholly prostrate, rooting, branched, slender, round, villose, often tinged with purple, growing to half a foot in height or more. Leaves alternate, collected in a small number at the rooting parts of the stems, ternate. Petiole arising from a joint which has two rims in front, round, slender, villose, purplish, almost upright, from an inch to two inches in length. Leaflets subsessile, obcordate, somewhat villose on both sides, and at the edge, dusky green. Peduncles axillary, or on the shorter branches terminating, very shortly jointed at the base, round, somewhat villose, upright, half an inch long, generally two-flowered in a sort of umbel, with an involucre of two or three lanceolate, acute, villose leaflets. Calycine leaflets lanceolate, blunt, villose, ciliate, erect, pale green. Corolla twice as long as the calyx, subcampanulate, yellow: claws erect: borders obovate, blunt, spreading very much. Filaments connected at bottom: interior toothless, equal, having a very few capitate hairs at top, the other parts smooth; exterior smooth. Anthers oblong, incumbent, yellow. Germ oblong, very minutely villose, pale green. Styles almost equal, hirsute with simple hairs. Capsule columnar, acute, somewhat villose, five-cornered with the corners waved [f].]

According to Mr. Miller, the root is long and slender, the trailing stalks spread out eight or nine inches wide on every side, dividing into small branches, the leaves are on pretty long foot-stalks, and the leaflets are more deeply emarginated than in *O. acetosella*. The capsules are near an inch long. [Seeds brown, scored transversely, inclosed in a semitransparent aril or seed-coat, which being pressed, opens with a jerk, and throws out the seed to some distance [g].

Jacquin is of opinion that the *O. corniculata* of Pollich and other Germans is rather his *O. stricta*, which he affirms to be always upright, except when it is beat down by the wind or any accident; whereas the former is always procumbent, the very extremities of the stems and branches being close to the ground, like the runners of the Strawberry; the short flowering-branches only being upright: the stem also creeps, but not the root, which is annual: whereas in *stricta* the root is perennial, and it is that which creeps, not the stem. Retzius indeed affirms, that O. corniculata, protected from frost, is perennial; but that it always continues to be procumbent.

Mr. Salisbury has altered the trivial name to *pusilla*, because it is of much dwarfer growth than the preceding, and the old epithet is applicable to the whole genus. He describes the stem as creeping, the petioles as roundish, and stipuled at the base, with emarginate leaflets; the segments of the corolla obcuneiform, gnawn a little at the tip; and the styles scarcely the height of the longer filaments and subtigiate.

Native of Spain, Italy, Sicily, Greece, Austria, Switzerland, England, Japan, China, Cochinchina.—Cultivated in 1656, by Mr. John Tradescant, Junior [h]. It was not then known to be a native of England, and perhaps it may have established itself since that time in the mild climate of Devonshire; for it increases very abundantly and with great facility. It is said to have been first discovered here by Mr. J. Turner in the neighbourhood of Exeter. In 1781 it was found near Dawlish in Devonshire, and since that in several other places of the same county.

[a] Jacqu. from Feuill. [b] Idem. [c] Jacqu. from Dillenius. [d] Jacqu. monogr. [e] Hort. kew. [f] Jacquin. [g] Hollifex in Withering. [h] Hort. kew.

Mr. Salisbury remarks, that it is a proof of the mildness of the climate there, that this and other southern plants occur in it, as *Pinguicula lusitanica*, *Sibthorpia europæa*, *Lobelia urens*, and *Erica vagans*[a]. O. corniculata flowers from may to october.

11. Root fibrous, slender, branched. Stems radical, several, herbaceous, filiform, leafy, villose, purplish, some inches in length; branchlets alternate, like the stem. Leaves alternate, ternate. Petiole jointed and widening at the base, half round, villose, green, almost upright, half an inch or more. Leaflets obcordate, sessile, ciliate, smooth above, but having a very few villose hairs underneath, very small. Peduncles axillary, jointed at the base, one-flowered or two-flowered, round, villose, slender, almost upright, green: with a pair of little jointing villose bractes about the middle. Calycine leaflets lanceolate, acute, somewhat hirsute, thinly ciliate, upright. Corolla three times as long as the calyx, bell-shaped: claws upright, pale: borders obovate, rounded, spreading very much, yellow. Filaments connate at the base, smooth: interior toothless, equal. Anthers oblong, incumbent, yellow. Germ linear, hirsute. Styles hirsute with simple hairs. Stigma obscurely pencilled.

Native of the Cape of Good Hope, Madagascar, and Ceylon[b].

12. Root perennial, round, an inch in diameter, about eight inches long, having several heads, divided below into branching legs, full of clefts, covered with a double bark, the outer very thin, brownish ash-coloured, the inner two lines in thickness, red, watery, acrid; the substance of it is white, watery, acrid, having red fibres in it running from the centre to the circumference. Leaves radical, several. Petioles almost upright, three inches long. Leaflets subsessile, obcordate, scarcely half an inch in length, bright green above, beautiful violet underneath. Scapes almost upright, bearing several flowers in umbels, and the same length with the leaves. Calycine leaflets lanceolate, acute, erect. Corolla three times as long as the calyx, bell-shaped, yellow, marked below with three red lines on each petal.

Native of Peru, on mountains. This species is singular for the great size of the root, whence its trivial name. The heads of it resemble so many sufruticose stems[c].

13. Bulb deep in the ground. Stipe standing out, villose, having one or two scales, about an inch in length, terminating in an umbel of leaves and scapes. Leaves several. Petiole from a wider base, but not jointed, rough-haired, about an inch in length. Leaflets subsessile, obcordate, greater in breadth than length, a little ciliate, above green with a circle of red, and rough with white hairs, tomentose underneath, purple or silvered, or silvery-purple. Scapes several, rough-haired, umbelliferous, erect, twice as long as the leaves. Peduncles from two to five, one-flowered, the middle ones shorter, drooping, each supported at the origin with two ovate, rough-haired little bractes. Calycine leaflets lanceolate, acute, rough-haired, ciliate. Corolla twice as long as the calyx, yellow. Filaments so very slightly connate at the base as to be almost free, smooth: interior toothletted, equal. Anthers incumbent. Germ long, hirsute. Styles hirsute with simple hairs.—Native of the Cape of Good Hope[d].

14. Bulb roundish-ovate, covered with a black coat, the size of a hazel nut or less, very prolific, consisting of whitish fleshy scales, and having one or two red lines running through them. Stipes several, from the base of the bulb between the scales, subterraneous, round, slender, smooth, white, destitute of scales, each ending in a single leaf or scape. Leaves several. Petiole not jointed, round, thinly hairy, green, frequently purple at bottom, almost upright, weak, from three to six inches in length. Leaflets on very short petioles, very widely obcordate, somewhat villose at the edge, on both sides smoothish, dotted and green, three quarters of an inch in length. Scapes similar to the petioles, simply umbelliferous, or first bifid with a one-flowered peduncle in the division, and then umbelled on both sides. Involucre one-leafed and bifid; segments lanceolate, acute, opposite, smooth, rose-coloured. Peduncles from three to nine, jointed at the base, round, somewhat hairy, half an inch long or more; with little bractes at bottom almost opposite and somewhat villose. Calycine leaflets lanceolate, sharpish, upright, ciliate, somewhat hirsute, pale green, having two, sometimes, but seldom, only one oblong, orange-coloured callus. Corolla three times as long as the calyx, bell-shaped; claws yellowish; borders obovate, rounded, violet-purple, striated, spreading very much. Filaments united at the base: interior gibbosely toothletted equal, very hirsute with simple hairs: outer smooth. Anthers oblong, incumbent, whitish. Germ oblong, pale green, hirsute. Styles somewhat hirsute with simple hairs.—The bulb sometimes produces fleshy roots, the thickness of a finger. The stipes may be considered as nothing but the lower part of the petioles and scapes, and then this species has no stipe.

Native of Virginia[e]. Introduced in 1772, by Samuel Martin, M. D. It flowers in may and june[f]; Jacquin says, the whole summer.

15. Bulb ovate-triangular, even. Stipe subterraneous, terminated by an umbel of leaves and scapes. Leaves several. Petiole jointed at the base, channelled, smooth, from two to three inches in length. Leaflets obcordate, sessile, green above, bright purple underneath, a third part of an inch in length; lobes oblong, rounded. Scapes several, smooth, erect, slender, half a foot in length, umbelliferous. Leaflets of the involucre few, acute, minute, smooth. Peduncles from two to four, one-flowered, somewhat villose, erect, about an inch in length. Calycine leaflets lanceolate-oblong, sharpish, striated, smooth, ciliated a little towards the tip, green with red edges, and having a yellow callus underneath at the tip. Corolla three times as long as the calyx: borders oblong, blunt, crenulate, spreading, blue or flesh-coloured. Filaments connate at the base: interior gibbosely toothletted, unequal, hirsute with simple hairs, but the toothlets are smooth: exterior equal, hirsute as well as the others. Anthers incumbent, yellow. Styles hirsute.

Native of the Cape of Good Hope[g]. The next species is considered as the *caprina*, in the generality of the European gardens, and is perhaps the caprina of Linneus; but this is the *caprina* of Thunberg and Jacquin.

16. Bulb acuminate-ovate, smooth, covered with a brown coat, the largest nine lines in length. Stipe standing out, sometimes only a very little, sometimes an inch or two, often procumbent, round, the thickness of a pigeon's quill, smooth, having a few scales, terminated by an umbel of leaves and flowers; the longer one putting forth also other umbels that are leafy, and at the same time bulbiferous: then without interruption it proceeds from the bulb, penetrates the ground in various directions, and forms either a radical filiform fibre, or a capillary one, some inches long, with fibrils, and generating little bulbs its whole length. Leaves several. Petiole jointed at the base, round, green, almost upright, from three to seven inches long. Leaflets subsessile, obcordate, wider than they are long, often slightly two-lobed, unspotted, from half to three quarters of an inch in length. Scapes few, jointed at the base, round, green, upright, often even a foot high, umbelliferous. Leaflets of the involucre several, lanceolate-linear, acute, short. Peduncles several, as far as seventeen, round, about half an inch long, somewhat villose. Calycine leaflets lanceolate, sharpish, upright, thinly hirsute, green with white edges. Corolla five times as long as the calyx, bell-shaped: claws upright, pale yellow: borders very wide, obovate, rounded, spreading very much, yellow. Filaments connate at the base: interior toothletted, smooth: exterior smooth.

[a] Linn. trans. vol. 2. 243.
[b] Jacquin.
[c] Jacquin from Feuill.
[d] Jacquin from Thunberg.
[e] Jacquin.
[f] Hort. kew.
[g] Jacquin from Thunberg.

Anthers

Anthers oblong, incumbent. Germ pale greeniſh yellow, hirſute. Styles hirſute with ſimple hairs.

Native of the Cape of Good Hope. Thunberg gave it the name of *cernua* from its drooping flowers[a].

17. Bulb oblong, half an inch long, covered with a brown ſtriated coat. Stipe under ground for an inch in length, then riſing above ground from one to four inches, round, ſmoothiſh, browniſh purple, more ſlender than a pigeon's quill, having a few ſcales, commonly leafleſs, except that it has now and then a ſingle leaf at top, almoſt upright or declining, terminated by an umbel of leaves and flowers. Leaves ſeveral, upright and ſpreading a little. Petiole jointed at the baſe, obſcurely hirſute when examined with a glaſs, from two to three inches in length. Leaflets ſubpetioled, two-lobed-obcordate, dotted on both ſides, above ſmooth and green, not ciliate at the edge, beneath of an elegant and very ſhining violet colour, a little hirſute when viewed with a magnifier, half an inch wide, and not ſo long. Scapes few, jointed at the baſe, one-flowered, round, a little hirſute, almoſt upright, a little longer than the leaves, with a pair of little bractes at the joint above the middle. Calycine leaflets oblong, ſharpiſh, green with red edges, hirſute there and on the back with capitate and ſimple hairs mixed, ſome but not all gaſhed above or below with a toothlet or two, marked below the tip with two oblong orange-coloured calluſes, erect. Corolla four times as long as the calyx, of a violet purple colour, more pale on the outſide, bell-ſhaped, ſpreading very much and wide at the top. Filaments connate at the baſe: interior toothletted, equal, hirſute with ſimple and capitate hairs, and having a ſmooth toothlet: exterior ſmooth. Anthers incumbent, yellow. Styles hirſute with capitate and ſimple hairs.

Native of the Cape of Good Hope. It flowers here in november[b].

18. Bulb ovate, half an inch long, covered with a brown ſtriated coat. Stipe partly ſubterraneous and from one to three inches long; partly ſtanding out two or three inches, round, nearly the thickneſs of a pigeon's quill, ſmooth, leafleſs, upright, terminating in an umbel of many leaves and fewer ſcapes, then elongated above this, and ending in another leafy umbel. Leaves ſeveral, ſpreading. Petiole jointed at the baſe, round, grooved in front, ſlender, ſparingly villoſe, livid with redneſs, about two inches long. Leaflets on very ſhort petioles, obcordate, almoſt half-lobed, dotted on both ſides, ſcarcely half an inch in length and breadth, above ſmooth and livid green, underneath of a very elegant and deep livid violet-colour, ſomewhat hirſute with very few white decumbent hairs. Scapes very few, frequently only one, very ſhortly jointed at the baſe, umbellately two-flowered, round, obſcurely villoſe, thicker and longer than the petioles, livid, ſpreading, with a pair of lanceolate, acute little bractes under the umbel. Pedicels an inch long, not jointed, ſomewhat villoſe, ſtraight, purpliſh, with two very minute oppoſite little bractes at the baſe of each. Calycine leaflets lanceolate, bluntiſh, green with purple edges, having both ſimple and capitate hairs at the edges and on the back, marked below the tip underneath with four oblong orange-coloured lines. Corolla four times as long as the calyx: claws erect, yelloweſh: borders rounded-wedge-ſhaped, ſpreading very much, fleſh-coloured, with the back on one ſide ſomewhat villoſe. Filaments connate at the baſe: interior toothletted, equal, hirſute with both ſimple and capitate hairs, and a few hairs to the toothlets: exterior ſmooth. Anthers oblong, incumbent, yellow. Germ pale green, ſomewhat hirſute at top. Styles hirſute with hairs of both ſorts.

Native of the Cape of Good Hope. It flowers with us in october and november[c].

19. Stipe ſubterraneous, terminating in an umbel of leaves and ſcapes. Leaves very many. Petiole linear, compreſſed-winged, unequal, ciliate, about an inch in length. Leaflets ſubſeſſile, obcordate, ciliate, ſmooth and green above, hirſute and whitiſh underneath, a third part of an inch in length. Scapes ſeveral, round, hirſute, *two*-flowered, erect, two inches long. Leaflets of the involucre two, oppoſite, lanceolate, acute, hirſute. Peduncles ſcarcely half an inch in length, hirſute, erect. Calycine leaflets lanceolate, acute, erect, hirſute. Corolla four times as long as the calyx, bell-ſhaped, yellow. Filaments connate at the baſe, ſmooth: interior toothletted, equal. Anthers oblong, incumbent. Germ hirſute, the length of the ſtamens. Styles hirſute with ſimple hairs.—Native of the Cape of Good Hope[d].

20. Bulb oblong. Stipe ſubterraneous, terminating in an umbel of leaves and ſcapes. Leaves very many. Petiole two or three inches long. Leaflets ſix or five, lanceolate, ſmooth, thick, ſucculent, quite entire, ſeſſile, green, diſpoſed in a ring. Scapes ſeveral, a ſpan in length, ſmooth, upright, umbelliferous. Peduncles ſeveral, drooping till the flowers open, and then upright. Calycine leaflets lanceolate, acute, erect. Corolla five times as long as the calyx, bell-ſhaped, yellow.

Native of the Cape of Good Hope[e]. Linnæus unites it with *cernua*, from which it is very different in the leaves[f].

21. Root fibrous, brown. Stipe ſtanding out, round, about the thickneſs of a pigeon's quill, from half an inch to ſix inches in height, obſcurely jointed below, variegated with red or brown and green, filled with a white pith, terminating in a cloſe umbel of leaves and flowers. Leaves numerous, abruptly pinnate, ſpreading. Rib hirſute, often ſmooth at top, from two to five inches long. Leaflets from eight to fifteen on both ſides, ſeſſile, oppoſite, oblong, very blunt with a ſmall innocuous point, moſt of them very ſmooth, but ſome thinly hairy underneath, quite entire, from two to four inches long, the younger ones yelloweſh green, the older glaucous above and purple beneath. Scapes very many, ſomewhat villoſe, almoſt upright, a little longer than the leaves, umbelliferous. Leaflets of the involucre ſeveral, awl-ſhaped, villoſe. Peduncles for the moſt part ſeven or eight, one-flowered, ſhort. Calycine leaflets lanceolate-acuminate, villoſe, upright. Corolla yellow. Filaments diſtinct, not connate, awl-ſhaped, toothleſs, hirſute with ſimple hairs, upright, five alternately three times as long as the others. Anthers incumbent. Germ ovate, ſomewhat hirſute at top. Styles of middling length, ſmooth. Stigmas bifid, not pencilled. The leaves contract on the ſlighteſt touch[g]: hence the trivial name. Capſule pentagon-ovate, five-celled, five-valved, opening at the angles. It is a very beautiful plant[h].

Native of Malabar, Ceylon, the Molucca iſlands, and other parts of the Eaſt Indies. In China and Cochinchina.

22. Bulb ovate, covered with a ferruginous ſhining coat, the ſize of a hazel nut. Stem round, hirſute, purple, ſlender, ſomewhat branched, from ſix to nine inches high, almoſt upright. Leaves ſubſeſſile, ſcattered, approximating, ſpreading very much, ternate. Leaflets ſubſeſſile, linear-wedge-ſhaped, blunt, quite entire or very ſlightly emarginate, dotted on both ſides, ciliate at the edges with minute villoſe hairs, ſmooth above, ſomewhat hirſute underneath with pale orange calluſes ſcattered without order, half an inch long. Peduncles not jointed at the baſe, axillary, ſolitary, round, villoſe, almoſt upright, alternate, two inches long, with little bractes generally alternate a little below the calyx. Calycine leaflets lanceolate, acute, ciliate, ſomewhat hirſute, pale green, upright. Claws of the corolla yellow within, dirty yellow on the outſide, villoſe when examined by a glaſs, upright, embracing each other ſo as to form a cylinder near an inch in length: borders oblong, blunt, ſpreading very much, red-purple, paler underneath, with one ſide yelloweſh, almoſt three times ſhorter than the claws. Filaments united at the baſe: interior toothleſs, equal. Anthers oblong, twin, erect, yellow. Germ oblong, villoſe at top, pale greeniſh yellow, callous. Styles remarkable for their length; whence the trivial name: all theſe parts are hirſute with ſimple hairs.

[a] Jacqu. from Thunb. [b] Jacquin. [c] Idem. [d] Jacqu. from Burm. [e] Idem. [f] Loureiro.

Native of the Cape of Good Hope. It flowers in Europe in october[1].

23. Bulb roundiſh, covered with a browniſh coat, the ſize of a hazel nut or larger. Stem round, very hirſute, almoſt all leafy, ſometimes but ſeldom having a ſingle branchlet, half a foot high, almoſt upright, weak, about half the thickneſs of a pigeon's quill. Leaves alternate, ſubſeſſile, ſpreading very much; ternate. Leaflets linear-lanceolate, ſharpiſh, quite entire, green on both ſides and dotted, ciliate with villoſe hairs at the edges, ſmooth above, underneath hirſute and without any conſpicuous calluſes, ſcarcely half an inch long. Peduncles not jointed at the baſe, axillary, ſolitary, round, hirſute, almoſt of the ſame thickneſs with the ſtem, two inches long, almoſt upright, alternate, pale, with little bractes approximately alternate below the calyx. Calycine leaflets lanceolate, ſharpiſh, ciliate, villoſe, pale green with blood-red edges, erect. Claws of the corolla yellow within, dirty without and villoſe, erect, forming a cylindric tube an inch long: borders obovate, ſharpiſh, ſpreading very much, leſs than half the length of the claws, red-purple within, a little paler on the outſide, with one ſide dirty yellow and ſomewhat villoſe. Filaments united, capillary, ſomewhat hirſute with ſimple hairs: interior toothleſs, unequal, very long: exterior alſo generally unequal. Anthers incumbent, yellow. Styles ſmooth.

Native of the Cape of Good Hope. It flowers in Europe in october and november[2].

24. Bulb roundiſh or ovate, from the ſize of a pea to that of a hazel nut, with the ſcales a little looſe, the outer ones brown, the inner whitiſh dotted with red. Stem round, villoſe, half the thickneſs of a pigeon's quill, upright, half a foot high, ſcaly at the baſe, either quite ſimple or branched from the axils of the leaves. Leaves alternate, on very ſhort petioles, approximating, ternate. Leaflets ſubſeſſile, wedge-ſhaped, rounded, emarginate, ciliated with villoſe hairs, ſmooth and dotted above, underneath hirſute with many ſcattered calluſes not very conſpicuous, half an inch long. Peduncles not jointed at the baſe, axillary, ſolitary, erect, alternate, villoſe, pale green, half an inch long, with alternate, approximating bractes below the calyx. Calycine leaflets oblong, ſharpiſh, erect, ciliate, hirſute, green with two orange-coloured lines deſcending from the tip. Claws of the corolla three times as long as the calyx, erect, yellow within, of a pale dirty yellow and villoſe on the outſide, forming a cylindric tube: borders obovate, rounded, ſpreading very much, about half the length of the claws, purpliſh-roſe-colour within, paler on the outſide, and a little villoſe on one ſide. Filaments connate, hirſute with a few ſhort villoſe hairs: the interior ones toothleſs and equal. Anthers incumbent, yellow. Germ oblong, pale greeniſh yellow with orange ſtreaks, hirſute at top. Styles ſomewhat villoſe.

Native of the Cape of Good Hope. In Europe it flowers in ſeptember and october[3].

25. Bulb roundiſh, covered with a brown coat, larger than a hazel nut. Stem round, the thickneſs of a pigeon's quill, extremely villoſe, browniſh, only at bottom ſcaly and leafleſs, weak, about a foot high, upright for ſome inches and then more or leſs reclining, from moſt of the leaves below the flowers increaſed by axillary erect branchlets, that grow to half a foot in length, but ſcarcely ever bear flowers. Leaves alternate, approximating, on very ſhort petioles, ternate. Leaflets ſubſeſſile, wedge-ſhaped, blunt, on account of their reflex tip ſeeming to be emarginate, green on both ſides, and appearing dotted by a magnifier, ciliated with villoſe hairs at the edge, ſmooth above, beneath ſomewhat hirſute and having very many ſcattered calluſes of a dirty orange colour, hardly viſible without a glaſs, ſcarcely half an inch in length. Peduncles not jointed at the baſe, axillary, ſolitary, round, villoſe, the length of the leaves, erect, with oppoſite bractes immediately under the calyx. Calycine leaflets lanceolate, acute, ciliate, villoſe, pale green, erect. Corolla red-violet: claws erect, villoſe on the outſide, forming a cylindric tube an inch in length: borders obovate, rounded, ſmooth, ſpreading very much, one third only of the length of the claws. Filaments connate, ſmooth: interior toothleſs, unequal. Anthers oblong, bifid at the baſe, erect, yellow. Germ ſlender, ſmooth, pale greeniſh yellow, callous. Styles hirſute with ſimple hairs thinly ſet.

Native of the Cape of Good Hope. It flowers in Europe in october and november[4].

26. Bulb roundiſh, covered with a brown coat, the ſize of a hazel nut. Stem round, ſlender, ſmooth at bottom, the reſt villoſe, about eight inches in length, purpliſh brown, weak, flaccid, hence it is ſometimes almoſt upright, ſometimes decumbent or aſcending, putting forth from the axils branchlets that ſeldom flower. Leaves alternate, on very ſhort petioles or ſubſeſſile, ternate. Leaflets wedge-ſhaped, ſubſeſſile, blunt, quite entire or very ſlightly emarginate, villoſe at the edges, ſmooth on the upper ſurface, hirſute at the back, having very many ſcattered yelloviſh calluſes viſible with a glaſs, about half an inch in length. Peduncles not jointed at the baſe, axillary, ſolitary, alternate, filiform, ſomewhat villoſe, pale purple, two inches long, ſpreading, flaccid; with alternate bractes above the middle. Calycine leaflets lanceolate, acuminate, ſomewhat villoſe, erect, pale purple. Corolla ſeveral times larger than the calyx: claws erect, yellow: borders wedge-ſhaped, rounded, longer than the claws, ſpreading very much, ſmooth, pale purple. Filaments connate: interior toothleſs, equal, ſomewhat hirſute with little capitate hairs: exterior ſmooth. Anthers incumbent, yellow. Germ very ſhort, pale greeniſh yellow, hirſute at top, callous. Styles very hirſute with ſimple hairs.

Native of the Cape of Good Hope. It flowers in Europe in ſeptember and october.—This ſpecies is remarkably rough in its wild ſtate, but puts off much of its roughneſs when cultivated[5].

27. Bulb roundiſh, with a brown ſkin, the ſize of a hazel nut. Stem round, hirſute, commonly undivided, almoſt upright, weak, ſlender, greeniſh, about eight inches long, ſcaly at the baſe. Leaves alternate, on very ſhort petioles, ternate. Leaflets narrow lanceolate, ſharpiſh, quite entire, ſcarcely dotted, green on both ſides, ſmooth above, ſomewhat hirſute underneath and having numerous minute yelloviſh-brown calluſes diſcoverable with the microſcope, villoſe at the edges, ſubſeſſile, reflex and ſpreading very much, half an inch long or a little more. Peduncles not jointed at the baſe, axillary, ſolitary, alternate, roundiſh, villoſe, pale, flaccid, four inches long, having alternate bractes at top. Calycine leaflets lanceolate, bluntiſh, hirſute, ciliate, almoſt upright, pale green, ſometimes without any ſpots, ſometimes having orange-coloured ſpots both above and below, and a ſingle browniſh ſpot on each ſide at the edges. Corolla four or five times as long as the calyx: claws erect, yelloviſh, the length of the calyx: borders obovate, rounded, wide, ſpreading very much, very pale violet within, on the outſide pale with one ſide dirty yellow and ſomewhat villoſe. Filaments connate: interior gibbous-toothletted, thinly hirſute with capitate hairs; exterior alſo hirſute. Anthers incumbent, yellow. Styles hirſute with ſimple hairs.

Native of the Cape of Good Hope. In Europe it flowers in october and november[6].

28. Bulb roundiſh, larger than a hazel nut, with a browniſh ſkin, compoſed of fleſhy, very thick, ovate-acuminate, looſe ſcales, forming as it were ſo many bulbs; hence lobed. Stem round, almoſt upright, weak, ſomewhat villoſe, browniſh purple, from the thickneſs of a pigeon's quill to only half the ſize, from ſix inches to a foot in height, branched. Leaves alternate, ternate, ſpreading very much, numerous, ſubſeſſile. Leaflets alſo ſubſeſſile, blunt, quite entire, appearing to be emarginate on account of the middle tip being reflexed, hirſute underneath and at the edges, ſmooth above, half an inch long to a quarter. Peduncles axillary, ſolitary, jointed at the baſe, round,

[1] Jacquin. [2] Idem. [3] Idem. [4] Idem. [5] Idem. [6] Idem.

villose, flaccid, from two to three inches long, slender, pale, with alternate bractes at top. Calycine leaflets lanceolate, acute, hirsute, ciliate, erect, green with white edges. Corolla five times as long as the calyx: claws erect, yellow, twice as long as the calyx: borders obovate, blunt, wide, spreading very much, violet verging either to purple or blue, with the back on one side yellow and villose. Filaments united at the base: interior toothless, unequal; exterior equal. Anthers oblong, incumbent, yellow. Germ pale green, very hirsute at top, callous. All these parts hirsute with simple hairs.

Native of the Cape of Good Hope. In Europe it flowers in october and november.—A very large specimen is figured in Jacquin's rare plants, as a variety of *O. hirta*, in his *Monographia* it is represented smaller and more branched [1].

29. Bulb ovate, acute, the size of a hazel nut, with a ferruginous skin, loose. Stem round, slender, somewhat hirsute, fleshy, weak: so that it is seldom really upright, scaly at the base, brownish purple, about half a foot high. Leaves alternate, ternate, the lower on short petioles, the rest subsessile. Leaflets subsessile, subcuneiform, rounded, quite entire, a little converging, smooth above, underneath and at the edges somewhat rough-haired, half an inch long. Peduncles axillary, solitary, very shortly jointed at the base, round, somewhat villose, flaccid, pale, about two inches long, with alternate bractes at top. Calycine leaflets lanceolate, acute, ciliate, hirsute, erect, green with the edges purple at bottom. Corolla several times longer than the calyx: claws erect, twice as long as the calyx, yellow: borders obovate, rounded, spreading very much, purple above, underneath pale purple with one side yellow and somewhat villose. Filaments connate at the base: interior toothless, unequal, hirsute with capitate hairs; exterior smooth. Anthers oblong, incumbent, yellow. Germ pale green, hirsute at top, callous. Styles hirsute with simple hairs.

Native of the Cape of Good Hope. In Europe it flowers from october to december [2].

Jacquin at first took this for *O. hirta*, and it is figured under that name in his rare plants, with larger leaves and flowers. Another specimen is figured in his *monographia*.

30. Bulb roundish or ovate, with a brown skin, less than a hazel nut. Stem round, slender, very hirsute, leafless to the middle, with minute wandering scales, sometimes but very seldom having an axillary flowering branchlet at top, weak, prostrate, rising up towards the top, from six inches to near a foot in height. Leaves on very short petioles, alternate, ternate, the upper ones collected into a close hoary rose. Leaflets subsessile, lanceolate, acute, quite entire, from reflex spreading very much, green, ciliate at the edges with villose hairs, smooth above, underneath dotted, rough-haired, having many obscure calluses visible by a glass, half an inch long, but in some individuals scarcely three lines in length. Peduncles not jointed at the base, axillary, solitary, very villose, flaccid, an inch and half long, with alternate, approximating bractes at top. Calycine leaflets lanceolate, acute, ciliate, villose, pale green, erect. Corolla several times longer than the calyx. Claws upright, almost twice as long as the calyx, yellow: borders wide, obovate, rounded with a small point stretched out, spreading very much, deep red within, on the outside paler red, with one side at the back yellow and somewhat villose. Filaments united at the base: interior unequal, hirsute with simple hairs; the toothlets smooth: exterior hirsute also with simple hairs. Anthers incumbent, yellow. Styles hirsute with simple hairs.

Native of the Cape of Good Hope. In Europe it flowers from september to november. This species is easily distinguished from all the rest by having its leaves at the ends of the stem and branches very closely collected into a form like a double rose, spreading and very hoary [3].

31. Bulb elongated ovate, half an inch long or more, covered with a brown skin, putting forth a long thick fibre from the base. Stem round, the thickness of a pigeon's quill, smooth, pale green or dirty purple, half a foot long or more, almost upright at the base, then reclining and ascending, branched at the base, having distant scales at bottom, in other parts leafy, at all the scales and leaves jointed. Leaves alternate, distich, smooth, ternate. Petiole jointed at the base, round, very slender, spreading, from one to two inches in length, each joint winged with a large embracing white pellucid very converging stipule, a little connate above, perforated, obcordate if it burst so as to be expanded. Leaflets obcordate, appearing dotted on both sides when examined by a glass, green, on very short petioles, scarcely half an inch in length, all equal. Peduncles jointed at the base, axillary, solitary, alternate, round, smooth, spreading, about the same length with the leaves, with opposite bractes directly under the calyx. Calycine leaflets smooth, oblong, blunt, pale green with white edges, spreading. Corolla smooth, three times as long as the calyx, dirty yellow within, pale yellow on the outside: petals obovate, rounded, wide, spreading very much at top. Filaments connate at the base, smooth: interior toothletted, equal, converging at top. Anthers oblong, incumbent at their origin, upright, yellow. Germ ovate, five-grooved, smooth at bottom, hirsute with club-shaped hairs at top. Styles smooth. Seeds solitary.

Native of the Cape of Good Hope. In Europe it flowers in december and january [4].

32. Bulb ovate, acute, the size of a pea, often several inclosed in one brown skin. Stem filiform, weak, an inch or a little more in length, round, appearing villose when magnified. Leaves alternate, ternate, almost upright, at bottom few, at top several approximating. Petiole jointed at the base, round, slender, somewhat villose, one or two inches in length. Leaflets subsessile, villose at the edges, smoothish on both sides with minute dots appearing pellucid in the light, three or four inches long. Peduncles axillary, solitary, jointed at the base, round, somewhat villose, upright, longer than the leaves, with bractes alternate at top. Calycine leaflets lanceolate, acute, ciliate, hirsute, erect, green with white edges, and oblong orange-coloured calluses below the tip. Corolla five times as long as the calyx, smooth: claws short, upright, yellow: borders obovate, rounded, spreading very much, very pale violet on both sides. Filaments united at the base: interior unequal, somewhat hirsute with a few capitate hairs: exterior equal, hirsute in like manner. Anthers oblong, incumbent, yellow. Germ oblong, pale yellowish green, with hairs and orange calluses at top. Styles very short, densely hirsute with capitate hairs.

Native of the Cape of Good Hope. In Europe flowering in november and december. This and the following species connect the caulescent with the stemless *Oxalides* [5].

33. Bulb roundish, about the size of a hazel nut, with a black hard skin, and commonly a double nucleus, putting forth a slender white jointed root, with a scale at each joint, having fibres on every side, here and there bulbiferous, creeping horizontally, from one to six inches in length. Stem round, the thickness of a pigeon's quill, somewhat villose, upright, below the leaves scaly and about an inch long, and then two or three inches more in length. Leaves alternate, ternate. Petiole jointed at the base, round, villose, weak, red or green, from three to six inches long. Leaflets sessile, slightly emarginate, appearing dotted with a magnifier on both sides, somewhat villose at the edges and along the dorsal nerve, in other parts smooth, green, but when old variegated with red and yellow. Scapes axillary, jointed at the base, round, somewhat villose, red, flaccid, the length of the leaves, with alternate green bractes below the middle. Calycine leaflets oblong, sharpish, ciliate, hirsute, erect, green. Corolla six times as long as the calyx: claws upright, twice as long as the calyx, yellowish: borders obovate, rounded, wide, spreading very much, pale

[1] Jacquin monogr. [2] Idem. [3] Idem. [4] Jacquin. [5] Idem.

with

with a bluſh of purple, ſomewhat villoſe at the back on one ſide. Filaments united at the baſe: interior equal, with capitate hairs thinly ſcattered over them, and the toothlets alſo hirſute; as are likewiſe the exterior ones. Anthers oblong, incumbent, yellow. Germ oblong, pale green, villoſe at top. Styles very ſhort, very hirſute with ſimple hairs.

Native of the Cape of Good Hope. In Europe it flowers in november and december.

This ſpecies increaſes abundantly by its creeping roots generating many bulbs in their courſe, ſo that the pots are in a ſhort time full of plants, all thus cauleſcent. Theſe numerous plants have flowered only once in four years that they have been cultivated [a].

34. Bulb roundiſh, twice as large as a pea, half looſe, with a ſoft compreſſile ſkin, lanuginoſe as it were, and of a browniſh ſtraw-colour. Stipe ſubterraneous, from a line to an inch in length, having a few ſcales at top, terminating in an umbel of a few leaves and flowers. Leaves few, upright or decumbent, ovate, obovate or oblong, emarginate or quite entire, green on both ſides, and appearing dotted in the microſcope, hirſute at the edges and on the midrib with capitate hairs, in other parts ſmooth, about an inch long; on a petiole of the ſame length, hirſute with capitate hairs, ſhortly jointed below the leaf, as it is at the baſe. Scapes from one to four, not jointed at the baſe, weak, hirſute with capitate hairs, longer than the leaves, yelloviſh green, without bractes. Calycine leaflets oblong, bluntiſh, erect, hirſute with capitate hairs and ciliate, pale green at bottom, variegated at top with blood-red ſpots and orange dots, whitiſh at the edges. Corolla ſix times as long as the calyx, bell-ſhaped: claws upright, villoſe, yellow: borders obovate, rounded, pale purple, with the back on one ſide villoſe. Filaments connate: interior gibbouſly toothletted, unequal, hirſute with capitate hairs: exterior equal, the ſhorteſt of all the ſpecies, ſmooth. Anthers oblong, incumbent, yellow. Germ roundiſh, pale green, capitately hirſute at top. Styles pale, hirſute with capitate hairs.

This and the two next ſpecies are ſo alike in habit, leaves, bulb and flowers, that they can ſcarcely be diſtinguiſhed. But the genitals are very different. Beſides the length of the ſtyles, in this the interior filaments are gibbouſly toothletted and unequal, the exterior extremely ſhort. In *O. monophylla* the filaments are toothleſs and equal. They are ſo alſo in *O. reflexa*, but in this they are ſingularly beaked at the tip, in which it differs from all the other ſpecies [b].

35. Bulb roundiſh. Stipe ſhort. Leaves ſpreading, from oblong obovate, almoſt entire, half an inch long, jointed below the leaf, but not at the baſe. Scapes few, rather longly jointed at the baſe. Filaments very ſhortly connate at the baſe, ſmooth. In other reſpects it agrees with the preceding, except in the differences pointed out above [c].

36. Stipe from a line to an inch in length. Leaves erect or decumbent, as in n. 34. jointed below the leaf, not at the baſe. Scapes from one to four, rather longly jointed at the baſe, weak. Calycine leaflets as in n. 34. Corolla alſo as in that. Interior filaments at the top blunt and club-ſhaped, on the ſide at top putting forth a beak, which is ſmooth, the other parts hirſute with capitate hairs: exterior, awl-ſhaped, almoſt ſmooth. Anthers faſtened to the beaks of the interior and tips of the exterior filaments. Styles very ſmooth. In other reſpects it agrees with the two preceding, except in the differences pointed out above [d].

37. Bulb roundiſh, with a brown ſkin, the ſize of a hazel nut, often looſe. Stipe partly ſubterraneous, about an inch long, and then ſtanding out, ſhorter, ſcaly, leafleſs, browniſh, the thickneſs of a pigeon's quill, upright, terminated by a thin umbel of leaves and flowers. Leaves few, generally three, upright, wholly ſmooth. Petiole jointed at the baſe, thick, half round, more or leſs purple, an inch and half long, widely winged. Leaflets ſeſſile, erect, very blunt, emarginated, dotted on both ſides, on the edges and along the wings cartilaginous-crenulate, curled and rigid, underneath ſometimes blood-red, from two to three inches long. Scapes few, jointed at the baſe, compreſſed a little, ſhining, thick, pale green, almoſt upright, half a foot high, with alternate, approximating bractes a little below the flower. Calycine leaflets ovate, ſharpiſh, ſmooth, green, upright with the tips ſpreading. Corolla five times as large as the calyx: claws erect, yellow: borders wide, rounded, ſpreading very much, the length of the claws, white with the back on one ſide obſcurely yelloviſh red. Filaments connate at the baſe: interior toothletted, equal, hirſute with capitate hairs; the toothlets ſmooth: exterior wholly ſmooth. Anthers incumbent, yellow. Germ ovate, ſmooth, pale green. Styles very long, hirſute with capitate hairs. This has ſometimes one or two ſimple leaves, but they are never ternate. In ſome individuals the leaflets are much ſmaller, and ſcarcely an inch in length [e].

38. Bulb ovate, with a brown ſkin, the ſize of a hazel nut. Stipe partly ſubterraneous, about an inch long, ſcaly, then ſtanding out, ſhorter, ſcaly, leafleſs, almoſt upright, terminated by an umbel of leaves and flowers. Leaves ſeveral, erect, ſmooth, very ſeldom ſimple, never ternate. Petiole jointed at the baſe, half round, about two inches long, winged. Leaflets bluntiſh, quite entire, or very ſeldom ſlightly emarginate, from two to three inches long, green on both ſides, appearing dotted in the microſcope, along the edges together with the wings cartilaginous-crenulate, erect. Scapes few, jointed at the baſe, roundiſh, longer than the leaves, pale green, ſmooth, almoſt upright but weak, with alternate bractes above the middle. Calycine leaflets lanceolate, ſharpiſh, ſmooth, erect, green. Corolla four times as long as the calyx: claws erect, yellow; borders wide, obovate, rounded, ſpreading very much, yellow on both ſides. Filaments united at the baſe: interior toothletted, equal, hirſute with capitate hairs, with ſmooth toothlets: exterior ſmooth. Anthers incumbent, yellow. Germ oblong, pale greeniſh yellow, very ſmooth. Styles hirſute with capitate hairs [f]. It has the trivial name from its long binate leaflets, reſembling aſſes ears.

39. Bulb roundiſh, pale *fleſh*-colour, with a brown ſkin, the ſize of a hazel nut. Stipe, the part underground about an inch, above ſhorter, ſcaly, leafleſs, browniſh, almoſt upright, terminated by a thin umbel of leaves and flowers. Leaves few, commonly two only, upright, ſmooth, very ſeldom ſimple, never ternate. Petiole jointed at the baſe, half round, about two inches long, always winged, but the wings ſometimes ſo narrow as to be ſcarcely conſpicuous. Leaflets blunt, quite entire or ſlightly emarginate, from one to two inches in length, appearing in the microſcope dotted on both ſides, green, cartilaginous-crenate on the edges and wings, erect. Scapes few, jointed at the baſe, longer than the leaves, roundiſh, pale green, almoſt upright, ſmooth, with approximately alternate bractes a little below the flower. Calycine leaflets ovate, ſharpiſh, ſmooth, erect with the tips ſlightly ſpreading, green. Corolla four times as long as the calyx: claws erect, yellow: borders wide, rounded, ſpreading very much, the length of the claws, white with the back on one ſide reddiſh. Filaments connate at the baſe: interior equal, hirſute with capitate hairs; toothlets ſmooth: exterior ſmooth. Anthers incumbent, whitiſh. Germ ovate, pale green, very ſmooth. Styles hirſute with capitate hairs [g]. It has the trivial name from the binate leaves reſembling a hare's ear.

40. Bulb ovate, ſmaller than a hazel nut; covered with a brown ſkin. Stipe ſubterraneous, one or two inches long, almoſt the thickneſs of a pigeon's quill, having a few ſcales at top, and being bulb-bearing at bottom, terminating in an umbel of leaves and a few flowers. Leaves ſeveral, the lower ones binate, the reſt ternate, almoſt upright. Petiole jointed at the baſe and purpliſh, half round, ſmooth, more or leſs wingred, about two inches long, with the wings cartilaginous-ſcabrous at the edges. Leaflets lanceolate,

[a] Jacquin. [b] Idem. [c] Idem. [d] Idem. [e] Idem. [f] Idem. [g] Idem.

ſharpiſh,

ſharpiſh, ſeſſile, cartilaginous-ſcabrous at the edges, ſmooth on both ſides, glaucous green, blood-red underneath on the midrib, an inch and half or two inches long. Scapes few, not jointed at the baſe, round, ſmooth, weak, almoſt as long as the leaves, pale green, with a ſingle bracte at bottom not jointed. Calycine leaflets lanceolate, acute, ſmooth, upright, pale green with a tinge of red. Corolla four times as long as the calyx, bell-ſhaped, yellow: claws erect, a little longer than the calyx: borders obovate, rounded, quite entire, ſpreading very much. Filaments very ſlightly united at the baſe, ſmooth, membranaceous-compreſſed: interior toothleſs, equal. Anthers oval, incumbent, pale. Germ ovate, ſmooth, pale green, red at top. Styles ſomewhat villoſe with very ſhort thin-ſpread hairs [a].

41. Bulb roundiſh, with a brown ſkin, the ſize of a hazel nut, often looſe. Stipe about an inch, partly under ground, partly above, ſcaly, leafleſs, nearly as thick as a reed at top, almoſt upright, terminated by a thin umbel of leaves and flowers. Leaves few, upright, wholly ſmooth. Petiole jointed at the baſe, thick, half round, purpliſh, an inch and half long. Leaflets ſeſſile, erect, obovate or almoſt oblong, blunt, often emarginate, flat not waved, cartilaginous-toothed at the edges, appearing dotted on both ſides in the microſcope, green, two inches and a half long, and almoſt an inch and half wide. Scapes few, jointed at the baſe, compreſſed, thickiſh, longer than the leaves, almoſt erect, with approximately alternate bractes. Calycine leaflets ovate, bluntiſh, green with purpliſh edges, ſmooth, erect with the tips ſpreading a little. Corolla ſeveral times longer than the calyx: claws erect, pale yellow: borders wide, rounded, ſpreading very much, yellow within, pale yellow on the outſide. Filaments connate at the baſe: interior toothletted, equal, very hirſute with capitate hairs, but the toothlets ſmooth: exterior hirſute in the ſame manner. Anthers incumbent, yellow. Germ ovate, ſmooth, pale green. Styles of a middling length, very hirſute with capitate hairs [b].

42. Bulb ovate, with a blackiſh-brown ſkin the ſize of a hazel nut. Stipe ſubterraneous, round, white, almoſt as thick as a pigeon's quill, about an inch in length, terminated by a thin umbel of leaves and flowers. Leaves few, ſpreading. Petiole jointed at the baſe, half round, thick, hirſute, blood-red, about two inches long. Leaflets blunt, villoſe at the edges, green and ſomewhat villoſe on the upper ſurface, dotted at the back, ſmooth except the nerve, which is hirſute, paler green or elſe more or leſs blood-red, about an inch and half in length, ſeſſile, quite entire. Scapes few, jointed at the baſe, compreſſed, erect, whitiſh, ſomewhat villoſe, the length of the petioles or ſometimes much longer, with bractes approximately alternate below the middle. Calycine leaflets lanceolate, acute, ſomewhat hirſute, ciliate with capitate and ſimple hairs mixed, pale green with blood-red edges, and the tip ſoot-coloured, erect. Corolla ſeveral times longer than the calyx, yellow on both ſides, but paler without: claws erect, ſomewhat villoſe: borders wedge-ſhaped, rounded, the length of the claws, ſpreading very much, a little villoſe on one ſide of the back. Filaments connate at the baſe: interior toothletted, equal, hirſute with capitate hairs, but the toothlets ſmooth: exterior ſmooth. Anthers incumbent, yellow. Germ oblong, hirſute at top, pale green, callous. Styles very hirſute with the upper hairs capitate and the reſt ſimple [c].

43. Bulb ovate, minute, with a blackiſh brown ſkin, looſe. Stipe ſubterraneous, an inch long, of a dirty whitiſh colour, nearly as thick as a pigeon's quill, terminated by a thin umbel of leaves and flowers. Leaflets few, ſometimes no more than two, almoſt upright or ſpreading a little. Petiole jointed at the baſe, compreſſed a little, from two to three inches in length, ſomewhat hirſute, blood-red. Leaflets ſeſſile, bluntiſh, villoſe at the edges, dotted on both ſides, green and ſomewhat hirſute above, underneath ſmooth with the nerve only a little rough-haired, ſhining and of a dark blood-red colour, the lateral ones an inch long. Scapes few, jointed at the baſe, roundiſh, villoſe, white, almoſt upright, the length of the leaves, with bractes approximately alternate below the middle. Calycine leaflets lanceolate-ovate, ſharpiſh, ciliate, hirſute, upright, purple. Corolla ſeveral times larger than the calyx, yellow, paler on the outſide: claws upright, three times as long as the calyx, villoſe: borders rounded, broad-wedge-ſhaped, ſpreading very much, the length of the claws, villoſe at the back on one ſide. Filaments united at the baſe: interior toothletted, equal, hirſute with very ſhort ſimple hairs; toothlets ſmooth: exterior ſmooth. Anthers incumbent, yellow. Germ oblong, pale green, hirſute at top, callous. Styles hirſute with ſimple hairs [d].

44. Stipe ſubterraneous, terminating in a poor umbel of leaves and flowers. Leaves few, minute, wholly ſmooth. Petiole filiform, the third part of an inch in length. Leaflets quite entire. Scape ſingle, half an inch long, ſmooth, upright, with very ſmall ſmooth bractes, approximately alternate below the flower. Calycine leaflets lanceolate, ſharpiſh, ſmooth, upright. Corolla five times as long as the calyx, bell-ſhaped, ſmooth: claws upright, yellowiſh: borders obovate, rounded, white. Filaments united at the baſe, ſmooth: interior equal. Anthers oblong, incumbent. Germ oblong, ſmooth, ſhort. Styles hirſute with ſimple hairs [e].

45. Bulb ovate, the ſize of a hazel nut, with a black ſkin. Stipe out of the ground, having a few ſcales and one or two leaves, round, villoſe, often ſmooth at bottom, ſlender, weak, almoſt upright, terminated by a denſe umbel of leaves and flowers. Leaves ſeveral, upright and ſpreading very much. Petiole widening at the baſe, ciliate, orange-ſpotted at the edges underneath, not jointed, ſlender, hirſute, from two lines to two inches and a half in length. All the leaflets exactly oblong, on very ſhort petioles, quite entire or ſlightly emarginate, green and in the microſcope appearing dotted on both ſides, ſomewhat villoſe at the edges and underneath, ſmooth above, about half an inch in length. Scapes ſeveral, not jointed at the baſe, ſlender, upright, ſomewhat hirſute, longer than the leaves; bractes ſubalternate, directly under the calyx. Calycine leaflets long lanceolate, ſharp, villoſe, ciliate, green, upright. Corolla four times as long as the calyx: claws upright, yellow, tubular: borders wedge-ſhaped, rounded, ſpreading very much, almoſt the length of the claws, red with one ſide of the back paler and ſomewhat villoſe. Filaments connate at the baſe: interior equal. Anthers incumbent, yellow. Germ oval, pale green, hirſute all over, callous. All theſe parts are hirſute with very minute capitate hairs [f].

46. Bulb ovate, ſlender, with a blackiſh-brown ſkin, almoſt an inch in length. Stipe out of ground, round, almoſt half the thickneſs of a pigeon's quill, having a few ſcales but no leaves, hirſute, browniſh-green, three or four inches long, procumbent, terminated by an umbel of leaves and flowers. Leaves very many, ſpreading. Petiole jointed at the baſe, ſlender, dirty purple, round, hirſute, about an inch long. Leaflets ſubſeſſile, flat, villoſely ciliate at the edges, ſmooth above, villoſe underneath, appearing in the microſcope dotted on both ſides, recurved, an inch long. Scapes ſeveral, jointed at the baſe, round, villoſe, upright, purpliſh, about the ſame length with the petioles, with bractes extremely minute, and directly under the calyx. Calycine leaflets lanceolate-acute, hirſute, ciliate, upright, pale green. Corolla four times as long as the calyx: claws forming a long tube, upright, ſomewhat villoſe, dirty yellow: borders lanceolate, bluntiſh, ſomewhat villoſe on the outſide, ſhorter than the claws, ſpreading very much, red. Filaments united at the baſe: interior toothleſs, unequal, a little hirſute with a few ſlightly capitated hairs: exterior unequal, hirſute in like manner. Anthers twin, oval, upright, yellow. Germ pale green, thinly hirſute at top. Styles wholly ſmooth [g].

[a] Jacquin. [b] Idem. [c] Idem. [d] Idem. [e] Jacquin from Thunberg. [f] Idem. [g] Jacquin.

47. Bulb ovate, with a blackiſh-brown ſkin, ſmaller than a hazel nut. Stipe out of the ground, round, ſlender, having a few ſcales but ſeldom any leaves, ſometimes a ſingle leaflet at top, hirſute, brown, from four to ſeven inches long, at firſt upright, but by age becoming wholly procumbent, terminated by a cloſiſh umbel of leaves and flowers, and ſometimes, but rarely, lengthened out into another umbel. Leaves ſeveral, almoſt upright. Petiole widened at the baſe, not jointed, ſlender, purpliſh, hirſute, about an inch long. Leaflets ſubſeſſile, quite entire or ſlightly emarginate, villoſe at the edges, appearing in the microſcope dotted on both ſides, green, ſmooth above, ſomewhat villoſe underneath, three quarters of an inch long. Scapes ſeveral, not jointed at the baſe, round, villoſe, upright, purpliſh, about the ſame length with the petioles; bractes approximately alternate a little way below the calyx. Calycine leaflets lanceolate, acute, erect, ciliate, villoſe, purpliſh. Corolla ſeveral times longer than the calyx: claws ſomewhat villoſe, dirty yellow, upright, forming long tubes: borders lanceolate, bluntiſh, ſhorter than the claws, ſomewhat villoſe on the outſide, ſpreading very much, purpliſh. Filaments connate at the baſe: interior unequal, ſmooth: exterior ſmooth. Anthers upright, yellow. Germ oblong, yelloviſh green, ſomewhat hirſute at top. Styles ſtanding out as far as the middle of the borders of the corolla, hirſute at the baſe and towards the tip with a very few ſimple hairs[g].

48. Bulb roundiſh, the ſize of a hazel nut, covered with a brown ſkin, ſometimes looſe. Stipe ſtanding out, filiform, browniſh, ſmooth, about half a foot long, very weak and wholly proſtrate, at bottom leafleſs with a few ſcales, above having ſolitary leaves and frequently an umbel, terminating in a thin umbel of leaves and flowers. Petiole jointed at the baſe, filiform, ſmoothiſh, from an inch to an inch and half in length, looſe. Leaflets ſubpetioled, blunt, ſlightly emarginate, ſmooth above, obſcurely villoſe underneath and at the edges, green, without any conſpicuous callus, from half an inch to an inch in length. Scapes few from all the umbels, and ſometimes alſo one from the axil of the upper leaf, jointed at the baſe, longer than the leaves, thicker than the petioles, appearing villoſe when magnified, looſe; bractes approximately alternate at top. Calycine leaflets lanceolate, acute, ſomewhat ciliate and villoſe, green with the tips and edges of the baſe ferruginous, upright. Corolla ſeveral times longer than the calyx: claws upright, yelloviſh: borders wide, rounded with a little point, ſpreading very much, pale red within, whitiſh red on the outſide. Filaments connate at the baſe: interior equal, ſomewhat hirſute with capitate and ſimple hairs mixed: exterior very thinly hirſute in the ſame manner. Anthers incumbent, yellow. Germ pyramidal, yelloviſh green, hirſute at top. Styles very cloſely hirſute like the filaments[h].

49. Bulb roundiſh, often an inch in diameter, covered with a brown ſkin, looſe. Stipe ſtanding out, a foot or eighteen inches long, round, ſmaller than a pigeon's quill, minutely and denſely villoſe, brown, below the middle having a few ſcales but no leaves, above the middle leafy and ſometimes having a branchlet; when young wholly upright, but afterwards more or leſs reclining, and even entirely procumbent on account of its weakneſs and the weight of the umbel; terminated by a denſer looſe umbel of leaves and flowers. Leaves ſeveral. Petiole jointed at the baſe, filiform, from one to two inches long, villoſe, browniſh purple, looſe. Leaflets on very ſhort petioles, emarginate, ſmooth above, very ſhortly pubeſcent underneath and at the edges when examined by a glaſs, and having yellow calluſes ſcattered over the whole back, about half an inch in length. Scapes ſeveral, jointed at the baſe, ſomewhat villoſe, looſe, thicker and longer than the petioles; bractes approximately alternate at top. Calycine leaflets linear-lanceolate, blunt, thinly ciliate and villoſe, green with brown tips, upright. Corolla four times as long as the calyx: claws upright, yelloviſh: borders wide, rounded, very blunt, ſmooth, ſpreading very much, pale red within, and ſtill paler on the outſide. Filaments united at the baſe: interior unequal, hirſute with ſimple hairs: exterior ſomewhat hirſute in the ſame manner. Anthers incumbent, yellow. Germ oblong, yelloviſh green, extremely villoſe above the middle. Styles hirſute with ſimple hairs[i].

50. Bulb roundiſh, the ſize of a hazel nut, covered with a brown ſkin, ſometimes looſe. Stipe above ground, filiform, browniſh, ſmooth, from one to four inches long, very weak, and always wholly proſtrate from its extreme ſlenderneſs, moſtly leafleſs and having only a few minute ſcales, except at top, where there is a leaf or one or two umbels; it is terminated alſo by a denſer looſe umbel of leaves and flowers. Leaves ſeveral. Petiole jointed at the baſe, filiform, ſmoothiſh, from one to two inches long, looſe. Leaflets ſubſeſſile, blunt, often emarginate, ſmooth above, underneath and at the edges ſcarcely villoſe when magnified, green, without any conſpicuous callus, from half an inch to an inch in length. Scapes ſeveral, jointed at the baſe, longer than the leaves, thicker than the petioles, appearing villoſe when magnified, looſe; bractes approximately alternate at top. Calycine leaflets lanceolate, acute, ſomewhat villoſe and ciliate, green with the tips ferruginous, upright. Corolla four times as long as the calyx and longer: claws upright, ſomewhat yelloviſh: borders wide, rounded with a little point, deep red within, very pale red on the outſide, ſpreading very much. Filaments connate at the baſe: interior unequal. Anthers incumbent, yellow. Germ ovate, ſmooth, pale green[k].

51. Bulb ovate, half an inch long, covered with a black ſkin, within which are frequently ſeveral bulbs, hence when cultivated it has almoſt always many ſtipes: theſe are out of the ground, have a few ſcales on them, are round, ſlender, have a very few hairs ſcattered over them, are ſix inches long, ſometimes leafleſs, ſometimes having a ſingle leaf at top, when young almoſt upright, but afterwards wholly procumbent, terminated by a denſe umbel of leaves and flowers. Leaves ſeveral, upright and ſpreading a little. Petiole jointed at the baſe, filiform, villoſe, from one to two inches in length. Leaflets ſubſeſſile, wedge-form-linear, emarginate, at the edges and underneath appearing ſomewhat villoſe when magnified, above ſmooth and dotted, underneath having two orange-coloured calluſes below the tip, about half an inch in length. Scapes ſeveral, jointed at the baſe, round, a little hirſute at top with capitate hairs, in other parts with ſimple ones, almoſt upright, longer than the petioles and twice as thick; bractes alternate, approximating, and ciliated at top with capitate hairs. Calycine leaflets lanceolate, acute, erect, ciliate and hirſute with capitate or ſimple hairs, green with the edges blood-red and two oblong orange-coloured calluſes below the tip connected at top. Corolla four times as long as the calyx: claws erect, yellow: borders obovate, rounded, quite entire, wide, ſpreading very much, white with one ſide of the back blood-red. Filaments connate at the baſe: interior unequal, hirſute with ſimple and capitate hairs: the toothlets ſmooth: exterior very ſparingly hirſute in the ſame manner. Anthers incumbent, ſulphur-coloured. Germen yelloviſh green, ſomewhat hirſute at top. Styles hirſute with ſimple and capitate hairs[l].

Dr. Smith, whoſe deſcription does not in general differ materially from the above, remarks, that the flowers are expanded in the ſunſhine only, have no ſcent, but are beautiful and extremely elegant even when cloſed; that the petals are ſeparate at the baſe, but a little above it united into a tube, then again ſeparated, folded over each other to the left, white with an exquiſite red border, that the five longeſt filaments are but half the length of the corolla, with didymous anthers; and five other very ſhort filaments, without anthers, are attached to the longer ones, and ſtand between the ſhorter; that the germ is ſmooth and pellucid, full of little protuberances occaſioned by

[g] Jacquin. [h] Idem. [i] Idem. [k] Idem. [l] Idem.

the prominent rudiments of the ſeeds, the ſtyles the length of the longer ſtamens.

Introduced in 1774, by Mr. Francis Maſſon [n]. It flowers abundantly in the hot-houſes of the botanic garden at Chelſea in the winter [n].

52. Bulb ovate, covered with a footy ſkin, ſmaller than a hazel nut. Stipe appearing ſomewhat hirſute when examined by a glaſs, having a few ſcales, and often one or two leaves, extremely weak ſo as to be wholly procumbent. Petiole round, ſlender, appearing villoſe when magnified, about an inch long. Leaflets underneath ſomewhat hirſute, and having generally two ferruginous ſpots below the tip, for they are ſometimes wanting, half an inch long or a little more. Scapes ſomewhat villoſe, nearly twice as long as the leaves, almoſt upright, but weak. Calycine leaflets hirſute with capitate hairs, green with two linear orange-coloured calluſes on the back at the tip. Corolla bell-ſhaped: borders white with one margin of the back yellow tinged with purple. Interior filaments hirſute with capitate hairs: exterior ſmooth. Styles hirſute with ſimple hairs.

53. Bulb ovate, with a black ſkin, half the ſize of a hazel nut. Stipe almoſt upright, ſmooth or ſomewhat villoſe, purple at bottom, from two to four inches long, ſcaly at the baſe, ſometimes leafleſs, ſometimes leafy all over; and even having barren branchlets; the umbel of leaves and flowers that terminates it being elongated, but barren. Petiole an inch in length, or much ſhorter. Leaflets blunt or retuſe, very thinly hairy on both ſides, converging, underneath below the tip and at the edges having from three to nine orange-coloured calluſes, ſcarcely half an inch in length. Scapes ſhortly jointed at the baſe, purpliſh, two inches long and more: bractes minute, ſomewhat villoſe, orange-coloured at top, above the middle. Calycine leaflets oblong, ſharpiſh, villoſe, purple mixed with green, ciliate, with two oblong, orange-coloured calluſes at the tip underneath. Borders of the corolla rounded-wedge-ſhaped, pale with a tinge of fleſh-colour, outwardly on one ſide red-purple and ſomewhat villoſe. Interior filaments hirſute with capitate hairs: exterior ſmooth. Anthers pale yellow or whitiſh. Styles hirſute with ſimple hairs.

54. Bulb roundiſh, the ſize of a hazel nut or even of a walnut, covered with a brown ſkin, having ovate acuminate looſe ſcales, fleſh-coloured or pale and fleſhy. Stipe from half an inch to ſix inches in height, upright but weak, appearing ſomewhat villoſe in the microſcope, purpliſh or browniſh, the thickneſs of a pigeon's quill, ſometimes leafleſs and having only diſtant ſcales, ſometimes leafy, commonly quite ſimple but ſometimes having a ſingle branchlet or two, terminated by a cloſely leafy and many-flowered umbel. Leaves very many. Petiole very ſlightly jointed at the baſe, purple and green, from half an inch to three or four inches in length. Leaflets emarginate, appearing in the microſcope dotted on both ſides, ſmooth above, having a very few hairs underneath and two orbicular orange-coloured calluſes below the tip, channelled and converging, from half an inch to two inches in length. Scapes much thicker than the petioles, greeniſh brown or purple: bractes at top alternate or nearly oppoſite, blunt, having two oblong tawny calluſes underneath below the tip. Calycine leaflets lanceolate-oblong, blunt, ſomewhat hirſute, green with the edges purple below, having two calluſes like the bractes, upright in the flower, afterwards half bent back. Corolla three times as long as the calyx: borders obovate, rounded, ſpreading very much, within pale purple roſe-colour, on the outſide dirty whitiſh with one ſide yelloviſh and ſomewhat villoſe. Anthers ſulphur-coloured. Style hirſute at bottom with ſimple, at top with capitate hairs. Stigma very pale yellow. This is deſcribed by Jacquin in his collections, and figured in his *Icones variores*, under the name of *O. verſicolor*. The three laſt indeed are probably conſidered by Linnæus and Thunberg as varieties of *O. verſicolor* [o].

55. Bulb ovate, almoſt the ſize of a hazel nut, with a blackiſh-brown ſkin, often looſe at top. Stipe ſtanding out, round, ſcaly, brown, villoſe, procumbent, leafleſs, ſlender, two or three inches long, terminated by a denſe umbel of leaves and flowers. Leaves very many, ſpreading a little. Petiole jointed at the baſe, round, ſlender, villoſe, purpliſh, from one to three inches in length. Leaflets ſubſeſſile, emarginate, villoſe on both ſides and at the edges, ſoft, underneath dotted and having roundiſh yelloviſh ſcattered ſpots viſible in the microſcope, half an inch long. Scapes ſeveral, jointed at the baſe, almoſt the length of the leaves, round, hirſute, purpliſh, upright; bractes alternate, approximating at top. Calycine leaflets linear-lanceolate, acute, hirſute, ciliate, erect, purpliſh. Corolla ſeveral times as long as the calyx: claws erect, yellow: borders obovate, rounded, wide, ſpreading very much, ſnow-white within, whitiſh without. Filaments connate at the baſe: interior equal, hirſute with capitate hairs thinly ſet: exterior ſmooth. Anthers incumbent, yellow. Germ very ſhort, pale greeniſh yellow, hirſute at top. Styles hirſute with ſimple hairs [p].

56. Stipe about three inches long, frequently with a leaf or two on it. Petiole about three inches long. Leaflets ſomewhat of a hoary green. Calycine leaflets green, with the ends often ſpreading. Corolla five times as long as the calyx, yelloviſh at bottom, the reſt white: claws twice as long as the calyx. Interior filaments ſhorter than the claws of the corolla. Germ oblong, very hirſute at top and obſcurely callous.

It differs from the preceding in having the interior filaments unequal, and the exterior filaments not ſmooth, but hirſute with capitate hairs, and the ſtyles very ſhort [q].

57. Stipe ſtanding out, round, filiform, appearing ſomewhat villoſe in the microſcope, angular-grooved, one or two inches in length, having frequently a leaflet on it, terminated by an umbel of leaves and flowers. Leaves ſeveral. Petiole wide at the baſe, embracing, ſtriated, appearing villoſe in the magnifier. Leaflets ſubſeſſile, emarginate, converging, ciliate at the edges with diſtant hairs, underneath towards the edges having one row of roundiſh calluſes, a third part of an inch in length. Scapes few, obſcurely villoſe in the microſcope, erect, an inch and half long; with alternate, lanceolate, acute, erect bractes at top. Calycine leaflets lanceolate, acute, ciliate with a few hairs above, in other parts ſmooth, pale, underneath below the tip having two oblong yellow calluſes. Corolla three times as long as the calyx, ſubcampanulate; claws yellow: borders obovate, rounded, purple, ſpreading. Filaments connate at the baſe, wholly ſmooth: interior equal. Anthers oblong, incumbent, yellow. Germ ſtreaked with red. Styles hirſute with ſimple hairs below and capitate hairs above [r].

58. Bulb ovate, with a brown ſkin, leſs than a pea. Stipe partly under and partly above ground, from half an inch to two inches in length, filiform, ſmooth, the ſhorter upright, the longer procumbent, ſometimes leafleſs, ſometimes having a few leaves at the baſe or at top, terminated by a denſer umbel of leaves. Leaves ſeveral, ſpreading and erect. Petiole not jointed at the baſe, filiform, ſmooth, about an inch long. Leaflets ſubſeſſile, emarginate, dotted and green on both ſides, ſmooth except that they have ſometimes a hair or two at the back, about four lines in length, without any callus. Scape ſingle, jointed at the baſe, round, ſmooth, the length of the leaves, weak, green, with bractes at top, alternate, pale, having orange-coloured calluſes near the tip of the back. Calycine leaflets lanceolate-oblong, blunt, ſmooth, concave, upright, pale green, with two oblong orange calluſes on the tip of the back. Corolla three times as long as the calyx, bell-ſhaped: claws erect, yelloviſh: borders obovate, rounded, ſpreading very much, whitiſh violet. Filaments united at the baſe, ſmooth: interior unequal: exterior equal. Anthers oblong, incumbent, yellow. Germ oblong, ſmooth, pale. Styles ſmooth [s].

[n] Hort. kew. [o] Smith ic. rar. [p] Jacquin. [q] Idem. [r] Idem. [s] Idem.

59. Bulb oval, an inch long, covered with a black hard ſkin. Stipe ſtanding out, one or two inches in length, ſcaly, round, the thickneſs of a pigeon's quill, purpliſh, ſomewhat villoſe, erect, terminated by a denſe umbel of leaves and flowers. Leaves very many, ſpreading out in a ring. Petiole jointed at the baſe, round, about two inches in length, villoſe, greeniſh or reddiſh. Leaflets ſubſeſſile, hirſute on both ſides and at the edges, dotted and green on both ſides, half an inch long or more, the middle one often emarginate, the ſide ones quite entire. Scapes ſeveral, jointed at the baſe, round, ſomewhat villoſe, pale, almoſt upright, ſometimes longer, ſometimes ſhorter than the leaves, with oppoſite jointed bractes above the middle. Calycine leaflets lanceolate, bluntiſh, hirſute, ciliate, pale green with whitiſh edges, having generally below the tip one or two roundiſh orange ſpots, upright. Corolla ſeveral times longer than the calyx: claws upright, ſulphur-coloured; borders wide, rounded, ſnow-white within, ſomewhat ſulphur-coloured without, one ſide being variegated with red dots, ſpreading very much. Filaments connate at the baſe: interior toothletted, equal, hirſute with capitate hairs; the toothlets ſmooth: exterior ſmooth. Anthers incumbent, yellow. Germ oblong, pale yellowiſh green, hirſute at top, callous. Styles hirſute with ſhort capitate hairs mixed with a few long ſimple ones.

Jacquin doubted a long time whether this was any thing more than a variety of the next ſpecies: but the conſtant difference in the equal calycine leaflets, and the leaves never being waved, induced him at length to conſider it as a diſtinct ſpecies [t].

60. Bulb equal, an inch long, with a blackiſh-brown ſkin. Stipe from one to three inches long, almoſt upright, green or browniſh, ſlightly pubeſcent, leafleſs but having lanceolate, acuminate, ferruginous, ciliate ſcales, terminated by an umbel of leaves and flowers. Leaves ſeveral, almoſt upright or ſpreading a little. Petiole hirſute, from one to three inches long. Leaflets more or leſs waved, very ſeldom wholly flat, an inch long, rounded at the tip, having roundiſh dirty yellow dots ſcattered over them underneath, ſcarcely viſible even with a magnifying glaſs: the middle one ſlightly emarginate, and ſomewhat longer than the lateral ones, which are quite entire. Scapes longer than the leaves, pale or purpliſh: bractes below the middle. Calycine leaflets oblong, blunt, green above, below having blood-red ſpots, variegated on the back with roundiſh, yellow, ſcattered ſpots; one of them is larger and ſpatulate. Corolla five times as long as the calyx: claws ſhort, yellow: borders very wide, long, white with one ſide of the back dotted with purple. In other circumſtances it agrees with the preceding, except in thoſe pointed out before [u].

61. Bulb oval, covered with a black hard ſkin, an inch long. Stipe ſubterraneous, ſcaly above, an inch and more in length, terminated by a denſe umbel of leaves and flowers, under which is frequently another umbel or two that is leſs denſe. Leaves very many, ſpreading. Petiole jointed at the baſe, round, hirſute, two or three inches long. Leaflets ſubſeſſile, dotted, villoſe at the edges; the upper ſurface alſo villoſe, and green with duſky blood-red ſpots; the lower ſurface ſmooth and almoſt wholly blood-red; about half an inch long, rounded; the middle one wedgeform-obovate or rather roundiſh, quite entire or ſlightly emarginate, the lateral ones oblong and quite entire. Scapes ſeveral, jointed at the baſe, round, ſomewhat villoſe, erect, pale, ſlender, four inches long, with oppoſite jointed bractes above the middle. Calycine leaflets lanceolate, blunt, hirſute, ciliate, erect, green with a roſe-coloured baſe, ſpotted along the middle of the back in two orange-coloured interrupted lines, ſometimes entirely wanting. Corolla large: claws erect, twice as long as the calyx, yellow within: borders white with one ſide of the back fleſh-coloured, rounded, wide, ſpreading very much. Filaments connate at the baſe: interior toothletted, equal, ſmooth at top, in the other parts hirſute with capitate hairs, except the toothlets which are ſmooth: exterior ſmooth. Anthers incumbent, yellow. Germ hirſute at top, callous. Styles hirſute with hairs that are ſometimes all capitate or all ſimple, ſometimes mixed but always ſhort [v].

62. Bulb ovate, covered with a black hard ſkin, twice as large as a hazel nut. Stipe one or two, ſtanding out, round, the thickneſs of a pigeon's quill, from one to three inches long, erect or procumbent, villoſe, ſcaly, leafleſs, purpliſh, weak, terminated by a denſe umbel of leaves and flowers. Leaves very many, ſpreading in a ring. Petiole jointed at the baſe, round, pale green or purpliſh, one or two inches long, hirſute with capitate hairs. Leaflets ſubſeſſile, dotted, villoſe at the edges and on the back with capitate hairs, on the upper ſurface green with a few ſimple hairs, underneath commonly blood-red, blunt, quite entire, from half an inch to an inch in length, the middle one wedge-obovate, the ſide ones oblong. Scapes ſeveral, jointed at the baſe, the length of the leaves or much longer, round, whitiſh, villoſe with capitate hairs, almoſt upright or ſpreading; bractes oppoſite, jointed, below the middle. Calycine leaflets lanceolate, bluntiſh, pale green, villoſe with capitate hairs at the edges and a few on the back, erect, often purpliſh at the baſe, below the tip frequently having one or two roundiſh yellow ſpots, but theſe are not ſeldom wanting. Corolla ſeveral times longer than the calyx, ſmooth, wide, dirty white on the outſide, within yellow and upright at the baſe, the reſt white, blunt and ſpreading very much. Filaments connate at the baſe; interior toothletted, equal, hirſute with capitate hairs, as are alſo the toothlets: exterior ſmooth. Anthers incumbent, yellow. Germ hirſute at top, callous. Styles very hirſute with ſimple blunt hairs [w].

63. Bulb ovate-roundiſh, covered with a black ſkin, larger than a hazel nut. Stipe commonly wholly ſubterraneous, having one or two ſcales at top, ſhort, leafleſs, round, almoſt as thick as a pigeon's quill, terminated by a denſer umbel of leaves and flowers. Leaves ſeveral, erect or ſpreading. Petiole jointed at the baſe, grooved in front, compreſſed a little, hirſute, one or two inches long. Leaflets ſeſſile, quite entire or ſlightly emarginate, about an inch long, villoſe at the edges, green on both ſides, hirſute and ſlightly dotted above, paler, much dotted, and leſs hirſute above. Scapes ſeveral, jointed at the baſe, roundiſh, villoſe, pale, longer than the leaves, almoſt upright; bractes oppoſite, jointed, about the middle. Calycine leaflets lanceolate, acute, hirſute, pale green, ciliate, erect. Corolla ſeveral times longer than the calyx: claws erect, three times as long as the calyx, dirty yellow: borders very wide, rounded, ſpreading very much, yellow within, very pale yellow on the outſide, with one ſide of the back having blood-red dots. Filaments united at the baſe: interior toothletted, equal, thinly hirſute with capitate hairs; the toothlets ſmooth: exterior ſmooth. Anthers incumbent, yellow. Germ oblong, pale yellowiſh green, cloſely hirſute at top, callous. Styles very hirſute with capitate hairs.

β. Bulb oval, an inch long, covered with a black hard ſkin. Stipe either wholly ſubterraneous or ſtanding out a little, ſcaly, leafleſs, round, whitiſh, about an inch long, upright, thinner than a pigeon's quill. Leaves very many, ſpreading out in a ring. Petiole round, villoſe. Leaflets ſubſeſſile, dotted, villoſe and green on both ſides, ciliate, about half an inch long; the middle one ſubemarginate, the ſide ones rounded and quite entire, appearing to have many obſcure calluſes when examined by a magnifier. Scapes whitiſh, upright, twice as long as the leaves. Calycine leaflets villoſe, erect except that they are ſometimes ſpreading at the tips, pale green with the lower edges having dark blood-red dots, deeper green above with yellow calluſes more or leſs ſcattered over them. Corolla five times as long as the calyx: claws yellow, twice as long as the calyx: borders white with one ſide of the back blood-red dotted and ſomewhat villoſe. Filaments connate at the baſe: interior ſmooth above, in other parts very hirſute with capitate hairs; the

[t] Jacquin. [u] Idem. [v] Idem. [w] Idem.

toothlets

toothlets alſo hirſute: exterior ſmooth. In other reſpects agreeing with the other [a].

64. Bulb oval, an inch and half long, covered with a black hard ſkin. Stipe partly under, partly above ground, ſcaly, round, about an inch high, upright, leafleſs, terminated by a denſe umbel of leaves and flowers. Leaves very many, erect or ſpreading a little. Petiole jointed at the baſe, round, ſlender, green, hirſute, about two inches in length. Leaflets ſubſeſſile, hirſute at the edges and on the upper ſurface, dotted and ſmooth on the back, rounded at the end, half an inch long, ſometimes all unſpotted, ſometimes duſky ſpots ſcattered over the face of ſome of them, or even of all; the middle one obovate, emarginate, the ſide ones oblong and quite entire. Scapes ſeveral, jointed at the baſe, round, ſlender, whitiſh, ſomewhat villoſe, double the length of the leaves; with oppoſite, jointed bractes about the middle. Calycine leaflets lanceolate, bluntiſh, hirſute, ciliate, pale green, with from one to four roundiſh orange ſpots below the tip, upright. Corolla five times as long as the calyx: claws erect, pale yellow: borders rounded, ſpreading very much, white with one ſide of the back purpliſh. Filaments connate at the baſe: interior toothletted, equal, ſmooth above, in other parts very minutely hirſute, as are alſo the toothlets: exterior ſmooth. Anthers incumbent, yellow. Germ pale greeniſh yellow, hirſute at top, callous. Styles hirſute with ſimple hairs [b].

65. Bulb ſubovate, with a blackiſh-brown ſkin, leſs than an inch in length. Stipe ſtanding out, ſcaly, leafleſs, round, the thickneſs of a pigeon's quill, villoſe, almoſt upright, about an inch in length, terminated by a denſer umbel of leaves and flowers. Leaves ſeveral, erect or ſpreading a little. Petiole jointed at the baſe, round, grooved in front, hirſute, about two inches long. Leaflets blunt, generally quite entire, villoſe at the edges, on both ſides green, villoſe, and appearing dotted in the magnifier, ſubſeſſile. Scapes ſeveral, jointed at the baſe, hirſute, round, pale, higher than the leaves; with oppoſite jointed bractes below the middle. Calycine leaflets lanceolate, acute, pale green, ciliate, hirſute, erect. Corolla ſeveral times longer than the calyx: claws erect, twice as long as the calyx, pale yellow: borders wide, rounded, ſpreading very much, yellow within, pale whitiſh yellow without, with one ſide of the back blood-red dotted. Filaments connate at the baſe: interior toothletted, equal, thinly and very minutely hirſute with capitate hairs; the toothlets ſmooth: exterior ſmooth. Anthers incumbent, yellow. Germ pale greeniſh yellow, hirſute above, callous. Styles hirſute with ſimple hairs [b].

66. Bulb ovate-acuminate, with a blackiſh-brown ſkin, about an inch in length. Stipe partly under, partly above ground, round, villoſe, the thickneſs of a pigeon's quill, green, procumbent, ſomewhat ſcaly, an inch and half long, leafleſs, terminated by a denſe umbel of leaves and flowers. Leaves very many, almoſt upright and ſomewhat ſpreading. Petiole jointed at the baſe, roundiſh, villoſe, two inches long. Leaflets ſeſſile, very villoſe and ſoft on both ſides and at the edges, blunt, quite entire, almoſt an inch long, having roundiſh yellowiſh dots viſible only with a glaſs, ſcattered over the under ſurface. Scapes many, jointed at the baſe, roundiſh, villoſe, whitiſh, from four to ſix inches in length, upright at bottom, the reſt flaccid: bractes oppoſite, jointed, above the middle. Calycine leaflets inverſely wedge-ſhaped, blunt, ciliate, hirſute, upright with ſpreading tips, green with pale edges, and tinged a little with purple underneath, below the tip marked with from one to four roundiſh orange ſpots. Corolla five times as long as the calyx: claws erect, yellow on both ſides, twice as long as the calyx: borders very wide, rounded, ſpreading very much, white on both ſides with one ſide of the back blood-red dotted and obſcurely villoſe. Filaments connate at the baſe: interior toothletted, equal, ſmooth above, in other parts hirſute with thinly ſcattered capitate hairs, except the toothlets, which are ſmooth: exterior ſmooth. Anthers incumbent, yellow. Germ pale yellowiſh green, hirſute at top, callous. Style hirſute with ſimple hairs.

O. exaltata has always long ſlender ſcapes ſtrictly upright, and ſpotted leaves. *Rubreflava* and *flaccida* have always green unſpotted leaves; and the former of theſe has yellow flowers on ſhorter upright ſcapes; the latter has white flowers on very long flaccid ſcapes. If theſe differences be not thought ſufficient to diſtinguiſh the ſpecies, the three laſt may be conſidered only as varieties [c].

67. Bulb ovate, with a blackiſh ſkin, half the ſize of a hazel nut. Stipe ſubterraneous, an inch long, terminated by an umbel of leaves and flowers. Leaves ſeveral. Petiole jointed at the baſe, roundiſh, villoſe, purpliſh green, three or four inches long, erect or ſpreading a little. Leaflets always green on both ſides, ſubſeſſile, ſomewhat veined, villoſe at the edges, above ſmooth and manifeſtly dotted when examined by a magnifier, wholly pubeſcent underneath. Scapes very many, jointed at the baſe, red, round, villoſe, from ſix to nine inches long, almoſt upright at bottom, and thence more or leſs reclining; with alternate bractes below. Calycine leaflets lanceolate, ſharpiſh, green with one or two orange ſpots at top, which however are often wanting; hirſute, ciliate either with all the hairs ſimple, or the lower ones capitate and very ſhort. Corolla large: claws upright, yellow on both ſides: borders longer than the claw, wide, rounded, ſpreading very much, white on both ſides with a ſuffuſion of fleſh-colour within above the claws, and with one ſide of the back reddiſh and ſomewhat villoſe. Filaments connate at the baſe: interior toothletted, equal, ſmooth at the top, the reſt very hirſute with capitate hairs; with the toothlets hirſute in the ſame manner: exterior alſo hirſute, only more ſparingly. Anthers incumbent, yellow. Germ pale green, hirſute at top. Styles hirſute at the baſe with ſimple hairs, in other parts quite ſmooth.

β. The variety with red flowers has the bulb the ſize of a hazel nut. Stipe partly under, partly above ground and ſcaly. Leaves very many. Petiole ſomewhat hirſute, pale green, two or three inches long. Leaflets ſometimes emarginate, on both ſides green and dotted, underneath pubeſcent at the midrib and principal veins, half or three quarters of an inch in length. Scapes roundiſh, pale, very thinly hirſute, almoſt upright, a little longer than the leaves. Calycine leaflets green with the edges blood-red at bottom. Hairs ſometimes capitate, ſhort, and a very few among the lower cilias. Corolla ſeveral times longer than the calyx: borders the ſame length with the claws, red on both ſides, except that one ſide of the back is dirty yellow and ſomewhat villoſe. In other reſpects it agrees with the preceding [c].

68. Bulb ovate, acute, ſmall, looſe. Stipe ſubterraneous, an inch and half long. Leaves ſeveral, in a ring. Petiole round, grooved in front, thinly hirſute, blood-red, about two inches in length. Leaflets ſeldom and ſlightly emarginate, dotted on both ſides, of a darker green on the upper ſurface, on the lower ſomewhat hirſute with decumbent hairs thinly ſpread, ſhining, ſometimes green, ſometimes blood-red in whole or in part, about half an inch in length, thickiſh. Scapes the length of the petioles, pale with a tinge of purple, round, ſmooth or with very few hairs, upright. Calycine leaflets lanceolate or ovate, green or purpliſh with duſky-orange lines, thinly villoſe, ciliate at the edges, with long ſimple hairs at top, in other parts with ſhort capitate hairs. Corolla very large: claws yellow on both ſides and upright: borders wedge-ſhaped, longer than the claws, truncated, ſpreading very much, white with one ſide of the back reddiſh and villoſe, together with the claws an inch and half long. Germ conical, the whole quite ſmooth. Styles hirſute with ſimple hairs at the baſe only, in other parts quite ſmooth.

This bears a great affinity to *O. variabilis*, differing chiefly in having the leaflets commonly blood-red underneath, whereas in that they are always green [c].

[a] Jacquin. [b] Idem. [c] Idem. [d] Idem. [e] Idem.

69. Bulb ovate, with a blackiſh-brown ſkin, from the ſize of a hazel nut to twice that bigneſs. Stipe ſhortly ſubterraneous, then ſtanding out, from three to five inches long, round, purple, ſmooth, without ſcales, the thickneſs of a pigeon's quill or thicker, wholly procumbent, branched, brittle with a central tough fibril, thickened at the tip, and from this terminated by a very cloſe and elegant umbel of leaves and flowers, and finally denſely bulb-bearing from the ſame. Leaves very numerous, ſpreading every way. Petiole jointed at the baſe with a two-toothed joint, round, pale green, ſmooth, three or four inches long. Leaflets ſubſeſſile, quite entire, half an inch long, ſmooth and dotted on both ſides, ſmooth at the edges, above deep green, underneath paler and ſhining with ſilvery dots, ſome of them, when far advanced, purple with the like dots but of a golden colour, ſomewhat fleſhy. Scapes ſeveral, jointed at the baſe without toothlets, compreſſed, grooved on one ſide, ſmooth, pale purple, longer than the leaves, almoſt upright, with alternate, diſtant, oblong, blunt, concave, ſmooth, erect bractes, frequently purpliſh, above the middle. Calycine leaflets oblong, blunt, upright, ſmooth only ciliate at the edges with a very few ſimple hairs viſible in a glaſs, dirty greeniſh pale yellow with red edges. Corolla four times as long as the calyx, ſmooth: claws upright, yellow, a little longer than the calyx; borders very wide, rounded, ſpreading very much, roſe-coloured with one ſide of the back dirty ſulphur-coloured. Filaments connate at the baſe: interior toothleſs, equal, ſmooth at top, in other parts hirſute with capitate hairs: exterior hirſute below with ſimple long hairs thinly ſet, above with ſhorter capitate hairs; or quite ſmooth. Anthers incumbent, yellow. Styles hirſute with capitate hairs. Stigmas very cloſely pencilled [f].

70. Bulb ovate, looſe, ſmall, looſely incloſed in a ſkin, from three to ſix times the ſize of the bulb. Stipe ſubterraneous, from one to three inches long, round, ſlender, often bulbiferous, terminated by a denſe umbel of leaves and flowers. Leaves very many, ſpreading or lying on the ground. Petiole jointed at the baſe, denſely villoſe, pale green, from one to three inches long. Leaflets ſeſſile, quite entire, villoſe at the edges, quite ſmooth above, underneath ſomewhat hirſute and muſh dotted, always green on both ſides without any other colour, half an inch and more in length. Scapes ſeveral, jointed at the baſe, round, ſomewhat villoſe, pale green, almoſt upright, longer than the leaves; bractes ſublinear, ſharp, villoſe, approximately alternate at bottom. Calycine leaflets lanceolate, acute, hirſute, ciliate with ſimple hairs, green with blood-red ſpots at the edges, erect. Corolla ſeveral times longer than the calyx, bell-ſhaped: claws erect, yellow: borders obovate, wide, very blunt, generally longer than the claws, very deep purple on both ſides, with one ſide of the back dirty yellow and ſomewhat villoſe. Filaments united at the baſe: interior equal, ſmooth at top, the reſt, with the toothlets, very hirſute with capitate hairs; exterior ſmooth. Anthers oblong, incumbent, yellow. Germ pale green, the whole ſmooth. Styles very hirſute all over with capitate hairs [g].

According to Linnæus, the leaflets are obcordate, obſoletely emarginate, ſmooth even underneath, very finely ciliate. Scapes the length of the leaves. This does not agree with Jacquin's figure or deſcription.]

Mr. Miller ſays, the leaflets are roundiſh, large, hairy, and but little indented at the top, ſtanding upon long ſlender foot-ſtalks, ariſing from a thick ſhort ſtalk which adheres to the root. He adds, that ſome earth that came to England with plants from the Cape of Good Hope was full of it. [In 1690, it was cultivated in the royal garden at Hampton Court [h].

71. Bulb leſs than a hazel nut, with a blackiſh-brown ſkin. Stipe about an inch long, terminated by a looſe umbel. Leaves ſeveral. Petiole grooved in front, pale purple, thinly villoſe, three or four inches long, upright or ſpreading. Leaflets ſubſeſſile, often ſlightly emarginate, ſmoothiſh above, half or two thirds of an inch in length. Scapes thinly hirſute, purpliſh, the length of the leaves. Some of the hairs of the calyx towards the bottom are often ſhort and capitate. Borders of the corolla rounded, the length of the claws, ſpreading very much, white with one ſide of the back yellow and ſomewhat villoſe. Germ hirſute at top. Styles very hirſute with capitate and ſimple hairs. It is ſo nearly allied to the preceding, that it may perhaps be nothing more than a variety [i].

72. Bulb oval, with a black hard ſkin, an inch long. Stipe ſubterraneous, an inch in height, thick, terminated by a denſe umbel of leaves and flowers. Leaves very many, proſtrate in a ring. Petiole jointed at the baſe, villoſe, very much compreſſed, white or purple, from one to three inches long. Leaflets ſubſeſſile, ſometimes but ſeldom ſlightly emarginate, ſomewhat villoſe at the edges, otherwiſe ſmooth on both ſides, above glaucous green and appearing dotted when magnified, underneath manifeſtly dotted, and uſually more or leſs blood-red, near an inch in length. Scapes ſucceſſively very many, jointed at the baſe, compreſſed a little, ſomewhat villoſe, purple, ſcarcely an inch in height, erect or aſcending, after flowering ſtiffly proſtrate; bractes ſubalternate about the middle. Calycine leaflets, lanceolate, acute, ſomewhat villoſe, ciliate, erect, purple. Corolla four times as long as the calyx, ſmooth: claws upright, yellow: borders white, rounded, ſpreading very much. Filaments connate at the baſe: interior equal, ſpreading a little at the tip, ſparingly hirſute, together with the toothlets, with capitate hairs: exterior ſmooth. Anthers incumbent, yellow. Germ pale green, hirſute above. Styles hirſute with ſimple hairs at the baſe [k].

73. Bulb ovate, an inch long, covered with a blackiſh ſkin. Stipe ſubterraneous, an inch in height, terminated by a ſtiffiſh umbel of leaves and ſcapes. Leaves very many, ſpreading in a ring. Petiole jointed at the baſe, roundiſh, ſomewhat hirſute, pale, two or three inches long. Leaflets ſubſeſſile, ſometimes but ſeldom ſlightly emarginate, on both ſides dotted, green and ſmooth, underneath thinly hirſute at the midrib only, villoſe at the edges, veined, about an inch in length. Scapes ſeveral, jointed at the baſe, roundiſh, thinly hirſute, pale purple, aſcending or almoſt upright, about the ſame length with the leaves; bractes alternate and hirſute at bottom. Calycine leaflets lanceolate, acute, hirſute, green, unſpotted, ciliate with long ſimple hairs and ſhort capitate hairs mixed, erect, half turned back after the corolla falls. Corolla four times as long as the calyx: claws erect, yellow: borders wide, rounded, the length of the claws, ſpreading very much, white with one ſide of the back ſulphur-coloured and appearing villoſe in the magnifier. Filaments connate at the baſe: interior toothletted, equal, together with the toothlets very hirſute with capitate hairs: exterior ſmooth. Anthers incumbent, yellow. Germ oblong, pale green, hirſute at top. Styles very hirſute with ſhort capitate hairs and a very few long ſimple ones among them [l].

74. Bulb oval, with a blackiſh ſkin, leſs than an inch in length. Spike ſubterraneous, an inch long, ſcaly at top, terminated by an umbel of leaves and flowers. Leaves very many, ſpreading in a ring. Petiole jointed at the baſe, roundiſh, hirſute, more or leſs red, from two to four inches in length. Leaflets ſubſeſſile, ſometimes but ſeldom ſlightly emarginate, denſely villoſe at the edges, the upper ſurface green, ſmooth on both ſides, the under ſurface of a very deep blood red and ſhining from the firſt, almoſt an inch in length. Scapes ſeveral, jointed at the baſe, compreſſed a little, very cloſely hirſute, pale purple, erect, ſhorter than the leaves; bractes ſubalternate below. Calycine leaflets ovate, ſharpiſh, erect, green with a purple baſe, hirſute, ciliate with ſimple hairs. Corolla five times as long as the calyx, elegant: claws erect, dirty yellow: borders wide, rounded, ſpreading very much, of a very deep roſe-colour with one ſide of the back dirty yellow and villoſe, longer than the claws. Filaments connate at the baſe: interior toothletted, equal, very

[f] Jacquin. [g] Idem. [h] Hort. kew. [i] Jacquin. [k] Idem. [l] Idem.

hirſute with capitate hairs, and here and there one or two on the toothlets: exterior ſmooth. Anthers incumbent, yellow. Germ pale green, hirſute at top. Styles very hirſute with ſhort capitate hairs mixed with a very few long ſimple ones [m].

75. Bulb oval, with a blackiſh ſkin, leſs than an inch in length. Stipe ſubterraneous, about an inch and half in height, terminated by an umbel of leaves and flowers. Leaves ſeveral, in a ring. Petiole jointed at the baſe, roundiſh, hirſute, more or leſs red, from two to three inches long. Leaflets ſubſeſſile, ſometimes but ſeldom emarginate, having cloſe and long villoſe hairs at the edges, above green and ſmooth, underneath having ſhining dots and appearing ſomewhat rough-haired in the magnifier; about an inch in length. Scapes ſeveral, jointed at the baſe, compreſſed a little, ſomewhat hirſute, pale purple, upright, ſhorter than the leaves; having ſubalternate bractes below. Calycine leaflets ovate, ſharpiſh, erect, green, unſpotted, hirſute, ciliate with ſimple hairs. Corolla four times as long as the calyx: claws erect, yellow, a little exceeding the calyx: borders obovate, rounded, wide, ſpreading very much, ſmooth, white with one ſide of the back roſe-coloured. Filaments connate at the baſe: interior toothletted, equal, very hirſute with capitate hairs; toothlets ſmooth: exterior ſmooth. Anthers incumbent, yellow. Germ pale green, hirſute above and callous. Styles very hirſute with ſhort capitate hairs and a very few long ſimple ones mixed with them [n].

76. Bulb ovate-roundiſh, with a black hard ſkin, almoſt the ſize of a walnut. Stipe ſtanding out, extremely ſhort, terminated by an umbel of leaves and flowers. Leaves ſeveral, ſpreading in a ring. Petiole jointed at the baſe, about an inch and half long, compreſſed a little, thickiſh, woolly with white villoſe hairs. Leaflets ſubſeſſile, obverſely triangular, half an inch in length and breadth, ſilky-ciliate at the edges, with veins running over them that are preſſed in above and protuberant beneath: on the upper ſurface appearing dotted in the magnifier, ſilky and ſomewhat hoary; on the back violet with pale veins, and cloſely ſilky; thickiſh and ſoft to the touch like thoſe of Marſh Mallow. Scapes ſeveral, jointed at the baſe, round, denſely hirſute with whitiſh villoſe hairs, erect, three or four inches in height: with oppoſite jointed bractes above the middle. Calycine leaflets lanceolate, ſharpiſh, villoſe, erect, green, ciliate with ſilky villoſe hairs. Corolla ſeveral times longer than the calyx: claws erect, twice as long as the calyx, yellow: borders broad wedge-form, rounded, the length of the claws, ſpreading very much, violet-purple, with one ſide of the back pale and ſomewhat villoſe. Filaments connate at the baſe: interior appendicled, equal, hirſute with capitate hairs; the toothlets ſmooth; exterior ſmooth. Anthers incumbent, yellow. Styles hirſute with ſimple hairs [o].

77. Bulb oval, covered with a blackiſh hard ſkin, an inch and more in length. Stipe ſubterraneous, about an inch long, terminated by a denſe umbel of leaves and flowers. Leaves very many, in a ring. Petiole jointed at the baſe, roundiſh, hirſute, purple, from one to three inches long. Leaflets ſubſeſſile, very much dotted on both ſides, villoſe at the edges, dark green on the upper ſurface, ſomewhat netted with hirſute raiſed veins, in other parts ſmooth; on the lower ſurface ſomewhat villoſe, blood-red, with golden ſhining dots ſcattered over it, about half an inch in length and breadth. Scapes ſeveral, jointed at the baſe, round, pale, ſomewhat hirſute, almoſt upright, the length of the leaves; with alternate bractes at bottom. Calycine leaflets ovate, bluntiſh, ciliate at the edges with club-ſhaped hairs at bottom mixed with others that are ſhorter, in other parts ſmooth or appearing villoſe only with a magnifier, very pale green with the edges red to the middle, and orange lines at the tip on both ſides, erect but turned back at the end. Corolla wholly ſulphur-coloured, ſeveral times longer than the calyx. Petals wedge-ſhaped, rounded, erect as far as the middle and yellow within, thence ſpreading very much. Filaments connate at the baſe: interior equal, thinly hirſute with ſimple hairs: exterior ſmooth. Anthers incumbent, yellow. Styles hirſute with ſimple hairs [p].

78. Stipe filiform, ſubmerſed, of an indeterminate length, leafleſs but having a few ſcales, terminated by an umbel of leaves and flowers floating on the ſurface of the water. Leaves ſeveral. Petiole widening at the baſe, but not jointed, ſomewhat villoſe, ſcarcely a quarter of an inch in length. Leaflets ſubſeſſile, green above, in the magnifier appearing dotted towards the edges, and obſcurely villoſe: underneath glaucous, ſmooth and undotted; ſcarcely the length of the petioles. Calycine leaflets oblong, blunt, ſmooth, the two inner ones ſhorter. Corolla twice as long as the calyx, white. Filaments connate at the baſe, wholly ſmooth: interior equal. Germ a little villoſe at top. Styles ſmooth [q].

79. Bulb oval or obovate, with a black hard ſkin, almoſt an inch in length. Stipe ſubterraneous, one or two inches long, terminated by a denſe umbel of leaves and flowers. Leaves numerous, villoſe on both ſides and at the edges. Petioles roundiſh, one or two inches in length, dirty purple, jointed at the baſe. Leaflets ſubſeſſile, dotted on both ſides, above dirty deep green with oblong livid ſpots, underneath commonly all livid, ſcarcely half an inch in length. Scapes very many, round, ſomewhat villoſe, pale purple, of different lengths, jointed at the baſe; with oppoſite jointed bractes at bottom. Calycine leaflets oblong, blunt, erect, hirſute with ſimple hairs on the back and at the edges, blood-red on the back with the middle of the diſk green and marked above with two longitudinal orange lines. Corolla ſix times as long as the calyx: claws upright, ſhort, yellow within, whitiſh on the outſide: borders wide, rounded, ſpreading very much, white within, dotted with red without on one ſide. Filaments connate at the baſe: interior ſmooth at top, in other parts hirſute with very minutely capitate hairs: exterior ſmooth. Anthers incumbent, yellow. Germ oblong, very hirſute at top, pale green, callous. Styles hirſute with ſimple hairs, underneath on the neck or below the ſtigma having a convex, ſhining red-orange *ſtruma* or gland [r].

80. Bulb ovate or oval, with a blackiſh ſkin, half the ſize of a hazel nut. Stipe ſubterraneous, about an inch long, terminated by a looſe umbel of leaves and flowers. Leaves ſeveral, villoſe all over on both ſides and at the edges. Petiole jointed at the baſe, round, ſlender, pale, from two to four inches in length. Leaflets ſubſeſſile, dirty green on both ſides, dotted underneath, never livid, ſcarcely half an inch long. Scapes ſeveral, jointed at the baſe, almoſt upright, appearing ſomewhat villoſe when magnified, longer than the leaves, whitiſh; with oppoſite jointed bractes at top. Calycine leaflets oblong, blunt, upright, denſely hirſute on the back and at the edges with ſimple hairs, green, with two orange lines underneath below the tip. Corolla wholly yellow: claws upright, twice as long as the calyx: borders rounded, wider, ſpreading very much. Filaments connate at the baſe: interior hirſute with capitate hairs, except the toothlets, which are ſmooth: exterior ſmooth. Anthers oblong, incumbent, yellow. Germ ovate, pale green, ſubhirſute at top, with a very few yellow calluſes. Styles hirſute with ſimple hairs [s].

81. Bulb deep in the ground. Stipe ſtanding out, cloſely woolly, with one or two woolly ſcales, about half an inch in length, terminating in an umbel of flowers and leaves. Leaves ſeveral, ſmall. Petiole hirſute, half an inch long. Leaflets ſeſſile, wide, with long thick villoſe hairs on both ſides and at the edges. Scapes ſeveral, very hirſute, from half an inch to two inches in length; with oppoſite, lanceolate-linear, acute, concave, villoſe, erect, jointed bractes above the middle. Calycine leaflets lanceolate, acute, hirſute, ciliate, erect. Corolla four times as long as the calyx, villoſe on the outſide, bell-ſhaped: claws erect, yellow: borders obovate, blunt, ſpreading, white. Filaments united at the baſe into a hirſute cylinder: interior hirſute with ſimple hairs; exterior hirſute in like manner,

[m] Jacquin. [n] Idem. [o] Idem. [p] Idem. [q] Idem, from Thunberg. [r] Jacquin. [s] Idem.

ther. Anthers ovate, erect, yellow. Germ hirſute. Styles alſo hirſute, yellow [a].

82. Bulb oval or ovate, half the ſize of a hazel nut, with a hard blackiſh variouſly angular ſomewhat ſtriated and wrinkled ſkin. Stipe ſubterraneous, about half an inch long, terminated by a thinner umbel of leaves and flowers. Leaves ſeveral. Petiole jointed at the baſe, ſlender, weak, round, ſomewhat villoſe, pale green or purple, from one to three inches long. Leaflets ſubſeſſile, ſmooth on both ſides and at the edges, dotted on both ſides, deep green above, bright purple underneath with ſhining golden dots, the third part of an inch in length and breadth. Scapes ſeveral, jointed at the baſe, round, ſomewhat villoſe with capitate hairs, almoſt upright, pale, a little longer than the leaves; with alternate bractes at top. Calycine leaflets ovate, ſharpiſh, erect, ſomewhat hirſute on the back and at the edges with capitate hairs, green with purple edges. Corolla ſix times as long as the calyx: claws erect, yellow: borders obovate, rounded, ſpreading very much, very pale fleſh-coloured. Filaments connate at the baſe; all, together with the tips of the teeth, hirſute with capitate hairs thinly ſet. Anthers incumbent, yellow. Germ pale green, hirſute at top. Styles ſmooth above, ſomewhat hirſute with ſimple hairs below [b].

83. Bulb deep in the ground. Stipe ſtanding out, villoſe, half an inch long, terminating in an umbel of leaves and flowers. Leaves ſeveral. Petiole hirſute, an inch long. Leaflets ſeſſile, hirſute on both ſides and at the edges, ſmall. Scapes ſeveral, villoſe, an inch and half long; with bractes at top, oppoſite, lanceolate, villoſe, jointed. Calycine leaflets oblong, rounded and blunt, ciliate, hirſute, erect. Corolla four times as long as the calyx, bell-ſhaped: claws erect, yellow: borders obovate, rounded, ſpreading very much, ſmooth, purple or variegated. Filaments connate at the baſe, ſmooth. Anthers oblong, incumbent. Germ roundiſh-ovate, hirſute at top. Styles hirſute with ſimple hairs [c].

84. Bulb ovate or oval, with a blackiſh-brown ſkin, half the ſize of a hazel nut. Stipe ſubterraneous, about an inch in length, terminated by a looſe umbel of leaves and flowers. Leaves ſeveral, the whole ſomewhat villoſe on both ſides and at the edges. Petiole jointed at the baſe, round, ſlender, from two to four inches in length, pale. Leaflets ſubſeſſile, dirty green on both ſides, dotted underneath and ſeldom livid, ſcarcely half an inch in length. Scapes ſeveral, jointed at the baſe, whitiſh, almoſt upright, appearing ſomewhat hirſute when magnified, longer than the leaves, ſometimes marked with red ſpots below the flower; with oppoſite jointed bractes at top. Calycine leaflets lanceolate, bluntiſh, upright, thinly hirſute underneath and at the edges with ſimple hairs, bloodred ſpotted below on the diſk of the back and marked with two yellow lines below the tip, in other parts pale green. Corolla wholly yellow: claws erect, twice as long as the calyx: borders rounded, wide, ſpreading very much. Filaments connate at the baſe: interior hirſute with capitate hairs; the toothlets ſmooth: exterior ſmooth. Anthers incumbent, yellow. Germ oblong, pale green with a few hairs and a few orange calluſes above. Styles hirſute with capitate hairs [d].

85. Bulb oval, with a blackiſh-brown hard ſkin, an inch long. Stipe ſubterraneous, ſcarcely an inch in length, terminated by a denſe umbel of leaves and flowers. Leaves very many, ſpreading in a ring. Petiole jointed at the baſe, roundiſh, thick, very hirſute, purple, from one to two inches in length. Leaflets dotted on both ſides, villoſe at the edges, ſomewhat firm and veined, ſmooth and dark green above, underneath blood-red with the upper margin cinereous-green, ſhining with golden dots, and appearing ſomewhat villoſe when magnified; the middle one frequently three quarters of an inch long and an inch wide. Scapes ſeveral, jointed at the baſe, round, pale, hirſute with thick hairs, almoſt upright or ſpreading a little, an inch and half long, more ſlender than the petioles; with alternate bractes about the middle. Calycine leaflets ovate, ſharpiſh, more cloſely ciliate at the edges with thick hairs, in other parts ſmooth or villoſe only in the magnifier, very pale green, having orange lines on each ſide at the tip, erect with the tips bent back. Corolla ſeveral times as long as the calyx: claws rolled up into a funnel, dirty white on the outſide, yellow within: borders wide, rounded, longer than the claws, ſpreading very much, white on both ſides. Filaments connate at the baſe: interior thinly hirſute with ſimple hairs: exterior ſmooth. Anthers incumbent, yellow. Styles very hirſute with ſimple hairs [e].

86. Bulb oval or ovate, with a blackiſh-brown hard ſkin, about an inch in length. Stipe ſubterraneous, very ſhort, terminated by an umbel of leaves and flowers. Leaves ſeveral, ſpreading in a ring. Petiole jointed at the baſe, roundiſh, very hirſute, purple, one or two inches long. Leaflets dotted on both ſides, villoſe at the edges, ſomewhat firm and veined, ſmooth and dark green above, underneath deep bright blood-red, ſhining with golden dots, and ſomewhat villoſe when magnified, about half an inch in length and breadth. Scapes ſeveral, very ſhort, ſcarcely half an inch long, jointed at the baſe, round, hirſute with thick hairs, almoſt upright, pale; with alternate bractes above the middle. Calycine leaflets ovate, bluntiſh, thinly ciliate at the edges with thick hairs, in other parts ſmooth, or when examined by a glaſs ſomewhat villoſe, very pale green with the edges red below, and orange lines at each ſide at the tip, upright except at the tips, which are turned back. Corolla ſeveral times longer than the calyx: claws rolled up in form of a funnel, whitiſh on the outſide, yellow within: borders obovate, rounded, the length of the claws, ſpreading very much, white on both ſides, with a bluſh of carnation within above the baſe. Filaments connate at the baſe: interior equal, hirſute with capitate hairs: exterior ſmooth. Anthers incumbent, yellow. Germ oblong, ſomewhat villoſe above, pale green. Styles very hirſute with moſt minutely capitate hairs [f].

87. Bulb oval or ovate, with a blackiſh ſkin, half the ſize of a hazel nut. Stipe ſubterraneous, about an inch in length, terminated by a looſe umbel of leaves and flowers. Leaves ſeveral. Petiole jointed at the baſe, round, ſlender, villoſe, pale green, from two to three inches in length. Leaflets ſubſeſſile, dirty green and dotted on both ſides, villoſe on the back and at the edges, ſmooth on the upper ſurface, ſcarcely half an inch in length and breadth. Scapes ſeveral, with a longer joint than ordinary at the baſe, manifeſtly villoſe, almoſt upright, pale, about the ſame length with the leaves; with oppoſite jointed bractes at top. Calycine leaflets oblong, bluntiſh, erect, thinly hirſute on the back and at the edges with ſimple hairs, pale green, with two yellow lines underneath below the tip, and ſometimes variegated at bottom with bloody ſpots. Corolla wholly yellow: claws upright, twice as long as the calyx: borders rounded, wider, ſpreading very much. Filaments connate at the baſe: interior equal, hirſute with capitate hairs; toothlets ſmooth: exterior ſmooth. Anthers incumbent, yellow. Germ pale green, ſmooth, callous at top. Styles very hirſute with capitate hairs [g].

88. Bulb in the young plant ovate, covered with a brown ſkin, twice the ſize of a pea. The root in the mature plant conſiſts of ſeveral legs ſlenderly fuſiform, terminating in a long fibre, round, the thickneſs of a reed and more, ſome inches in length, fleſhy, brittle, pale, ſomewhat pellucid and ſweet. Stipes very many, herbaceous, round, the thickneſs of a pigeon's quill or even of a reed, thick, green or purpliſh brown, a foot and half high, upright but ſo weak as not to be able to ſupport themſelves without aſſiſtance, at the baſe and origin of the branches having an ovate-acuminate ſtipule; both they and the branches terminated by diſtant umbels of leaves and flowers. Leaves ſeveral, at remote diſtances in whorls. Petiole jointed at the baſe, round, ſlender, ſmoothiſh, ſpreading a little,

[a] Jacquin from Thunberg.
[b] Jacquin from Thunberg.
[c] Jacquin.
[d] Jacquin.
[e] Jacquin.
[f] Idem.
[g] Idem.

about

about two inches in length, green. Leaflets on ſhort petioles, equal, quite entire, flat, ſpreading very much, about half an inch in length, above green and ſmooth, underneath dotted, more or leſs purple-fleſh-coloured, appearing denſely villoſe in the magnifier, with a row of orange dots, becoming black in the dried leaves, and obſervable only in the microſcope with the light thrown on it. Peduncles jointed at the baſe, axillary, round, pubeſcent in the magnifier, green, the length of the leaves; with bractes towards the top oppoſite, erect and jointed: above theſe they are nodding and purple. Calyx villoſe: leaflets oblong, blunt with a little point, erect with ſpreading tips, green, gibbous on the back below the tip with three or four calluſes, which are oblong and yellow. Corolla bell-ſhaped, three times as long as the calyx, ſmooth: claws yellow, almoſt upright, a little longer than the calyx: borders wide, rounded, ſpreading very much and reflex, whitiſh with a ſlight bluſh of purple. Filaments connate at the baſe: interior equal, hirſute with ſimple and capitate hairs; the toothlets alſo hirſute: exterior ſmooth. Anthers oblong, incumbent, yellow. Germ oblong, five-grooved, pale green, ſmoothiſh. Styles hirſute with ſimple and capitate hairs. Stigmas papilloſely muricated, not pencilled [b].

Cultivated in 1739, by Mr. Miller [c].

89. Stipe filiform, ſmooth, ſtriated, leafleſs, looſe, a foot high and more, together with the branches terminated by a denſe umbel of leaves and flowers. Branches alternate, directed one way, ſtriated, upright. Leaves ſeveral, ſmooth. Petiole jointed at the baſe, ſtriated, about an inch long. Leaflets ſubſeſſile, green, having glandular dots thinly ſcattered over the edges. Scapes ſeveral, jointed at the baſe, hairy, longer than the leaves, with oppoſite, jointed, briſtle-ſhaped bractes, tawny at the tip, a little above the middle. Calycine leaflets oblong, blunt with a point, rough-haired, ſomewhat ſtriated, glandular, tawny at the tip. Corolla three times as long as the calyx, yellow at the baſe, in other parts violet. Filaments united at the baſe into one hirſute body: interior very ſhort toothletted, equal, hirſute with ſimple hairs: the toothlets alſo hirſute: exterior ſmooth. Germ hirſute. Styles hirſute with ſimple hairs [d].

Theſe are all natives of the Cape of Good Hope.

90. Stipe ſcaly, leafleſs, ſimple, terminating in a leafy flowering umbel. Leaves ſeveral, petioled. Leaflets ſeſſile, cloven beyond the middle, cleſts lanceolate. Scape ſingle, with two bractes about the middle. Flower long.—Native of Virginia [e].

91. Root perennial, branched, round, knobbed, creeping, with very fine fibrils on every ſide, partly white, partly red, having an ovate acute thick rigid ſcale like a tooth at the knobs. Stipe partly ſubterraneous, partly ſtanding out, ſometimes very little, ſometimes ſeveral inches, then procumbent and ſtriking roots into the ground, toothletted at the knobs like the root, round, ſomewhat hirſute, red, cloſely toothletted above with the permanent joints of decayed leaves, perennial, putting forth from its top ſeveral aggregate leaves and ſcapes. Petiole jointed, round, ſomewhat hirſute, red eſpecially at bottom, from two to three inches long, almoſt upright but weak. Leaflets ſubſeſſile, near half an inch long, wider, green and hirſute on both ſides, ſhortly ciliate. Scapes one or two, jointed at the baſe, round, ſomewhat villoſe, red, the length of the leaves; with embracing, villoſe, jointed bractes above the middle. Calycine leaflets oblong, acute, ſometimes bifid, ſomewhat hirſute, ciliate, purple at the tip, upright. Corolla three times as long as the calyx, white, beautifully veined with purple, bell-ſhaped: claws upright: borders obovate, rounded, ſpreading very much. Filaments very ſlightly connate at the baſe, ſmooth: interior toothleſs, equal. Anthers oblong, incumbent, pale yellow or whitiſh. Germ ovate, ſmooth. Styles ſmooth. Capſule blunt, ſmooth [f], ovate-oblong, membranaceous, diaphanous, five-cornered, five-lobed, five-celled, ten-valved, opening longitudinally at the external angles. Receptacle none, except two papillæ, ſurrounded by a yellow ring, in the central angle of the cells, to each of which one ſeed is faſtened. Seeds regularly two, ſcarcely ever more, ovate, compreſſed like a lens, with rugged, raiſed ſtreaks, ruſſet-yellow: a fleſhy white aril inveſts the whole ſeed, at firſt ſmooth and cloſed on every ſide, but at length opening elaſtically at the tip and rolling back, it wrinkles up and throws off the ſeed with conſiderable force [g].

Mr. Curtis remarks, that the leaflets are of a yellowiſh green colour, frequently purple underneath; that the petiole proceeds from a little bulb, which forms a kind of ſheath to it, and that although round at bottom, the upper part is grooved on one ſide; that the calycine ſegments are bluntiſh and membranous at the edges; that the petals adhere together from the baſe juſt above the claws, which bend a little inward, that they are ſlightly crenated and tinged at bottom with yellow; that the anthers are bilocular; that the germ is four-cornered, the ſtyles very ſlender and a little longer than the ſtamens, and the ſtigmas blunt; that there are three heart-ſhaped ſeeds in each cell, grooved longitudinally, of a bright reddiſh brown colour; that like the Violet it continues producing ſeed-veſſels and ſeeds during the greateſt part of the ſummer, without any appearance of expanded bloſſoms, which are only obſervable in april and may; and that as it has done flowering, the flower-ſtalk, as in many other plants, bends down, and when the ſeed is ripe, again becomes upright.

Linneus remarks, that the leaflets in wet weather are erected, but hang down in dry weather. They are alſo ſaid by ſome authors to manifeſt a degree of ſenſibility on being ſtruck.

Villars obſerves, that this elegant little plant has the leaves of Trefoil, the taſte of Sorrel, and the flower of Geranium: from which laſt genus this is diſtinct, according to Juſſieu, in the number of ſtyles, the form of the capſule and manner of its opening, its ſtraight corcle or heart, without any periſperm or albumen.

Wood-Sorrel is common in Europe in woods, and occurs alſo among buſhes, in hedges and on heaths. It is alſo found in Japan. It is called, ſays Gerarde, Wood Sour, Sour Trefoil, Stubwort, and Sorell du Bois; by herbariſts Alleluya and Cuckow's meat, "by reaſon when it ſpringeth forth and flowereth, "the Cuckow ſingeth moſt, at which time alſo Alle-"luya was wont to be ſung in churches." The names Alleluya and Lujula however are corrupted from the Calabrian name *Juliola*. It is called *Stubwort*, I preſume, from its covering the ground among the ſtubs in coppices, when they are cut down. In French it is *la petite Oſeille* or *Surelle*, and *Pain à Coucou*.

A variety is found with purple flowers. It is ſaid to be a leſs plant and to flower later. In a hollow lane between Owram and Hallifax.

Wood Sorrel has a grateful acid taſte, more agreeable than common Sorrel, and therefore proper to be uſed in ſalads: its acid approaches nearly to that of the juice of lemons, or the acid of tartar, with which it alſo correſponds in its medical effects, being eſteemed refrigerant, antiſcorbutic and diuretic. An infuſion of the leaves, or a whey made by boiling the plant in milk, is uſeful in ardent fevers, to allay inordinate heat, and to quench thirſt [h]. The London College directs a conſerve of the leaves and petals to be made by beating them with thrice their weight of fine ſugar, and orange peel. It is called *Conſerva Lujulæ*. The expreſſed juice depurated, properly evaporated, and ſet in a cool place, affords a chryſtalline acid ſalt in conſiderable quantity, which may be uſed wherever vegetable acids are wanted. It is employed to take iron moulds and ink-ſtains out of linen, and is ſold under the name of eſſential ſalt of Lemons [i]. This ſalt, when genuine, which it ſeldom is, conſiſts of the vegetable alkali and a peculiar acid, which according to Bergman ſeems more allied to the acid of ſugar than

[b] Jacquin. [c] Hort. kew. [d] Jacqu. from Thunberg. [e] Jacqu. from Linn. [f] Jacquin. [g] Gærtner. [h] Woodville. [i] Withering.

than that of tartar. What is ſold for it in this country appears ſometimes to conſiſt of C. Tart. with the addition of a ſmall quantity of vitriolic acid [a]. For taking out ſpots in linen, the ſtained part is dipped in water, ſprinkled with a little of the ſalt powdered, then rubbed on a pewter plate, after which the ſpot is waſhed out with warm water [b].

Dr. Beddoes informs us that the leaves and ſtalks wrapped up in a cabbage leaf, and macerated in warm aſhes until reduced to a pulp, have been ſucceſsfully applied to ſcrophulous ulcers. This poultice ſhould remain on the ſore for twenty-four hours, and be repeated four times. Afterwards the ulcer is to be dreſſed with a poultice made of the roots of the Meadow-ſweet (Spiræa Ulmaria) bruiſed and mixed up with the ſcum of ſour butter-milk [c].

Doubtleſs ſome of the foreign ſpecies may be ſuperior to this in the ſame way. Thunberg ſays that Oxalis cernua grows to the greateſt ſize and in the greateſt abundance of any ſpecies at the Cape of Good Hope, and that a good ſalt was prepared from it [d]. But he does not inform us in what quantity. Twenty pounds of our Wood Sorrel leaves freſh yield ſix pounds of juice, from which two ounces, two drams and one ſcruple of ſalt have been obtained [e].

92. Bulb ovate, acute, often looſe, covered with a browniſh ſkin. Stipe ſubterraneous, two inches or more in length, terminated by an umbel of leaves and flowers. Leaves ſeveral, quite ſmooth, digitated, ſpreading out wide in a ring. Petiole jointed at the baſe, the joint wide, channelled and embracing, compreſſed a little, thick. Leaflets about eight, oblong or lanceolate-oblong, bluntiſh, glaucous-green above, frequently dark purple underneath, dotted on both ſides, about an inch long. Scapes few, jointed at the baſe, upright, compreſſed a little, thick, ſmooth, almoſt the ſame length with the leaves: bractes approximately alternate at top. Calycine leaflets ovate, ſharpiſh, upright, green. Corolla ſeveral times as long as the calyx, all yellow. Claws upright. Borders very wide, rounded, ſpreading very much, ſmooth, with one ſide of the back red. Filaments connate at the baſe: interior toothletted, equal, hirſute with ſhort capitate hairs thinly ſet; toothlets ſmooth: exterior alſo hirſute. Anthers oblong, incumbent, yellow. Germ half-ovate, ſmooth, pale green. Styles ſmooth [f].

93. Bulb roundiſh, the ſize of a hazel nut, covered with a brown ſkin. Stipe ſtanding out, ſcaly, ſmooth, the ſize of a pigeon's quill, thickened above, purple, leafleſs, almoſt upright, but through weakneſs frequently proſtrate, from half an inch to three inches in length, terminating in an umbel of leaves and flowers. Leaves about five digitate, ſmooth. Petiole narrowly and ſhortly jointed at the baſe, compreſſed a little, thick, firm, green or red, one or two inches long. Leaflets from five to nine, ſeſſile, lanceolate-linear, blunt, quite entire, ſometimes recurved at the tip, very minutely dotted on both ſides, but much more apparently underneath, green, almoſt upright, from one to two inches in length. Scapes ſeveral, narrowly and ſhortly jointed at the baſe, almoſt half round, ſmooth, almoſt upright, of the ſame length and thickneſs with the petioles: bractes alternate, near the top. Calycine leaflets lanceolate, acute, erect with the tips ſpreading, pale green, with dirty purple dots ſcattered over them above, ciliate on the edges with capitate hairs, in other parts ſmooth. Corolla three times as long as the calyx, ſubcampanulate, the whole yellow, except the back of the borders, which is purple: borders obovate, rounded, quite entire, wide. Filaments united at the baſe: interior toothletted, equal, having very ſhort capitate hairs thinly ſcattered over them, with ſmooth toothlets: exterior hirſute with capitate hairs. Anthers oblong, incumbent, yellow. Germ ovate-oblong, five-grooved, ſmooth, pale. Styles ſomewhat hirſute with capitate hairs underneath, in other parts ſmooth [g].—Introduced in 1775, by Mr. Francis Maſſon [h].

94. Bulb ovate-roundiſh, covered with a brown ſkin, the ſize of a hazel nut, commonly looſe. Stipe ſubterraneous, ſtanding out above and furniſhed there with large imbricate ſcales, about an inch in length, the thickneſs of a reed, ſmooth, round, terminated by an umbel of leaves and flowers. Leaves ſeveral, ſmooth, digitate. Petiole jointed at the baſe, roundiſh, thick, green, almoſt upright, weak, three or four inches long. Leaflets from ſix to nine, blunt, dotted, almoſt upright, three inches long, and three or four lines wide. Scapes ſeveral, having a long joint at the baſe, almoſt upright, weak and therefore often reclining, roundiſh, the ſame thickneſs with the petioles, ſmooth, pale green: with bractes approximately alternate above. Calycine leaflets four, lanceolate, erect with a bluntiſh reflex tip, ſmooth, pale green; a fifth double the ſize of the others, ſpatulate, rounded, and the whole erect. Corolla three times as long as the calyx, dark yellow within, ſulphur-coloured without, bell-ſhaped, wide, ſpreading very much above. Filamens connate at the baſe: interior toothletted, equal, very hirſute with capitate hairs; the toothlets ſmooth: exterior hirſute in like manner. Anthers incumbent, yellow. Germ oblong, ſmooth, pale green. Styles hirſute like the filaments [i].

95. Bulb ovate, leſs than a hazel nut, covered with a brown ſkin, looſe, putting forth a long thick fibre from its baſe. Stipe partly under, partly above ground, about an inch and half in length, ſcaly at top, almoſt upright, round, thicker than a pigeon's quill, ſmooth, purple, terminated by an umbel of leaves and flowers. Leaves ſeveral, almoſt upright. Petiole jointed at the baſe, round, dirty purple, almoſt as thick as a pigeon's quill. Leaflets ſeven or eight, oblong-linear, blunt, quite entire, green on both ſides except the midrib at the back and the baſe of the upper ſurface, which are dirty purple, three or four inches long, three or four lines wide. Scapes ſeveral, jointed at the baſe, round, ſmooth, almoſt upright, nearly the ſame length with the leaves: bractes approximately alternate above. Calycine leaflets lanceolate, blunt, ſmooth, light purple, upright, equal; ſometimes but very ſeldom one of them larger and ſpatulate. Corolla five times as long as the calyx, ſmooth, yellow: claws upright, almoſt twice as long as the calyx: borders rounded, wide, ſpreading very much, with one ſide of the back more or leſs red. Filaments connate at the baſe: interior toothletted, equal, hirſute with capitate hairs, except the toothlets, which are ſmooth: exterior hirſute in like manner. Anthers oblong, twin, erect, yellow. Germ ovate, ſmooth, pale green. Styles hirſute with capitate hairs [k].

Jacquin having figured this ſpecies both in its cultivated and wild ſtate, the difference between them may there be ſeen.

96. Bulb oval, with a brown ſkin, leſs than a hazel nut, growing very deep in the ground. Stipe ſubterraneous, two or three inches long, terminated by an umbel of flowers and leaves. Leaves ſeveral, peltately multidigitate. Petiole from a wide baſe, not jointed, round, very hirſute, erect, pale green or dirty purple, in the wild plant about an inch, in the cultivated plant from two to four inches in length. Leaflets about twelve, ſpreading in an umbel, oblong-wedge-ſhaped, converging, emarginate, dotted on both ſides, ſmooth above, denſely hirſute underneath, ciliate with ſimple hairs in and about the edges, about half an inch in length. Scapes few, not jointed, very hirſute, ſpreading, about the ſame length with the leaves. Calycine leaflets lanceolate, acute, hirſute, ciliate, erect. Corolla ſix times as long as the calyx, bell-ſhaped, villoſe on the outſide: claws erect: borders obovate, rounded, white. Filaments united at the baſe: interior toothletted, equal; ſomewhat hirſute at top with ſimple hairs, in other parts ſmooth: exterior ſmooth. Anthers oblong, incumbent. Germ ovate, hirſute. Styles hirſute with long ſimple hairs [l]. Jacquin has figured the wild and cultivated plant in the ſame plate; the latter has never flowered in Europe.

[a] Woodville. [b] Curtis from Newm. Chem. by Lewis. [c] Fact. Airs. and Wither. arr. 430. n. [d] Travels, 1. 293. engl. edit. [e] Lewis. [f] Jacquin. [g] Idem. [h] Hort. kew. [i] Jacquin. [k] Idem. [l] Idem.

The five laſt ſpecies are natives of the Cape of Good Hope.

An attention to the general diſtinctions given above, in the enumeration of the ſpecies, and at the head of the deſcriptions, together with the following circumſtances, will much facilitate and abbreviate the diſcrimination of the ſpecies, which are ſo numerous in this genus.

In n. 1 to 5, 8 to 12 and 91 the root is branched; in n. 6. it is turbinate; in n. 7. fuſiform; in n. 21. fibrous; in n. 91. knobbed; in the reſt it is bulbous.

The ſpecies with ternate leaves being moſt numerous, it may be uſeful to obſerve, that the leaflets are obovate, lanceolate or oblong in n. 41 to 46; linear from n. 47 to 54; all wedge-ſhaped in n. 55 to 58; the middle leaflet wedge-obovate, and the lateral ones oblong in n. 59 to 66; all roundiſh and ſcarcely emarginate in n. 67 to 76; all or the middle leaflet only obcordate in 77 to 91.

The peduncle or ſcape is not jointed in n. 2. 4. 22 to 27. 30. 34. 40. 47. 78. 96; in the reſt it is jointed. Moſt of the ſpecies have two bractes on the flower-ſtem; but n. 34, 35, 36. have not any. N. 40. has only one bracte; and ſome of the cauleſcent ſpecies have an involucre of ſeveral leaflets.

The two bractes are oppoſite in n. 11. 13, 14. 17, 18, 19. 25. 31. 46. 59 to 66. 76. 78 to 81. 83, 84. 87 to 91. In the reſt they are alternate. In ſome of the ſpecies they are ſubalternate or ſuboppoſite, and cannot therefore very eaſily be diſtinguiſhed.

The ſituation of theſe bractes on the ſcape or peduncle is alſo worth remarking. In the following ſpecies they are at or near the bottom; n. 13, 14, 18, 19. 67, 68. 70, 71. 73, 74, 75. 77, 78, 79. In n. 17, 26. 38. 53. 59. 61. 66. 69. 76. 81. 86. 89. 91. above the middle. In n. 11. 63, 64. 72. 85. 90. in or near the middle. In n. 33. 42, 43. 60. 62. 65. below the middle. In n. 22 to 25. 31. 37. 39. 44 to 47. immediately below the calyx. In the reſt they are near the top, or higher than thoſe which are above the middle; but lower than thoſe which approximate to the calyx.

The prevailing colour of the Corolla is yellow: in many however it is red, violet purple, red purple or fleſh-coloured, as in n. 4. 5. 14. 17. 18. 22 to 30. 32. 33. 34. 36. 45 to 50. 54. 67, b. 69. 70. 74. 76. 82. 83. 89. In n. 15. it is blue or fleſh-coloured. In n. 51. 53. 63, b. 67. 68. 75. 88. 91. 96. it is white and red. In n. 58. white and violet. In n. 37. 39. 44. 52. 55. 56. 59. 60. 61. 62. 64. 66. 71. 72. 73. 78. 79. 81. 85. 86. 96. it is white. Theſe have frequently a tinge of yellow, red or purple. In all the reſt the corolla is yellow.

The filaments are free or ſeparate in n. 21. and in ſome, as n. 13. 35. 40. 91. they are very ſlightly united at the baſe, ſo that in n. 13. particularly they may almoſt be conſidered as diſtinct. In the other ſpecies they are monadelphous.

Some of theſe filaments are ſmooth: as n. 11. 13. 16. 19. 25. 31. 35. 40. 44. 47. 50. 57. 58. 78. 83. 90. The others have the interior filaments hairy, either with ſimple hairs, as in n. 1. 2. 14. 15. 21 to 24. 28. 30. 43. 49. 64. 77. 81. 85. 89. 96: or capitate hairs, as in n. 4. 9. 10. 26. 27. 29. 32 to 34. 36 to 39. 41. 42. 45. 46. 48. 52 to 56. 59 to 63. 65 to 76. 79. 80. 82: or both, as in n. 17. 18. 51. 88. The following only have the exterior filaments hairy; n. 15. 21 to 24. 27. 28. 30. 31. 33. 41. 45. 46. 48. 49. 51. 56. 57. 58. 67. 68. 69. 81. 82. 84. 92 to 95: in the reſt they are ſmooth.]

PROPAGATION AND CULTURE.

The European and North American ſorts require no particular culture. If the roots of the common Wood Sorrel are planted in a moiſt ſhady border, they will thrive and multiply, and if kept clean from weeds will require no other care. If the ſeeds of the other ſorts are ſown in an open border, the plants will riſe freely, and if they are permitted to ſcatter, there will be a plentiful ſupply of plants.

The numerous ſpecies from the Cape of Good Hope, muſt be planted in pots, which may be ſheltered in the dry ſtove, or under a hot-bed frame in winter, where they may have as much free air as poſſible in mild weather. Moſt of them may be eaſily increaſed by offsets from the roots, or bulbs which come out from the ſide of the ſtalks, generally in great abundance.

[Of O. reptatrix in particular Jacquin ſays that as it runs along it puts forth bulbs in ſuch abundance as in a ſhort time to fill the pots with plants; but that in four years during which he had cultivated it, he had only a ſingle flower; which is common in plants that are ſuffered to run at the roots.]

The ſorts from the Eaſt and Weſt Indies being more tender than theſe, require to be placed in a ſtove kept to a moderate degree of warmth in winter. They are propagated by ſeeds, ſown in pots, plunged into a moderate hot-bed. When the plants come up, ſet them ſingly in pots filled with light ſandy earth, and plunged into a freſh hot-bed, ſhading them from the ſun till they have taken new root; after which they muſt be treated in the ſame manner as other tender plants from the ſame countries.

[Jacquin remarks, of O. Barrelieri (n. 4.) from South America, that when ſowed early in the ſpring, it grew luxuriantly in the ſtoves, produced ſeed abundantly, which from the elaſticity of the capſule could not be collected without great difficulty, and that it always periſhed in the winter: but that when it was ſown later in the ſeaſon, it ſometimes continued through the winter, and flowered the next ſpring, but always continued in a langtind ſtate.

OXALIS. See *Portulaca* and *Rumex*.]

OX-EYE. See *Buphthalmum*, [*Anthemis* and *Chryſanthemum*.

OX-SLIP. See *Primula*.

OX-TONGUE. See *Picris*.]

OXYACANTHA. See *Berberis*, [*Cratægus*, *Meſpilus*.

OXYBAPHUS. (*From ὀξὺς acid, and βαφὴ tincture, a dyer, or βαφὴ a colour uſed in dying.*)

L'Heritier monogr. Willd. Lin. ſyſt.

GENERIC CHARACTER.

Cal. five-cleft, bell-ſhaped. *Cor.* funnel-ſhaped. *Nut* five-cornered, one-ſeeded ſurrounded by the unfolded permanent calyx.

SPECIES.

1. Oxybaphus viſcoſus.
L'Herit. mon. cum ic. *Willd. ſyſt.* 185.
Mirabilis viſcoſa. *Cavan. ic.* 1. *n.* 17. *t.* 19.

DESCRIPTION, *&c.*

This plant, which is a native of Peru, and is very nearly allied to *Mirabilis*, under which genus it is ranged by Cavanilles; is made a diſtinct genus by L'Heritier, on account of its having only three ſtamens, and the calyx enlarged and peltate attending the fruit. Cavanilles obſerved three and four ſtamens in the cultivated plant. See his deſcription under *Mirabilis* viſcoſa.

OXYCEDRUS. See *Juniperus*.

OXYCOCCUS. See *Vaccinium*.

OXYLAPATHUM. See *Rumex*.

OXYOIDES. See *Oxalis*.]

OXYS. See *Oxalis*.

OZOPHYLLUM. (*So named from the ſtrong unpleaſant ſmell of the leaves when bruiſed.*)

Lin. gen. Schreb. n. 1105. Ticorea. *Aubl.* 277. *Cavan. diſſ.* 6. 362. *t.* 206. *Juſſ.* 264.

Claſſ. 16. 2. Monadelphia Pentandria.

Nat. order of *Tribilatæ*. Meliæ, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-toothed, acute, very ſmall.

COR. *Petals* five, with long claws converging in form of a tube: *borders* oblong, blunt, ſpreading.

STAM. *Filaments* cylindrical, ſheathing the ſtyle, five-toothed at top. *Anthers* five, oblong, erect.

PIST. *Germ* five-lobed, ſurrounded by a gland. *Style* filiform, higher than the corolla. *Stigma* capitate.

PER. five-celled.

ESSENTIAL CHARACTER.

One-ſtyled. *Cal.* five-toothed. *Pet.* five, long. *Filam.* ſheathing the ſtyle, five-toothed at top; teeth antheriferous. *Stigma* one. *Capſ.* five-celled.

SPECIES.

SPECIES.

1. Ozophyllum foetidum.
Ticorea foetida.
Aubl. guian. p. 689. *t.* 277. *Lin. Syſt. Nat. Gmel. p.* 1009. *Cavan. diſſ. p.* 362.

DESCRIPTION, *&c.*

This is a ſhrub of ten feet high or more, and often four or ſix inches in diameter. The bark is green and ſmooth: the wood white, tender, and fragile. The branches twiggy, and garniſhed with alternate leaves: each leaf is digitated, having three large lobes, and growing on a footſtalk of five or ſix inches long. The lobes of the leaves are green, ſmooth, ſoft, and oval, and terminate in a long point: the middle lobe is larger than the reſt, being ſometimes more than a foot long and four inches wide: each lobe is divided by a longitudinal nerve, which is prominent beneath. The flowers ſpring from the boſoms of the leaves, at the extremity of the twigs and branches. Their common footſtalk is more than a foot long, and divides at its ſummit into ſeveral ſmaller ones, on each of which are placed alternate, ſeſſile flowers. The calyx is green: the corolla white, each petal being about an inch long, and as it were glued or united to each other longitudinally by their borders, ſo as to form a kind of tubular figure, with the upper part ſpreading: theſe petals cover a white membranaceous tube, which on its upper part divides into five ſhort filaments ſupporting at their points the anthers.

This ſhrub is a native of the foreſts of Guiana; flowering in february. The leaves, when bruiſed, emit a diſagreeable ſmell much reſembling that of the Stramonium.

P.

PACHIRA. See *Carolinea.*
PACHYPHYLLA & PACHYPHYLLUM. See *Nicetiana.*
PACIVIRI. See *Canna.*
PACO COATINGA. See *Coſtus.*
PACO SEROCA. See *Alpinia.*
PACOURIA. See *Willughbeia.*
PACTA VALAM. See *Trichoſanthes.*
PADDOCK-PIPE. See *Equiſetum.*
PADRI. See *Bignonia.*
PADUS. See *Prunus* and *Sideroxylon.*
PÆDERIA.
Lin. gen. Reich. n. 317. *Schreb. n.* 412. *Juſſ.* 205.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Contortæ. Rubiaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, turbinate, five-toothed, permanent.
COR. one-petalled, funnel-form, hirſute within. *Border* five-parted, ſmall.
STAM. *Filaments* five, awl-ſhaped, very ſhort, from the middle of the tube. *Anthers* oblong, ſhorter than the corolla.
PIST. *Germ* roundiſh. *Style* capillary, bifid, the length of the corolla. *Stigmas* ſimple.
PER. *Berry* brittle, ovate, inflated.
SEEDS two ovate.

ESSENTIAL CHARACTER.

Contorted. *Berry* void, brittle, two-ſeeded. *Style* bifid.

SPECIES.

1. Pæderia foetida.
Lin. ſyſt. 250. *Reich.* 1. 589. *Willd.* 1219. *mant.* 52. *Retz. obſ.* 1. 13. *Thunb. jap.* 106. *Kempf. ic. ſelect. t.* 9. *Lamarck. encycl.* 2. 257. *t.* 166. *f.* 1.
Convolvulus foetidus. *Rumph. amb.* 5. 436. *t.* 160.
Stamens included.

2. Pæderia fragrans.
Lin. ſyſt. Willd. 1219. *Lamarck. encycl.* 2. 258. *t.* 166. *f.* 2.
Stamens ſtanding out.

DESCRIPTION, *&c.*

1. Stem twining, filiform, ſmooth and even. Leaves oppoſite, petioled, cordate, acuminate, quite entire, nerved, ſpreading a little, paler underneath, an inch long, very ſmooth and even. When the plant is young the leaves are lanceolate, but in its more advanced ſtate they are ovate. Petioles round, grooved above, ſmooth, a little ſhorter than the leaf. Flowers axillary, in brachiate panicles, coming out ſucceſſively. Peduncle round, ſmooth, the length of the petiole. The lower pedicels oppoſite, the upper alternate. Calyx ſuperior, ſmooth; ſegments acute, erect, ſeveral times ſhorter than the corolla. Tube of the corolla inflated, white-tomentoſe on the outſide, within purple, white villoſe at top. Border five or ſix-parted, ſpreading; ſegments rounded, curled, white, a line in length; opening of the tube purple, villoſe, a little cloſed. Filaments five or ſix, faſtened longitudinally to the baſe of the corolla, capillary, red, ſhorter by half than the tube. Anthers inſerted into the back, linear, erect, ſtriated, whitiſh. Germ ſurrounded by a very ſhort wreath, obtuſely ſix-lobed, ſmooth, purple. Style erect, the length of the filaments, purple. Stigmas two, capillary, curled, whitiſh, longer than the anthers. Fruit a berry crowned with the calyx, globular, when unripe green, very ſmooth and brittle, commonly two-celled, ſometimes but rarely three-celled. Seeds two or three.

Frequently the calyx is ſeven-leaved, and the corolla ſeven-cleft; ſometimes the calyx is ſix-leaved. It is now and then found with ſeven ſtamens. In drying the plant turns black. When freſh it has a very ill ſmell. It varies with wider, ſhorter leaves; and with narrower, longer leaves [a].

Retzius informs us, that beſides the ſpecimen which he had from Linneus, with a twining ſtem, and cordate acuminate leaves, tomentoſe underneath: he had another from Bladh, with the branches ſtiff and ſtraight, the leaves ſmooth, oblong, linear-lanceolate, blunt, and the panicle more denſe. He does not determine whether they are diſtinct ſpecies or varieties only. Both have the flowers racemed, in a dichotomous or trichotomous panicle.—Native of the Eaſt Indies and Japan.

2. This differs from the preceding chiefly in having wider ovate acuminate leaves, many-flowered cymes, and the ſegments of the corolla narrower and ſharper, beſides the diſtinction pointed out in the ſpecific character.—Native of the iſland of Mauritius [b].

PÆDEROTA.
Lin. gen. n. 26. *Reich. n.* 27. *Schreb. n.* 33. *Juſſ.* 120. Bonarota. *Mich.* 15.
Claſſ. 2. 1. Diandria Monogynia.
Nat. order of *Perſonatæ. Scrophulariæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-parted: *leaflets* linear, equal, ſpreading, permanent.
COR. one-petalled, ſomewhat wheel-ſhaped, four-cleft, blunt; upper lobe wider, generally emarginate.
STAM. *Filaments* two, filiform, aſcending, ſhorter than the corolla. *Anthers* converging, ovate, acute, two-valved.
PIST. *Germ* ovate. *Style* awl-ſhaped, bent down, the length of the ſtamens, permanent.
PER. *Capſule* ovate, longer than the calyx, two-celled, opening at top.
SEEDS very many, roundiſh.
OBS. *It is allied to* Veronica, *but differs in having a five-parted calyx.*

ESSENTIAL CHARACTER.

Cor. four-cleft. *Cal.* five-parted. *Capſ.* two-celled.

SPECIES.

1. Pæderota Ageria.
Lin. ſpec. Willd. 77. *ſyſt.* 61. *mant.* 171.
P. lutea. *Lin. ſuppl.* 84. *Scop. ann.* 2. 41.
B. Bonarota. *Jacqu. hort.* 2. *t.* 121.

[a] Thunberg. [b] Willdenow.

Bonarota montana italica Chamædryos folio minus crenato. *Mich. gen.* 19. *n.* 3.
Leaves ovate-acuminate, helmet of the corollas bifid.

2. Pæderota Bonarota.
Lin. spec. Willd. 77. *spec.* 20. *syst.* 61. *Jacqu. austr.* 5. *app. t.* 39.
P. cærulea. *Lin. suppl.* 84.
Bonarota chamædrifolia. *Scop. carn. n.* 26.
Veronica Bonarota. *Lin. spec. ed.* 1. 11.
Chamædrys montis Sumani. *Baub. hist.* 3. 289.
B. montana italica, Chamædryos folio, flore cæruleo. *Mich. gen.* 19. *n.* 2. *t.* 15. *f.* 2.
β. B. fol. rotundiore circinato, spica cærulea habitiore. *Mich. gen.* 19. *n.* 2. *t.* 15. *f.* 2.
Leaves roundish-ovate, helmet of the corollas entire.

3. Pæderota? minima.
Lin. spec. Willd. 77. *Retz. obs.* 5. 10.
Leaves oblong entire opposite, flowers axillary opposite, teeth of the calyxes hirsute within.

DESCRIPTIONS, *&c.*

1. This differs from the second in having simple stems, the lower leaves alternate, dryer, more wrinkled and not at all shining, the helmet bifid and entire, ascending. [c].—Native of Italy and Carniola. It has the trivial name, from Agerius, who first found it near Vicenza.

2. Root branched, fibrous, perennial. Stems round, simple, villose, erect. Leaves opposite, dry, acutely serrate. Raceme terminating, oblong. Bracte longer than the calyx, linear, placed close to the corolla. Corolla yellow, four lines in length, with the lip equally trifid. Style five lines long, slightly dilated at top and truncated, incumbent on the lower lip. The cells of the capsule separate in such a manner, that they might be taken for two capsules, if it were not for the single receptacle. Seeds rufous, twenty-five at most in a cell [d].

Micheli's n. 2. f. 2. with a rounder leaf, is a variety of this. Scopoli has given eight varieties.—These are natives of the mountains of Austria, Carniola and Italy. Micheli named these plants *Bonarota*, from Filippo Bonarota, Senator of Florence, fellow of the Botanic Academy there, &c.

3. This has the appearance of Elatine Hydropiper. Stems an inch and half high, seldom branched, rooting at the base. Leaves blunt, quite entire, naked. Flowers sessile, solitary. Calyx five-cornered, bell-shaped, with the teeth hirsute within. Native of the East Indies, where it was found by Koenig, on whose authority it is placed in this genus [e].

Pæderota racemosa of Houttuyn is Hemimeris montana, *Lin. suppl.*]

PÆONIA (*of Pliny*; Παιωνια *of Hippocrates and Dioscorides: from Pæon, a famous physician of antiquity.*)
Lin. gen. n. 678. *Reich. n.* 732. *Schreb. n.* 920. *Tournef. t.* 146. *Juss.* 234. *Gærtn. t.* 65.
Class. 13. 2. Polyandria Digynia.
Nat. order of *Multisiliquæ*. *Ranunculaceæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, small, permanent: *leaflets* roundish, concave, reflex, unequal in size and situation.

COR. *Petals* five, roundish, concave, narrower at the base, spreading, very large.

STAM. *Filaments* numerous, (about three hundred) capillary, short. *Anthers* oblong, quadrangular, erect, four-celled, large.

PIST. *Germs* two, ovate, erect, tomentose. *Styles* none. *Stigmas* compressed, oblong, blunt, coloured.

PER. *Capsules* as many, ovate-oblong, spreading and reflex, tomentose, one-celled, one-valved, opening longitudinally inwards.

SEEDS several, oval, shining, coloured, fastened to the the opening future.

OBS. *The most natural number of the germ seems to be two, but it varies much in the species. It hardly ever amounts to five.*

ESSENTIAL CHARACTER.

Cal. five-leaved. *Pet.* five. *Styles* none. *Capf.* many-seeded.

SPECIES.

[1. Pæonia albiflora. *White-flowered Peony.*
Pallas rosf. 92. *t.* 84.
P. lacteo flore, foliis utrinque viridantibus et splendentibus. *Gmel. ap. Amman. stirp. ruth.* 77. *n.* 103. *Flor. sibir.* 4. 184. *n.* 13.
Leaves ternate, leaflets lobed joining, germs in threes smooth.]

2. Pæonia officinalis. *Common Peony.*
Lin. spec. 747. *syst.* 502. *Reich.* 2. 609. *hort. cliff.* 212. *hort. upf.* 149. *mat. med.* 137. *Sauv. monsp.* 307. *Scop. carn. n.* 650. *Pall. rosf.* 93. *Krock. silef. n.* 830. *Villars dauph.* 3. 701. *Tbunb. jap.* 230. *Lour. cochinch.* 343. *Regn. bot. Mill. illustr.*
α. P. offic. feminea. *Lin. spec.*
P. fœminea. *Mill. dict. n.* 2. *Kniph. cent.* 6. *n.* 69. *Knorr. del.* 1. *t.* R. 3. & *t.* R. 2.
P. communis vel fœmina. *Baub. pin.* 323.
P. fœmina. *Fuchs. hist.* 202. *Lob. ic.* 602. 1. *Matth.* 915. *Cam. epit.* 656. *Ger.* 830. 2. *emac.* 981. 2, 3. *Raii hist.* 694. *Blackw. t.* 65.—vulgaris. *Park. theat.* 1380. *parad.* 341. *t.* 343. *f.* 3, 4.
P. rubra flore simplici. *Besl. eyst. vern. ord.* 6. *t.* 15. & *t.* 10. *f.* 1. & *t.* 12. *f.* 1.
P. radice glandulosa, foliis duplicato-pinnatis, pinnis ellipticis & trilobis. *Hall. helv. n.* 1187.
β. P. offic. mascula. *Lin. spec.*
P. mascula. *Mill. dict. n.* 1.
P. mas. *Lob. ic.* 684. *Matth.* 914. *Ger.* 830. 1. *emac.* 980. *Park. parad.* 341. *t.* 343. *f.* 1. *theat.* 1381. *Raii hist.* 693.
P. folio nigricante splendido, quæ mas. *Baub. pin.* 323.
P. foliis lobatis ex ovato-lanceolatis. *Hall. helv. ed.* 1. 311. *ed.* 2. *vol.* 2. *p.* 82.
γ. P. peregrina. *Mill. dict. n.* 3.
P. peregr. flore fature rubente. *Baub. pin.* 324. *Raii hist.* 696.
P. fœmina byzantina. *Park. parad.* 342. *n.* 6. *t.* 343. *f.* 2.
P. byzantina. *Ger. emac.* 982. *f.* 7. *Clus. hist.* 279.
δ. P. hirsuta. *Mill. dict. n.* 4.
P. foemina flore pleno rubro majore. *Baub. pin.* 324.
P. foem. multiplex. *Ger.* 831. 3. *emac.* 981. 3.
P. foem. vulgaris flore pleno purpureo. *Park. theat.* 1380.—rubro. *Park. parad.* 341. *n.* 3.
P. flore pleno rubro. *Baub. hist. Raii hist.* 696.
ε. P. tatarica. *Mill. dict. n.* 5. *fig. t.* 199.
ζ. P. lusitanica. *Mill. dict. n.* 6.
P. lusit. flore simplici odoro. *Juss.*
Leaves doubly-pinnate sublobed, leaflets oblong, veined underneath.

[3. Pæonia laciniata. *Jagged-leaved Peony.*
Pallas rosf. 93. *t.* 85. (ibirica).
P. anomala. *Lin. syst.* 502. *Reich.* 2. 609. *mant.* 247. *Gmel. sib.* 4. 184. *n.* 14. *t.* 72.
Leaves biternate, leaflets acutely laciniate, germs smooth.

4. Pæonia hybrida. *Mule Peony.*
Pallas rosf. 94. *t.* 86.
Leaves ternate-multisid, segments linear, germs three pubescent.

5. Pæonia tenuifolia. *Slender-leaved Peony.*
Lin. spec. 748. *syst.* 502. *Reich.* 2. 610. *dec.* 9. *t.* 5. *Gmel. sib.* 4. 185. *n.* 15. *t.* 73. *Pallas rosf.* 95. *t.* 87. *Zinn. goett.* 127. *Gærtn. fruct.* 1. 309.
Leaflets linear many-parted, germs two tomentose.

DESCRIPTIONS, *&c.*

1. Root brown, composed of a few cylindrical or fusiform tubers, a span in length, united at top; the flesh white with little taste. Stem, from a radical leafless sheath, two feet high, the thickness of a reed, slender, round, with scarcely conspicuous grooves descending from each petiole down both sides, green tinged with red, naked at bottom. Leaves alternate on long round petioles, channelled above. Leaflets three-parted; segments ovate-lanceolate, the middle one simple, the middle of the lateral ones three-parted

[a] Scop. ann. [b] Scop. carn. [c] Retzius. [d] Willdenow.

or two-parted, the outer ones (only in the loweſt leaves) bifid. The higheſt leaf except one has the lateral leaflets ſimple, and the middle one three-parted; the upper or floral leaf is ſimply three-parted. The whole plant is very ſmooth, and ſhining. The ſtem in the Daurian plant is often three-flowered, with the axils of the upper leaves putting forth long faſtigiate peduncles. The calyx is raiſed above the floral leaf on a very ſhort thick peduncle, and is four-leaved; the two outer leaflets narrow, green, acuminate; the two inner broad-concave, ſubacuminate, pale red. Petals eight, very large, milk white, oval, concave. Stamens about one hundred and fifty, with the filaments as well as anthers yellow. Anthers oblong, erect, four-grooved. Within the ſtamens is a fungoſe, ſubcontinuous, lobed crown, more ſlender than in its congeners. The germs are quite ſmooth, ſhining, conical, purple at the tip. The ſtigma is compreſſed into a comb or creſt, and is ſuborbicularly hooked. Seeds when ripe of a yellowiſh teſtaceous colour, and oval-globular.

It differs from the common Peony (P. officinalis) remarkably: 1. in having the ſtem more ſlender, rounder, ſcarcely grooved, more rigid; whereas in P. officinalis it is toroſely ſix or ſeven-grooved; 2. in having the leaves larger, biternate, with broader ſmoother leaflets, ſhining very much on both ſurfaces, undivided, with the veins ſcarcely prominent underneath; whereas in that the leaves are ſubtriquinate or triternate, with the primary leaflets bifid, the lateral ones frequently accompanied by a ſmaller acceſſory leaflet; 3. in having the floral leaf more remote; 4. in the colour of the flower, and eſpecially the pleaſant ſmell like that of Narciſſus; 5. in the ſmoothneſs of the germs; and 6. in having the root and herb more inſipid. It alſo flowers later.

Native of Siberia. Well known among the Daurians and Mongols on account of the root, which they boil in their broth, and the ſeeds, which they grind and put into their tea: they call the plant *Dſchina*; in Ruſſian it is *Marjin koren bjelyi*[1].]

2. α. The roots of the Common or Female Peony are compoſed of ſeveral roundiſh thick knobs or tubers, which hang below each other, faſtened with ſtrings; the ſtalks are green, about two feet and a half high; the leaves are compoſed of ſeveral unequal lobes, which are variouſly cut into many ſegments; they are of a paler green than thoſe of the Male Peony, and are hairy on their under ſide; the flowers are ſmaller, and of a deeper purple colour.

[According to Haller, the root is glandular: the leaves firm, ſhining, pinnate, with the pinnas pinnate in two pairs with an odd one at the end; the pinnules ovate-lanceolate, alſo half-lobed and half three-lobed confluent with the middle nerve. Stem a foot high, branched.

According to Scopoli, the leaves are decompound; the leaflets lanceolate, acuminate, ſeſſile, decurrent, acuminate, lobed and ſimple. The firſt leaves put forth three petioles, one of which bears one leaf, and the others two; all ovate and blunt. Under the calyx a leaf or two. Petals ſix or ſeven. Filament purple. Anthers yellow. Stigmas are brown claws with a yellow margin.]

β. The roots of the common Male Peony are compoſed of ſeveral oblong knobs hanging by ſtrings faſtened to the main head. Stems the ſame height with the preceding. Leaves compoſed of ſeveral ovate lobes, ſome of which are cut into two or three ſegments; they are of a lucid green on their upper ſide, but are hoary on their under. The ſtems are terminated by large ſingle flowers, compoſed of five or ſix large roundiſh red petals. Germs two, three, and ſometimes five, joining at the baſe, and covered with a whitiſh hairy down; theſe afterwards ſpread aſunder, and open longitudinally, expoſing the roundiſh ſeeds, which are firſt red, then purple, and when ripe perfectly black. The flowers of both appear in may, and the ſeeds ripen in the autumn.

[Haller remarks, that this differs from the preceding in having the leaves leſs diſform, and the root deſtitute of glands. It is ſcarcely neceſſary to obſerve that the old names of Male and Female have nothing to do here with the ſexes, the flowers of both being hermaphrodite.

Native of ſeveral parts of Europe, as Switzerland, Dauphiné, Carniola, Piedmont, Silefia; alſo of mount Ida, China and Japan. It was cultivated here in 1562, according to Turner[2].]

Several varieties of the Female Peony with double flowers, differing in ſize and colour, are cultivated in the Engliſh gardens. The Male Peony alſo varies with pale, and white flowers, and with larger lobes to the leaves.

[Theſe plants alſo vary much in different countries. Pallas informs us that the native plant of Mount Caucaſus differs conſiderably from that which is cultivated in gardens. Loureiro mentions ſome varieties in China, and ſays that there are many others. Of the numerous varieties to be found in old authors I ſhall ſet down only thoſe which Mr. Miller has given as ſpecies.]

γ. Foreign Peony with a deep-red flower. The roots are compoſed of roundiſh knobs, like thoſe of the Female Peony. The leaves alſo are the ſame, but of a thicker ſubſtance. The ſtalks do not riſe ſo high. The flowers have a greater number of petals, and appear a little later.—It is a native of the Levant. The large double purple Peony is probably a variety of this.

[Parkinſon calls this the ſingle red Peony of Conſtantinople, and ſays that the flower has eight leaves, of a deeper red colour than either the ſingle or double Peonies, and not purpliſh at all, but rather of the colour of an ordinary red Tulipa. The roots have longer clogs, and not ſo ſhort as the ordinary female kind, and of a paler colour on the outſide.

Johnſon, in his edition of Gerarde's herbal calls it Turkiſh Peionie, and ſays that the ſeed was ſent to Cluſius from Conſtantinople. Cluſius informs us, that the corolla has eight, ten or more petals, and that he raiſed plants of it in 1588.]

δ. Hairy Peony, or Female Peony with a larger double red flower, has alſo roots like the common female Peony: but the ſtalks are taller, and of a purpliſh colour; the leaves are much longer, with ſpear-ſhaped entire lobes; the flowers are large, and of a deep-red colour.

ε. Roots compoſed of oblong fleſhy tubers of a pale colour. Stalks about two feet high, pale green. Leaves compoſed of ſeveral lobes, irregular in ſhape and ſize, ſome having ſix, others eight or ten ſpear-ſhaped lobes, ſome cut into two or three ſegments, and others entire; they are of a pale green, and downy on their under ſide. The ſtalks are terminated by one flower of a bright-red colour, a little leſs than that of the common female Peony, and having fewer petals. Germs two or three, ſhorter and whiter than in that. It alſo flowers ſomewhat later. The ſeeds were brought from the Levant, and plants were raiſed from them both with ſingle and double flowers.

Mr. Miller, in his figures, adds, that ſome of the leaves are compoſed of eleven, and others of thirteen lobes; that the two ſide diviſions next the ſtalk are for the moſt part compoſed of three lobes, but the middle one, which is extended in length, is commonly compoſed of ſeven lobes; the lobes narrow, ſmooth and entire, ſmaller than thoſe of the common ſort, and covered with a ſoft down; that the ſtalks are ſeldom more than a foot and half in height: that the germs are generally three, ſometimes four or five; and that the capſules are oblong, two or three larger than the others.

ζ. Peony of Portugal with a ſingle ſweet flower has not roots compoſed of roundiſh tubers, but has two or three long taper forked fangs like fingers. The ſtalk riſes little more than a foot high. The leaves are compoſed of three or four oval lobes, of a pale colour on their upper ſide, and hoary underneath. The ſtalk is terminated by a ſingle flower, which is of

[1] Pallas.

[2] Hort. kew.

a bright

a bright red colour, ſmaller than the preceding, and of an agreeable ſweet ſcent. The ſeeds were ſent to the Chelſea garden by the elder Juſſieu, who brought them from Portugal, where this plant grows naturally.

[3. Root tuberous, diſſorm, very large, deſcending by cylindrical proceſſes a ſpan in length, yelloviſh without, white within, both freſh and dry having a very ſtrong ſmell and taſte of bitter almonds or peach kernels. Root-leaves none, but red, awnleſs ſheaths, whence the ſtems; which are ſeveral, from eighteen to twenty-ſeven inches in height, the thickneſs of the little finger, round, very ſmooth, alternately and frequently leafy above, without any ſtipules at the petioles. Leaves on a flat petiole channelled above, almoſt ternate, but with the partial petioles ſo margined with the leaf running along them, that they may be called tripartite. Leaflets ſoft, bright green, paler underneath, ſhining, very ſmooth; the middle one deeply three-parted, and the middle part of theſe ſix times, the lateral ones four times deeply gaſhed: the ſide leaflets two-parted, one part ſix times, the outer five times gaſhed and ſlightly two-parted. All the ſegments of the leaflets long and ſharp. The upper leaves towards the flower are gradually larger and leſs gaſhed; the laſt are three-cleft, with the middle ſegment five-cleft. At the calyx itſelf are two linear leaflets, bifid or trifid at the tip. Flower nodding a little: the calyx has three lanceolate leaflets, equal to the corolla in length, purple at the baſe, leafy and reflex at the end; and three inner leaflets ovate-acuminate and concave. Corolla handſome, ſpreading a little, deep roſe-coloured, with a ſlightly viroſe ſmell, ſix-petalled, in gardens frequently ſeven-petalled: petals oblong-oval, waved, tender, the outer larger, the inner narrower. Stamens about two hundred and fifty: filaments briſtle-ſhaped, weak, twice as long as the anthers; which are large, erect, oblong, curved a little, longitudinally four-grooved, abounding very much in a pale yellow pollen. Germs three or four, very frequently five, conical, ſmooth, green, with a ſeſſile creſcent-ſhaped reflex purple ſtigma. The germ has a crown of about fifteen fungoſe, white, contiguous, ſubdidymous glands. Capſules five, coriaceous, ſmooth, ovate-acute, diſpoſed in a ſtar, in cultivation having frequently one or two aceſſary ones upright in the middle) when ripe opening at top, and exhibiting ſeveral oval-globular ſeeds, firſt red and then teſtaceous-black, which commonly do not germinate till they are a year old.

Native of all Siberia in mountainous woods. In the gardens at Peterſburgh it flowers ſooner than the other ſpecies, namely about the end of may. The root dried is uſed by the Mongols and ſome Tartars as ſauce for their meat: and Boetcher, an army ſurgeon, found it to be uſeful in intermittent fevers.

4. This has nearly the ſtature of the laſt, and is much taller than the next. Stem the thickneſs of a finger, obſcurely channelled (which it is not in P. laciniata), more rigid, naked at bottom, as that is, hence up to the flower leafy, rather more copiouſly than in the preceding. Petioles above concave-channelled, thicker and ſtiffer than in P. laciniata, trifid. Leaves trichotomous-multifid, linear, the middle trifid, divided into 14—24—14; the lateral ones into 14—22—9, or thereabouts. The uppermoſt leaves ſmaller, divided into about eighteen cleſts. The floral ones five-cleft and ten-cleft. Calyx ſeſſile: the three outer leaflets ovate at the baſe, with a leafy linear point, longer than the corolla; the three inner large, oval-conchoid, rounded, with a ſmall, briſtle-ſhaped point: green with the edge and middle purple. Petals ſeven, large, wide, leſs oblong than in P. laciniata, but of a deeper red colour, between that and P. tenuifolia, more coriaceous than in that and of a more globular figure. Stamens thirty to forty or more, with ſmaller anthers, commonly ſhrivelling and deſtitute of pollen. Germs three, conical-convex, pubeſcent, with creſcent-ſhaped very red ſtigmas. Petals ſometimes bifid. The white fungoſe glands of the receptacle round the germs are about ſeventeen, and leſs contiguous than in P. laciniata: the taſte is a little more viroſe than in that.

This plant is ſuppoſed to have originated in the botanic garden at Peterſburgh, from the ſeeds of P. tenuifolia ſown in the ſame bed with P. laciniata; and it is conjectured to be a mule between them, ſince it has not ever produced ripe ſeeds. It occurs of a much ſmaller ſize in ſome parts of Siberia.

5. Root creeping, putting forth tuberous fibres, with tubercles the ſize of a hazel nut, white, fleſhy, of a bitteriſh taſte. Stem ſcarcely a foot high, and commonly ſingle, but in the garden eighteen inches high, and ſeveral from the ſame root, but fewer than in P. laciniata. Root-leaves none. Stem round, very obſcurely grooved, ſmooth as is the whole plant, naked at bottom, having there only a few ſheathing ſcales. Leaves frequent, alternate, the upper ones gradually leſs, on a round petiole, channelled above, quinate: leaflets cut into very many narrow ſegments. The upper leaves ſimply multifid. Flower ſeſſile at the uppermoſt leaf, ſubglobular, accompanied by two leaflets, one multifid, the other ſimple, both dilated at the baſe. Calyx five-leaved; leaflets concave-gibbous, two of them exterior and acuminate. Petals eight, ſpreading, oval, very deep red. Stamens about one hundred and twenty, with pale filaments, and erect, oblong, deep yellow anthers. Germs two or three, conical, villoſe, with a creſted, reflex, vertically flat, roſe-coloured ſtigma. Capſules, in the wild plant, commonly two, in the gardens three, ovate-oblong, tomentoſe, red, when they open reflex and ſpreading, coriaceous. Seeds oblong, firſt yellow, then brown, about ſix in number, faſtened to the opening future [1].

According to Gærtner, the capſules are leguminoſe, from two to five, ovate, ventricoſe, beaked, from ſpreading reflex, pubeſcent, one-celled, opening by the upper or inner ſide. Seeds ſeveral, oblong-ſpheroidal, ſmooth, ſhining, very dark ferruginous, with a prominent, obliquely truncate, compreſſed navel at bottom, and a filiform hilum or ſcar on one ſide: they are faſtened alternately in a double row to each margin of the opening future. The number three is moſt frequent in the capſules, but in the garden it often mounts to five. But Pallas remarks, that two is the moſt common number in the wild plant.

Native of Ucraine. Introduced in 1765, by Mr. William Malcolm [2].]

PROPAGATION AND CULTURE.

The Male Peony is chiefly propagated for the roots, which are uſed in medicine; for the flowers being ſingle, do not afford near ſo much pleaſure as thoſe with double flowers, nor will they abide near ſo long in beauty.

All the ſorts with double flowers are preſerved in gardens for the beauty of their flowers, which, when intermixed with other large growing plants in the borders of large gardens, will add to the variety; and the flowers are very ornamental in baſons or flower-pots, when placed in rooms.

They are all extremely hardy, and will grow in almoſt any ſoil or ſituation, which renders them more valuable; for they will thrive under the ſhade of trees, and in ſuch places they will continue much longer in beauty.

They are propagated by parting their roots, which multiply very faſt. The beſt ſeaſon for tranſplanting them is towards the end of auguſt, or the beginning of ſeptember; for if they are removed after their roots have ſhot out new fibres, they ſeldom flower ſtrong the ſucceeding ſummer.

In parting theſe roots, always obſerve to preſerve a bud upon the crown of each offset, otherwiſe they will come to nothing; nor ſhould you divide the roots too ſmall (eſpecially if you have regard to their blowing the following year) for when their offsets are weak, they many times do not flower the ſucceeding ſummer, or at leaſt produce but one flower upon each root: but where you would multiply them in quantities, you may divide them as ſmall as you pleaſe, provided there be a bud to each offset, but then they ſhould be planted in a *nurſery-bed* for a ſeaſon or two

[1] Pallas. [2] Hort. Kew.

to get ſtrength, before they are placed in the flower-garden.

The ſingle ſorts may be propagated from ſeeds (which they generally produce in large quantities, where the flowers are permitted to remain) which ſhould be ſown in the autumn ſoon after they are ripe, upon a bed of light freſh earth, covering them over about half an inch thick with the ſame light earth. The ſpring following the plants will come up, when they ſhould be carefully cleared from weeds, and in very dry weather refreſhed with water, which will greatly forward their growth. In this bed they ſhould remain two years before they are tranſplanted, obſerving in autumn, when the leaves are decayed, to ſpread ſome freſh rich earth over the beds about an inch thick, and conſtantly to keep them clear from weeds.

When you tranſplant them, (which ſhould be done in ſeptember) you muſt prepare ſome beds of freſh light earth, which ſhould be dug, and well cleaned from the roots of all noxious weeds; then plant the roots therein ſix inches aſunder, and about three inches deep. In theſe beds they may remain until they flower, after which they may be tranſplanted where you deſign they ſhould grow. It is very probable there may be ſome varieties obtained from the ſeeds of theſe plants, as is common in moſt other flowers; ſo that thoſe which produce beautiful flowers, may be placed in the flower-garden, but ſuch as continue ſingle or ill-coloured, may be planted in beds to propagate for medicinal uſe.

The variety from Portugal requires a lighter ſoil and a warmer ſituation. The flowers though ſingle are very ſweet, which renders this worthy of a place in every good garden.

PAGAPATE. See *Sonneratia*.

PAINA-SCHYLLI. See *Acanthus*.

PAIANELLI. *See Bignonia*.

PAINTED LADY PEA. See *Lathyrus*.

PAIPARÆA. See *Gretwia*.

PALAVIA. (*Named in honour of Don Antonio Palau, an eminent Botaniſt, and a Profeſſor at Madrid.*)

Lin. gen. Schreb. n. 1130. Palava. *Cavan. diſſ.* 1. 40. *t.* 11. *Juſſ.* 271.

Claſſ. 16. 6. Monadelphia Polyandria.

Nat. order of *Columniferæ*. *Malvaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, half-five-cleft, permanent.

COR. *Petals* five, roundiſh, inſerted into the baſe of the tube of ſtamens.

STAM. *Filaments* very many, united below into a tube, in the top of the tube free. *Anthers* roundiſh.

PIST. *Germ* globular. *Style* many-cleft at top, ſhort. *Stigmas* capitate.

PER. *Capſule* roundiſh, many-celled: cells not opening, placed in a ball on the elevated central receptacle.

SEEDS ſolitary, roundiſh, angular.

ESSENTIAL CHARACTER.

Cal. half-five-cleft. *Style* many-cleft. *Capſ.* many-celled: cells in a ball on the raiſed central receptacle.

SPECIES.

1. Palavia malviſolia.
Cavanilles, diſſ. 1. *p.* 40. *t.* 11. *f.* 4.
With ſmooth cordate leaves, either obtuſely and deeply crenated, or lobed.

2. Palavia moſchata.
Cavan. diſſ. 1. *p.* 41. *t.* 11. *f.* 5.
With tomentoſe cordate and ovate-crenated leaves.

DESCRIPTIONS, *&c.*

1. This is an annual, with red, declinate, very branchy ſtems, ſcarce a palm long; leaves ſublobate, ſmooth, alternate, with footſtalks almoſt their own length: ſtipules ſmall blackiſh, lanceolate, and hiſpid. Flowers on long ſingle peduncles, which are red, and ſhorter than the leaves. Corolla roſe-coloured.

It is a native of ſandy places at Lima in Peru, where it was firſt obſerved by Dombey: it flowers in that region in july, auguſt, and ſeptember.

2. This, which is the Sida moſchata of Dombey, is alſo an annual; growing in ſandy places in the neighbourhood of Lima, where it was alſo firſt obſerved by Dombey. The whole plant is downy, and has a muſky ſmell. The ſtem is upright, branchy, and two feet high: leaves ſomewhat wrinkled, cordate-ovate, ſublobate, or obtuſely and widely crenated; they ſtand alternate. Stipules ſmall, lanceolate, and blackiſh. Flowers ſolitary, axillary, and pedunculated: peduncles jointed, and longer than the leaves. Flowers large and of a yellowiſh purple.

PALEGA PAIANELLI. See *Bignonia*.

PALICOUREA. See *Stephanium*.

PALILIA. See *Heliconia*.

PALIURO AFFINIS. See *Piſonia* and *Volkameria*.

PALIURUS. See *Rhamnus*.

PALLASIA. (*So named by Monſ. L'Heritier, in honour of Peter Simon Pallas, M. D. Knight of the order of Wladimir, and member of the Imperial Academy of Sciences at Peterſbourgh.*)

L'Herit. ſtirp. nov. 2. *Hort. kew.* 3. 498.

Claſſ. 19. 3. Syngeneſia Polygamia Fruſtranea.

Nat. order of *Compoſitæ Oppoſitifoliæ*. *Corymbiferæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Common* imbricate, many-leaved, permanent; leaflets lanceolate, rather acute, flattiſh, ſpreading; the interior ones longer.

COR. *Compound* radiate. Corollules hermaphrodite in the elongated diſk numerous. *Females* about ten in the ray.

Proper in the hermaphrodites long-funnel-form; *border* five-cleft; *diviſions* lanced, revolute. Female ſtrap-ſhaped, unequally bifid, trifid, or quadrifid: *diviſions* wide, reflex.

STAM. in the hermaphrodites, *Filaments* five, capillary, very ſhort. *Anther* cylindric, tubular, five-toothed.

PIST. *Germ* inferior, compreſſed, wedge-ſhaped, ciliated at the tip and ſides. *Style* filiform, the length of the ſtamens. *Stigma* bifid, thickiſh.

In the females, *Germ* as in the hermaphrodites. *Style* none. *Stigma* none.

PER. none. *Calyx* unchanged.

SEEDS in the hermaphrodites ſolitary, wedge-ſhaped, flat-compreſſed, two-horned, ſilky.

In the females none.

REC. convex, punctate-tuberculated, chaffy; *chaffs* concave, acute, ſhorter than the flower.

ESSENTIAL CHARACTER.

Receptacle chaffy. *Down* none. *Seeds* vertical, flat, margin-ciliated. *Calyx* imbricate.

SPECIES.

1. Pallaſia halimifolia.
Hort. kewenſ. 3. *p.* 498.
Coreopſis limenſis. *Jacqu. ic. vol.* 3.

DESCRIPTION, *&c.*

This is a ſhrubby plant of about two feet high; the ſtem is round, downy, of the thickneſs of a quill or more, and branchy. The leaves are alternate, footſtalked, obtuſe or a little acute, widely ovate, ſubtrinervate, very entire or elſe obſcurely denticulated, downy on both ſides, and whitiſh: footſtalks terminal, elongated, upright, round, villoſe and ſubdivided. The ray of the corolla is of a deep yellow. The corollules of the diſk yellow. The anthers red. The ſtigmas yellow. The exterior chaffs are greeniſh; the interior which are harſh, are whitiſh. The ſeeds are blackiſh with white cilias.

Profeſſor Jacquin, who has deſcribed this plant in his work entitled Ic. plant. rar. thinks it clearly to be a ſpecies of Coreopſis.

It is a native of Lima in Peru.

PALLASIA. See *Calligonum* and *Cryptis*.

PALMA and PALM TREE. See *Areca*, *Bactris*, *Boraſſus*, *Caryota*, *Chamærops*, *Cocos*, *Corypha*, *Cycas*, *Dracæna*, *Elaïs*, *Elate*, *Licuala*, *Mauritia*, *Nipa*, *Phœnix*, *Rhapis*, *Thrinax*, *Zamia*.

PALMATA and PALMA CHRISTI. See *Orchis* and *Ricinus*.

PALMETTO. See *Chamærops*.

PALMIFOLIA. See *Zamia*.

PALMIS AFFINIS. See *Grias*.

PALMJUNCUS. See *Calamus* and *Flagellaria*.
PAL-MODECCA. See *Convolvulus*.
PALOUE. See *Ginannia*.
PALUDAPIUM. See *Apium*.
PANACES. See *Aralia*, *Heracleum*, *Laserpitium*.
PANAMBU-VALLI. See *Flagellaria*.
PANAM-PALCA. See *Myristica*.]
PANAX. (Πανακ *of Theophraſtus and Dioſcorides.* Panaces *of Pliny. From* was *all, and* axos *a medicine. Whence our term* Panacea, *for a medicine pretended to cure all diſeaſes.*)
Lin. gen. n. 1166. *Reich. n.* 1280. *Schreb. n.* 1604. *Juſſ.* 218. Araliaſtrum. *Vaill.* 6. Aureliana. *Laſitau.* Ninſi. *Breyn. diſſ.* Panacea. *Miteh.* 26.
Claſſ. 23. 2. Polygamia Dioecia. Pentandria Digynia. *Swartz.*
Nat. order of *Hederaceæ*. *Aralie*, Juſſ.

GENERIC CHARACTER.

* *Hermaphrodite flowers.*
CAL. *Umbel* ſimple, equal, cluſtered.
Involucre many-leaved, awl-ſhaped, very ſmall, permanent.
Perianth proper, very ſmall, five-toothed, permanent.
COR. *Univerſal* uniform. *Proper*, of five oblong equal recurved petals.
STAM. *Filaments* five, very ſhort, caducous. *Anthers* ſimple.
PIST. *Germ* roundiſh, inferior. *Styles* two, ſmall, upright. *Stigmas* ſimple.
PER. *Berry* cordate, umbilicate, two-celled.
SEEDS ſolitary, cordate, acute, plano-convex.
* *Male flowers on a diſtinct plant.*
CAL. *Umbel* ſimple, globular; with very many equal coloured rays.
Involucre compoſed of lanceolate ſeſſile leaflets, the ſame number with the external rays.
Perianth turbinate, quite entire, coloured.
COR. *Petals* five, oblong, blunt, narrow, reflex, placed on the perianth.
STAM. *Filaments* five, filiform, longer, inſerted into the perianth. *Anthers* ſimple.

ESSENTIAL CHARACTER.

Umbel. *Cor.* five-petalled. *Stam.* five.
HERM. *Cal.* five-toothed, ſuperior. *Styles* two. *Berry* two-ſeeded.
MALE. *Cal.* entire.

SPECIES.

1. Panax quinquefolia. *Ginſeng.*
Lin. ſpec. 1512. *Reich.* 4. 362. *mat. med.* 222. *Woodv. med. bot.* 270. *t.* 99. *Gron. virg.* 147. *Kalm. it.* 3. 334. *ed. angl.* 114. *Blackw. t.* 513. *Regn. bot.*
Aureliana canadenſis. *Laſit. ginſ.* 51. *t.* 1. & *mem. par.* 1718. 42. *Cateſb. car.* 3. *t.* 16. *Breyn. prodr. pl.* 2. *p.* 35. *fig. ad p.* 52.
Araliaſtrum quinquefolii folio majus, Ninſin vocatum. *Vaill. ſex.* 43.
A. foliis ternis quinquepartitis, Ginſeng ſ. Ninſin officinarum. *Trew Ehret. t.* 6. *f.* 1.
Ginſeng. *Pharm. Raii hiſt.* 1338. — Chinenſibus. *Jartoux in Philoſ. Tranſ.* 28. 237. *Charlevoix*, 4. 308. *t.* 13. & 5. 24.
Leaves tern quinate.
[2. Panax attenuata.
Swartz prodr. 54. *deſcr.* 562.
Leaves ternate or quinate, leaflets ovate attenuated crenate, trunk arboreſcent.]
3. Panax trifolia. *Three-leaved Panax.*
Lin. ſpec. 1512. *Reich.* 4. 362. *Gron. virg.* 35.
Araliaſtrum fragariæ folio minus. *Vaill. ſex.* 43.
A. foliis ternis tripartitis & quadripartitis. *Trew Ehret. t.* 6. *f.* 2.
Naſturtium marianum, &c. *Pluk. mant. t.* 435. *f.* 7.
Leaves tern ternate.
[4. Panax aculeata. *Prickly Panax.*
L'Herit. ſtirp. nov. tom. 2. *t.* 99. *Ait. hort. kew.* 3. 448.
Zanthoxylum trifoliatum. *Lin. ſpec.* 1455. *Reich.* 4. 248.

Leaves ternate, the uppermoſt next the flowers crowded and ſimple, petioles and branchlets prickly, ſtem ſhrubby.
5. Panax ſpinoſa. *Thorny Panax.*
Lin. ſyſt. 920. *ſuppl.* 441.
Leaves quinate alternate, ſpines ſolitary below the branches, umbels lateral.
6. Panax arborea. *Tree Panax.*
Lin. ſyſt. 920. *ſuppl.* 441. *Forſt. flor. auſtral. n.* 398.
Leaves ſeptenate (quinate-obovate ſerrate-toothed, Forſt.) *umbels compound.*
7. Panax chryſophylla. *Golden-leaved Panax.*
Vahl ecl. 33.
P. morototoni. *Aubl. guian.* 949. *t.* 360.
Jacaranda arbor polyphylla maxime procera. *Barrere franc. equin.* 61.
Leaves in ſevens and nines, leaflets lanceolate quite entire tomentoſe underneath, umbels panicled.
8. Panax fruticoſa. *Shrubby Panax.*
Lin. ſpec. 1513. *Reich.* 4. 363. *Laur. rochinch.* 656.
Scutellaria tertia. *Rumph. amb.* 4. 78. *t.* 33.
Leaves ſuperdecompound tooth-ciliate, ſtem ſhrubby.
9. Panax ſimplex. *Simple-leaved Panax.*
Forſt. flor. auſtral. n. 309.
Leaves alternate lanceolate ſerrate, umbels compound.]

DESCRIPTIONS, &c.

1. Ginſeng has a fleſhy taper root as large as a man's finger, jointed, and frequently divided into two branches, [ſending off many ſhort ſlender fibres.] The ſtalk riſes near a foot and half high, and is naked at the top, where it generally divides into three ſmaller footſtalks, each ſuſtaining a leaf compoſed of five ſpear-ſhaped leaflets, ſerrate, pale green and a little hairy. [The ſtalk is erect, ſmooth, round, ſimple, tinged of a deep purple colour. The leaves ariſe with the flower-ſtem from a thick joint at the extremity of the ſtalk: they are generally three, but ſometimes more, the five leaves into which each of theſe are divided are of an irregular oval ſhape, veined, pointed, ſmooth, deep green above, on ſhort footſtalks, from a common petiole, which is long, round and almoſt erect.] The flowers grow on a ſlender peduncle juſt at the diviſion of the petioles, and are formed into a ſmall umbel at the top; they are of an herbaceous yellow colour, and appear at the beginning of june. The berries are firſt green, but afterwards turn red; and incloſe two hard ſeeds, which ripen in the beginning of auguſt [o].

[Linneus remarks, that the ſeeds produce a ternate leaf, without any ſeed-leaves, like the monocotyledonous plants. Bernard Juſſieu ſometimes obſerved three ſtyles in the flower, and three ſeeds.

Ginſeng is a native of Chineſe Tartary, from 39 to 49° of latitude, and alſo of North America. It is very abundant in Canada, in plain parts of the woods; is fond of ſhade, of a deep rich mould, and of land which is neither wet nor high. It flowers in may and june, and the berries are ripe at the end of auguſt. It is not common every where, for in ſome parts it is not to be found for ſeveral miles, but in thoſe ſpots where it grows, it is always in great abundance [p]. Mr. Cutler ſays that it grows plentifully in New England, and ſome of the neighbouring ſtates [q]: and Bartram found it in Virginia. It has never been found far north of Montreal [r]. Ginſeng has been gathered time immemorial in Chineſe Tartary. In 1709 the Emperor of China gave orders to ten thouſand Tartars to go in queſt of theſe roots, and to bring as much as they could find; every one was to give two pounds of the beſt to the Emperor, and to ſell the reſt for the ſame weight of fine ſilver. In this manner the Emperor procured twenty thouſand katye or Chineſe pounds in one years. Monſ. Sarraſin had before this, namely in 1704, tranſmitted ſpecimens of it from Canada to Paris [s]. In 1740, it was introduced here by Peter Collinſon, Eſq. [t] In 1748 a pound of Ginſeng roots was ſold at Quebec for ſix livres, but the common price was five livres. About this time the trade which the French carried on

[o] The additions are from Woodville. [p] Kalm.
[q] Mem. amer. acad. 1. [r] Kalm.
[s] Oldeck, 1. 224. engl. edit. [t] Mem. par. for 1718. p. 44.
[u] Hort. kew.

with it was very brisk. They gathered great quantities, and sent it to France, whence it was exported to China, and sold there to great advantage at the first outset, but its price afterwards fell considerably, probably by overstocking the Chinese, or because the Chinese discovered or fancied the American Ginseng to be inferior to theirs. The indians collect the roots in the woods, and sell them to the merchants, who spread them on the floor to dry, for two months or more, according to the season, turning them once or twice every day [a].

Osbeck informs us that the Chinese hang the American roots over a boiling pot, that they may sweat: and dry them afterwards. They are said to dip their own roots in a decoction of the leaves of the plant. Theirs are almost transparent, and look like horn within; the best are heavy and compact in the inside [b].

Others say that the Chinese after having washed the roots, soak them in a decoction of rice or millet-seed, and then expose them to the steam of the liquor, by which they acquire their firmness and clearness.

The Chinese name of *Yan-sam* or *Tansom*, and the American of *Garantouges* or *Garangtoging*, are both derived from the fancied resemblance which the branching root bears to the human figure. The Tartars call it *Orbeta*, the most noble or Queen of plants.

Both they and the Chinese ascribe extraordinary virtues to this root, and have long considered it as a sovereign remedy in almost all diseases to which they are liable, having no confidence in any medicine, unless in combination with it. Osbeck says, that he never looked into the apothecaries shops, but they were always selling Ginseng, that both poor people and those of the highest rank made use of it, and that they boil half an ounce in their tea or soup every morning, as a remedy for a consumption and other diseases. Jartoux relates, that the most eminent physicians in China have written volumes on the medicinal powers of this plant, asserting that it gives immediate relief in extreme fatigue, either of body or mind, that it dissolves pituitous humours and renders respiration easy, strengthens the stomach, promotes appetite, stops vomitings, removes hysterical, hypochondriacal and all nervous affections, giving a vigorous tone of body even in extreme old age. Jartoux himself was so biassed by eastern prejudice in favour of Ginseng, that he seems to give their extravagant effects full credit, and confirms them in some measure from his own experience [c]. The French in Canada use this root for curing the asthma, as a stomachic, and to promote fertility in women [d].

After all, our physicians say that we have no proofs of the efficacy of Ginseng in Europe, and that from its sensible qualities it seems to possess very little power as a medicine [e]. This is no proof, that, after all due allowances are made for popular prejudice, it may not be a good medicine in many cases, in those countries where it grows naturally.—It is commonly used in decoction; a dram of the root being long boiled in a sufficient quantity of water for one dose [f].

The dried root, as imported here, is scarcely the thickness of the little finger, about three or four inches long, frequently forked, transversely wrinkled, of a horny texture, both within and without of a yellowish white colour. To the taste it discovers a mucilaginous sweetness, approaching to that of liquorice, accompanied with some degree of bitterishness, and a slight aromatic warmth, with little or no smell. It is far sweeter and of a more grateful smell than the roots of Fennel, to which it has by some been supposed similar; and differs likewise remarkably from those roots, in the nature and pharmaceutic properties of its active principles; the sweet matter of the Ginseng being preserved entire in the watery as well as the spirituous extract, whereas that of Fennel roots is destroyed or dissipated in the inspissation of the watery tincture. The slight aromatic impregnation of the Ginseng is likewise in good measure retained in the watery extract, and perfectly in the spirituous [g].

[a] Kalm. [b] Idem.
[c] Philos. trans. vol. 28. p. 239. [d] Kalm. [e] Woodville.
[f] Idem. [g] Lewis, mat. med. and Woodville.

Father Loureiro doubts whether the American Ginseng be the same with the precious *Gin seng* of the Chinese. He procured seeds from Tartary, but unfortunately on being sowed they did not germinate. In the Chinese herbariums and figures the plant appears to have quinate leaves, not tern, on long scattered petioles; the leaflets broad-lanceolate and quite entire: the flowers reddish, in a terminating umbel: the fruit containing seven or eight, roundish, umbilicated seed, a little larger than a pepper-corn, brown and of a horny substance. Loureiro asserts that the efficacy of the Chinese root is very different from that of Canada, that the latter is therefore sold cheaper, and that the shape is so different that neither medical practitioners nor merchants can mistake them.—If therefore our physicians have only used the root which comes from Canada, they have not given the Ginseng a fair trial. Loureiro adds, that *Sinus Ninfa* is quite a different plant, and not esteemed.

2. This is a small tree, with round, smooth, unarmed branches. Leaves scattered, alternate, petioled, quinate, very seldom ternate, and still more seldom septenate. Common petioles round, smooth, longer than the leaves, a foot long, sheathing at the base: sheaths half embracing, within the base of the petiole above free and acuminate. Leaflets also petioled, broad-ovate, drawn to a very long point at the end, remotely notched, flat, nerved, veined, very smooth on both sides, paler underneath, somewhat rigid. Petiolets two inches long, smooth and even. Umbels terminating, five-parted, compound, on a very short common peduncle: partial peduncles very long, like racemes; somewhat verticilled or scattered, terminated by eight-rayed umbellets. The half pedicels are half an inch long and one-flowered. Universal involucre scarcely any, but small acute leaflets under the division of the pedicels and deciduous: partial involucre very minute, five-toothed. Flowers hermaphrodite all fertile. Calyx pitcher-shaped, five-toothed, teeth extremely minute. Petals ovate, acute, caducous. Filaments inserted at the edge of the calyx. Anthers ovate, twin, yellow. Germ inferior compressed. Style short, thickish, the length of the stamens, bifid at the top, seldom trifid. Stigmas simple, very short. Fruit a Berry? crowned with the calyx, roundish, compressed, smooth, two-celled or sometimes three-celled. Seeds solitary. Allied very nearly to P. arboreum.

Native of the West Indies; in Guadaloupe, and St. Christopher's [a].]

3. Stem single, not more than five inches high, dividing into three foot-stalks, each sustaining a trifoliate leaf, with the leaflets longer, narrower, and more deeply indented on their edges than in the first species. The flower-stalk rises, as in that, from the divisions of the petiole.

Native of North America. Mr. Miller had a single plant of it from Maryland, which he lost by drought before it flowered.

[It is so nearly allied to the first sort, that Linnæus doubts whether it be any thing more than a variety of that, only much smaller.

4. This is a shrub with a recurved prickle at the base and at the tip of the petioles. Leaves solitary, ternate, tern at the flowers: with ovate, blunt leaflets. Umbels peduncled, hemispherical, simple. Flowers with three styles.

Native of China [b]. Cultivated in 1773, by John Fothergill, M. D. [c]

5. Spines stout, very straight, spreading, instead of a leaf, below the abbreviated shoots of the branchlets. The shoots consist of three or four leaves without a branchlet, and among these leaves is a filiform peduncle with a simple umbel; and small white flowers. Leaves wedge-form, produced at the tip, serrate; the lower ones shorter.

Native of Japan, where it was found by Thunberg [d]. It is not mentioned in the Flora Japonica, or in his Travels.

[a] Swartz. [b] Linn. spec. [c] Hort. kew.
[d] Linn. suppl.

6. Leaves

6. Leaves petioled, digitate. Leaflets ſeven, of different ſizes, oblong, ſerrate, very ſmooth and ſhining. Umbel large, with elongated rays, not ſimple as in P. quinquefolium.—Native of New Zealand[l].

7. This is a lofty tree, with branches the thickneſs of the thumb at top; theſe, the leaves underneath, the younger petioles, the branches of the panicle, the calyxes and petals on the outſide, are all covered with a fine golden cottony down. Leaves alternate, compound. Leaflets umbelled: the younger ones from three to ſeven inches in length, the lateral ones gradually leſs, drawn to a point at each end, eſpecially on the outſide, acute, flat, firm, obſcurely veined, of a ſhining golden colour underneath, as in *Chryſophyllum Cainito*, ſmooth and even above: the full-grown ones a foot long, ovate at the baſe, nerved, obſcurely veined, ſubcoriaceous, even, glaucеſcent underneath towards the edge, with a ſomewhat unequal repand edge, very much attenuated. Petioles round; thoſe of the more advanced leaves a foot long, widening at the baſe: the partial ones three inches long: both ſmooth: thoſe of the younger leaves ſhorter. Panicle terminating, large, diffuſed: the two loweſt branches oppoſite; the reſt, as alſo the branchlets and peduncles of the umbels, alternate, round. Bractes concave: the loweſt on the branches half an inch long and trifid; the lateral ſegments ſhorter, lanceolate, the middle one awl-ſhaped and elongated: of the other branches ovate, ſmall, three-toothed: thoſe on the branchlets minute, ovate, acute, entire. Umbels pedunciled: rays commonly eight, ſometimes but ſeldom from nine to thirteen, a quarter of an inch in length, and ſpreading very much. Involucre, a ſcalelet at the baſe of each ray, minute, ovate. Flowers ſmall. Calyx only a very ſhort ſuperior rim, obſcurely five-toothed. Petals ovate, acute, a little thicker at the edge, having a longitudinal raiſed line along the middle of the upper ſurface, ſpreading a little at the tip. Nectary, a very ſhort rim, between the petals and the baſe of the ſtyles, ſomewhat fleſhy. Filaments ſcarcely any except a very ſhort proceſs from the edge of the nectary. Anthers ovate, half the length of the petals, convex at the back, curved within, terminated by a ſhort point at the tip, viſible only with a microſcope. Germ roundiſh, compreſſed a little at the baſe. Styles two, very rarely three, linear, thickiſh, erect, converging, the length of the anthers, permanent. Stigma ſharp. Berry compreſſed, roundiſh, greater in breadth than length, ſcarcely cordate at the baſe, umbilicate, crowned with the two ſtiles bent back, commonly two-celled, very ſeldom three-celled, triangular. Seed one in each cell adhering to the axis, compreſſed, nearly ſemiorbiculate, with a cartilaginous ſhell or cover.

Found by Aublet in Guiana, and Ryan in the iſland of Trinidad[k].

8. This is an upright ſhrub, ſix feet high, with a thick, juicy, unarmed ſtem, and oblique branches. Leaves bipinnate, with an odd one: leaflets laciniate-ſerrate, ſmooth: primary petioles long, ſwelling at the baſe, embracing, purple, even. Flowers red and green, terminating, in a diffuſed panicle, ending in umbels, on a long, purple, ſtriated peduncle. Calyx cup-ſhaped, with a very ſmall five-toothed border. Petals oblong, acute, thick, grooved, revolute, ſometimes ſix. Filaments five, (ſometimes ſix) placed on the calyx, ſhorter than the corolla. Anthers oblong, two-celled, incumbent, before the flower expands incloſed in the grooves of the petals. Germ ovate. Style none. Stigmas three, oblong, erect. Berry calycine, roundiſh, three-celled, with a few roundiſh ſeeds[l].—Loureiro did not find any male flower.

According to Linnæus, the leaves are bipinnate or tripinnate, with lanceolate, unequal, ſerrate-ciliate, even leaflets. Peduncle irregularly branched, or dichotomous or brachiate. Umbellets almoſt naked. Berries two-ſtyled, two-ſeeded. Seeds ſomewhat compreſſed, grooved.

Native of the iſland of Ternate. Cultivated in China and Cochinchina; where the root and leaves are uſed in medicine. The plant has a ſtrong ſmell and penetrating taſte. It is reputed to be diuretic, and to be of ſervice in the dropſy, dyſury, gonorrhœa, &c.[m]

9. Native of New Zealand[n].]

PROPAGATION AND CULTURE.

1. The Ginſeng has been introduced into the Engliſh gardens from America, and where it has been planted in a ſhady ſituation and a light ſoil, and the plants have thriven and produced flowers, and ripened their ſeeds annually, but not one of theſe ſeeds have grown. I have ſown them ſeveral years ſoon after they were ripe without any ſucceſs; I have alſo ſown the ſeeds from America ſeveral times in various ſituations, and have not raiſed a ſingle plant: and by the accounts which the miſſionaries have ſent from China, it appears that they have had no better ſucceſs with the ſeeds of this plant; ſo that I believe there is a neceſſity for the hermaphrodite plants to have ſome male plants near them, to render the ſeeds proliſic; for all thoſe plants which I have ſeen, or ſaved ſeeds from, had hermaphrodite flowers; and though the ſeeds ſeemed to ripen perfectly, yet their not growing, though I have waited three years without diſturbing the ground, confirms me in the opinion.

[This account agrees with that of Loureiro given above; and ſhows that the flowers which are apparently hermaphrodite are imperfect. It is a ſtrong confirmation of the ſexual ſyſtem, and would be a proper ſubject of experiment in the countries where this plant grows naturally. Other ſpecies ſeem to have no male flowers, but perfect hermaphrodites only, and therefore belong to the claſs Pentandria, where Swartz has placed the genus. Theſe plants are very nearly allied to the *Umbellatæ*, which have commonly imperfect flowers mixed with the perfect ones, but on the ſame plants, and in the ſame umbel.

Kalm ſays, that the American Ginſeng bears tranſplanting very well, and will ſoon thrive in its new ground: and that he was told, that the ſeeds lie one or two years in the ground before they come up.

PANAX. See *Ferula*, *Heracleum*, *Laſerpitium*, *Paſtinaca*, *Thapſia*.]

PANACRATIUM (*of Pliny.* Παγκράλιον *of Dioſcorides. From* πᾶς, *all, and* κράτος *power: an herb of every virtue.*)

Lin. gen. n. 404. *Reich. n.* 437. *Schreb. n.* 551. *Juſſ.* 55. *Dill. elth.* 221. *f.* 289.

Claſs. 6. 1. Hexandria Monogynia.

Nat. order of *Spathaceæ.—Narciſſi*, Juſſ. *Lilia*, Roy.

GENERIC CHARACTER.

CAL. *Spathe* oblong, obtuſe, compreſſed, opening on the flat ſide, ſhrivelling.

COR. *Petals* ſix, lanceolate, flat, inſerted into the tube of the nectary on the outſide above the baſe.

Nectary one-leafed, cylindric-funnel-form, coloured at top, with the mouth ſpreading and twelve-cleft.

STAM. *Filaments* ſix, awl-ſhaped, inſerted into the tips of the nectary, and longer than they are. *Anthers* oblong, incumbent.

PIST. *Germ* bluntly three-cornered, inferior. *Style* filiform, longer than the ſtamens. *Stigma* blunt.

PER. *Capſule* roundiſh, three-ſided, three-celled, three-valved.

SEEDS ſeveral, globular.

ESSENTIAL CHARACTER.

Petals ſix. *Nect.* twelve-cleft. *Stam.* placed on the nectary.

SPECIES.

1. Pancratium zeylanicum. *Ceylaneſe Pancratium.*
Lin. ſpec. 417. *ſyſt.* 317. *Reich.* 2. 21. *fl. zeyl. n.* 126.
Narciſſus zeylanicus, flore albo hexagono odorato. *Herm. lugdb.* 691. *t.* 693. *Comm. hort.* 1. 75. *t.* 38. *Rudb. elyſ.* 2. 179. *f.* 7. *Raii hiſt.* 1904.
Lilium indicum. *Rumph. amb.* 6. 161. *t.* 70. *f.* 2.
Catulli-pola. *Rheed. mal.* 11. *t.* 40.
Spathe one-flowered, petals reflex.

[l] Linn. ſuppl. [k] Vahl. [l] Loureiro. [m] Idem. [n] Forſter.

[2. Pancratium mexicanum. *Mexican Pancratium.*
Lin. ſpec. 418. *Reich.* 2. 22. *hort. cliff.* 133. *Dill. elth.* 299. *t.* 222. *f.* 289.
Spathe two-flowered.]

3. Pancratium caribæum. *Caribean Pancratium.*
Lin. ſpec. 418. *Reich.* 2. 22. *hort. cliff.* 133. *Brown. jam.* 194. *n.* 1. *Comm. hort.* 2. 173. *t.* 87. *Sloan. jam.* 1. 244. *Mart. cent.* 3. *t.* 27. (Narciſſus).
Spathe many-flowered, leaves lanceolate, ſegments of the corolla linear and longer than the tube.

4. Pancratium maritimum. *Sea Pancratium.*
Lin. ſpec. 418. *ſyſt.* 317. *Reich.* 2. 22. *Mill. fig.* 132. *t.* 197. *Cavan. biſp.* 41. *t.* 56. *Ger.* 136. 2. *emac.* 172.
P. monſpeſſulanum, Scilla alba parva. *Baub. biſt.* 2. 611.
Narciſſus maritimus. *Baub. pin.* 54. *Raii biſt.* 1140.
Pſeudonarciſſus marinus albus, Pancratium vulgo. *Park. parad.* 106.
Lilio-narciſſus albus maritimus minor. *Mor. biſt.* 2. 365. *ſ.* 4. *t.* 10. *f.* 28.
Hemerocallis valentina. *Cluſ. biſt.* 1. 167.
Spathe many-flowered, petals flat, leaves tongue-ſhaped.

[5. Pancratium declinatum.
Lin. ſyſt. 318. *Jacqu. amer. picт. t.* 102.
P. amœnum. *Saliſb. in Linn. tranſ.* 2. 71. *t.* 10.
Spathe many-flowered, ſcape compreſſed ancipital, ſegments of the corollas a little longer than the tube, leaves tongue-ſhaped.]

6. Pancratium carolinianum. *Carolina Pancratium.*
Lin. ſpec. 418. *Reich.* 2. 22.
Lilio Narciſſus polyanthos flore albo. *Cateſb. car.* 3. *t.* 5.
Spathe many-flowered, leaves linear, ſtamens the length of the nectary.

7. Pancratium illyricum. *Illyrian Pancratium.*
Lin. ſpec. 418. *ſyſt.* 318. *Reich.* 2. 22.
Narciſſus illyricus liliaceus. *Baub. pin.* 55. *Seba theſ.* 1. 17. *t.* 8. *f.* 1. *Raii biſt.* 1140.
N. marinus ſ. 3. *Matth. Park. parad.* 95. N. 3. *Matth. Ger. emac.* 173.
Lilionarciſſus hemerocallidis facie. *Beſl. eyſt. vern.* 3. *t.* 16. *f.* 1.
L. albus maritimus major. *Mor. biſt.* 2. 366. *ſ.* 4. *t.* 10. *f.* 29.
Spathe many-flowered, leaves enſiform, ſtamens longer than the nectary.

[8. Pancratium littorale. *Tall Pancratium.*
Lin. ſyſt. 318. *Jacqu. hort.* 3. 41. *t.* 75. *amer.* 99. *t.* 179. *f.* 94. *picт. t.* 101. *Ait. hort. kew.* 1. 412. *Trew. Ehret.* 6. *t.* 27. *Saliſb. in Linn. tranſ.* 2. 74. *t.* 13.
Spathe many-flowered, leaves lanceolate-linear bifarious, ſegments of the corolla linear ſhorter than the tube, nectary almoſt entire.

9. Pancratium verecundum. *Narciſſus-leaved Pancratium.*
Ait. hort. kew. 2. 412.
Spathe many-flowered, leaves linear, ſegments of the corolla lanceolate ſhorter than the tube, the ſinuſes of the ſegments of the nectary ſtaminiferous.]

10. Pancratium amboinenſe. *Broad-leaved Pancratium.*
Lin. ſpec. 419. *ſyſt.* 318. *Reich.* 2. 23. *Comm. hort.* 1. 77. *t.* 39. *Rudb. elyſ.* 2. 238. *f.* 17.
β. Pancratium americanum & latifolium. *Mill. dict. n.* 7. & 8. *Trew. Ehret. t.* 28.
Cepa ſylveſtris. *Rumph. amb.* 6. 160. *t.* 70. *f.* 1.
Spathe many-flowered, leaves ovate nerved petioled.

DESCRIPTIONS, *&c.*

[This genus conſiſts of perennial plants with very large bulbous roots, from whence proceed long leaves, ſome very narrow, others broad, and a ſtrong ſtraight upright ſcape from one to three feet high, terminated by a large ſpathe, burſting on one ſide, and diſcloſing in ſome of the ſpecies many, in others only one or two white flowers of great elegance and fragrance.]

1. This has a pretty large bulbous root. Leaves long and narrow, of a grayiſh colour, and pretty thick, ſtanding upright. The ſtalk riſes among them, a foot and half high, naked, ſuſtaining one flower at the top. Nectary large, cut at the brim into many acute ſegments. Stamens long, and turning towards each other at their points, in which it differs from the other ſpecies. The flower has a very agreeable ſcent, but is of ſhort duration.

Native of Ceylon. [Cultivated by Mr. Miller in 1739.

2. Stem or ſcape a long ſpan in height, round, forked towards the top, or dividing into two pedoncles, with two oblong tender membranaceous greeniſh leaflets, and terminated each with a white flower, divided to the very baſe into ſix narrow ſegments; in the middle of theſe is a white bell-ſhaped tube, which Linnæus names the nectary, more tender than the petals, the mouth angular, and from each angle putting forth a filament, long, ſlender and white, terminated by an oblong incurved ſaffron-coloured anther. The flowers have no ſmell and ſhrivel up over the fruit. Leaves four, reclining, ſmooth, pale green and ſomewhat glaucous, rigid, ſlightly grooved in the middle, and with a ſingle ſtreak on each ſide, otherwiſe veinleſs, a long ſpan or a little more in length, an inch or an inch and half in width, produced to a point at the end. It flowers in may, from bulbs brought from Mexico [a].]

3. Leaves about a foot long and two inches broad, having three longitudinal furrows. The ſtalk riſes about a foot high, then divides like a fork into two ſmall footſtalks or rather tubes, which are narrow, green, and at firſt encompaſſed by a thin ſpathe, which withers, and opens to give way to the flowers: theſe are white and have no ſcent.

[Native of the Weſt Indies.—Dr. Browne ſays, it grows wild in moſt parts of Jamaica, and the other ſugar iſlands, with large leaves and numerous flowers, ſeldom riſing above ſixteen or eighteen inches in height.] Dr. Houſtoun brought ſome of the roots from La Vera Cruz; [and it was cultivated by Mr. Miller in 1730 [b].

Mr. Saliſbury has figured and deſcribed a ſpecies which he has often received from Barbadoes, and which he ſuſpects may be the ſame with that of Sloane and Martyn, but different from that of Commelin; which he refers to his *amœnum*, the *declinatum* of Jacquin. He names it *Pancratium fragrans*, and gives this ſpecific character.—Petioles wide; tube of the corolla ſix-cornered, not ſtreaked, ſegments longer than the tube, recurved, linear, alternately more concave, the ſinuſes of the crown repand-emarginate.—He thus deſcribes it: Plant a foot and half high. Leaves ſeven to ten, green, bifarious. Petioles ſheathing at the baſe, ſpreading, half round. The leaves themſelves much longer than the petioles, recurved, lanceolate, quite entire, blunt, a little channelled, ſmooth eſpecially above, fleſhy. Flowers very fragrant, from ſeven to twelve in a bunch. Peduncle (or ſcape) pale glaucous, among the inner leaves, a little ſhorter than they, after flowering bent down towards the ground, compreſſed, ancipital, ſmooth with a glaucous bloom, ſlightly ſtreaked, ſolid. Germ bright green, ſhortly pedicelled, oval, three-cornered, ſmooth with the ſame glaucous bloom. Tube of the corolla very pale green, two inches and an half long, hexangular with the alternate angles narrower, not ſtriated as in the other ſpecies: border ſnow-white, one-fourth longer than the tube, recurved; ſegments linear, quite entire, bluntly mucronate, the outer ones a little narrower and much more concave: crown ſnow-white, ſhorter than the border by two-thirds, funnel-form, more contracted at the baſe than the tube, repand-emarginate at the ſinuſes, but ſometimes produced into a biſid ligule, ſomewhat wrinkled, thin, even, ſhrivelling. Filaments higher than the crown by one-fourth [c].

Mr. Saliſbury affirms that Linnæus has made up his P. caribæum from the doubtful ſynonyms of Sloane and Martyn, and that of Commelin, which according to him does not belong to this ſpecies.—Miller's plant does not ſeem to be the ſame with Mr. Saliſbury's, and conſequently not Martyn's, which is undoubtedly the ſame with Miller's.]

[a] Dillenius. [b] Hort. kew. [c] Linn. tranſ. 2. 72.

4. This has a large, coated, bulbous root, of an oblong form, covered with a dark skin; the leaves are shaped like a tongue; they are more than a foot long, and one inch broad, of a deep green, six or seven of them rising together from the same root, encompassed at bottom with a sheath; between these arises the stalk, which is a foot and half long, naked, sustaining at the top six or eight white flowers, inclosed in a sheath, which withers and opens on the side, to make way for the flowers to come out. The germs are situated close to the top of the stalk, from these arise the tubes of the flowers which are three inches long; they are very narrow, swelling at the top, where the cup or nectarium is situated, on the outside of which are fastened the six segments or petals of the flower; these are narrow, and extend a great length beyond the nectarium; from the border of the nectarium arise six long slender stamina, terminated by oblong summits which are prostrate, and in the centre arises a style the length of the stamina, terminated by an obtuse stigma.

Mr. Miller, in his figures, has added some particulars. The root resembles that of the Squill, but is less, covered with a brown skin, and white within, the coats pellucid and gently striped, viscid or full of a clammy juice, bitter to the taste without acrimony. Leaves seven or eight from full-grown roots, twelve or fourteen inches long, flat, of a gray colour, rounded at the ends. The sheath divides into two parts, which turn back. The nectarium is cut at top into ten segments, which spread open. The long filaments are incumbent on the petals. The seeds are black.

[Linnæus remarks, that the petals are lanceolate, with a green line underneath; the three outer hooked inwards at the tip. The angles of the nectary two-parted, acuminate, the length of the filaments, and divaricating to the breadth of the petals. The middle germs of the umbel sessile. Style declining. Filaments bent in.

Cavanilles thus describes it. Bulb subglobular, three inches in diameter, with a brown skin, composed within of thick white coats full of juice. From the base arise many filiform whitish fibres. Scape a foot and half high, cylindric-compressed, very smooth, green, terminated by an umbel of flowers. Leaves linear and channelled, with a blunt back, embracing at the base, from four to seven in number. Spathe deeply bifid, the divisions concave-lanceolate, almost equal, shrivelling; from their centre proceed from seven to twelve rays, separated by very short acute bractes. Corolla superior, funnel-shaped: tube green, round, three or four inches long: border six-cleft; segments white, lanceolate, spreading, with a green dorsal nerve. At the top of the tube and at the origin of the segments there is a subcylindric white body, an inch long, with a spreading, twelve-cleft mouth, supporting the six stamens. Filaments awl-shaped, yellowish, planted between the segments, and running along the inside to the base. Anthers yellow, oblong, twin. Germ inferior, ovate-three-cornered: style simple, filiform, sheathed by the tube of the corolla, a little longer than the stamens, white, scarcely declining: stigma obscurely three-cornered. Capsule ovate-three-cornered, three-celled, three-valved. Seeds compressed, imbricate in three rows round the base of the style.

Native of the South of Europe, as in Spain about Valencia, &c. on the coast; found by Clusius near Montpellier; by Ray near Naples and in Sicily. Cultivated in 1629, by Mr. John Parkinson [1].

Cavanilles remarks, that the leaves are too broad in Miller's figure, as they might well be in a garden specimen: Clusius's small figure observes the proportion of the parts: but that his own is in due size and proportion both. He informs us also from Clusius, that this plant very seldom flowers, when it is removed from its native soil, and then only when the flower is formed in the bulb.

Mr. Salisbury makes not only the *P. maritimum* of Linnæus and Cavanilles (whose figure he condemns) synonimous with his *maritimum*; but also the *carolinianum* of Linnæus, and the *verecundum* of the Kew catalogue. He describes it as a plant a foot and half in height. Leaves six or seven, bifarious, sheathing at the base, from upright spreading, more or less twisted, linear, quite entire, blunt, smooth on both sides with a glaucous tinge, a little striated, flattish, fleshy. Flowers sweet, from six to ten in a bunch. Peduncle (or scape) pale glaucous, from one side among the leaves, erect, compressed, blunt not ancipital, even. Germ pedicelled, oval, three-cornered. Tube of the corolla pale green, cylindrical, angular at top: border snow-white, a little shorter than the tube, from spreading-recurved: segments from the cleft to the middle fastened to the crown, with the sides reflex at bottom, linear-lanceolate, quite entire, bluntly mucronate. Crown (or nectary) snow-white, a little shorter than the border, funnel-shaped, spreading at the tip, grossly two-toothed at the sinuses, even, shrivelling. Filaments very short, scarcely higher than the teeth of the crown, incurved, awl-shaped.

Mr. Salisbury remarks that it seldom flowers when cultivated, which agrees with what was observed above by Cavanilles from Clusius. He gathered it on the sandy coast below Montpellier in 1786 [2].

5. Leaves tongue-shaped, sharp at both ends, quite entire, shining, erect, three feet long, three or four inches wide. Scape the length of the leaves, very much compressed, ancipital, an inch and half wide, green, the whole always prostrate. Spathe twelve-flowered or thereabouts. Flowers sweet, white, sessile, almost half a foot in diameter, with the segments slightly exceeding the tube; nectary an inch long: filaments the length of the corolla [3].

Mr. Salisbury, disliking Jacquin's trivial name, because several other species have a *declinate* scape, when in fruit; and also the younger Linnæus's, of *erectum*, has given this species the name of *amœnum*, and refers Commelin's figure in t. 87. to this, which Linnæus applied to his *caribæum*. According to him, the plant is two feet high. Leaves nine to twelve, green, bifarious, sheathing at the base, recurved, lanceolate, quite entire, bluntish, smooth on both sides, finely streaked, channelled, keeled at the base, fleshy. Flowers fragrant, from ten to fifteen in a bunch. Peduncle (or scape) pale glaucous, among the inner leaves, a little shorter, at first upright, but after flowering bent down, very much compressed and ancipital, smooth with a bloom, a little streaked, solid. Germ bright green, sessile, oval, three-cornered, smooth. Tube of the corolla pale green, two inches and a half long, roundish, thickly streaked: border snow-white, longer by half than the tube, recurved: segments almost equal, linear, quite entire, bluntly mucronate, when expanded equally concave, the sides a little doubled in at the base. Crown snow-white, a little more than two-thirds shorter than the border, funnel-shaped, more contracted at the base than the tube, with the sinuses generally produced into a bifid ligule, somewhat wrinkled, thin, even, shrivelling. Filaments twice as high as the crown [4].

Probably native of Cayenne. Cultivated in gardens at Martinico [5].]

6. This has a roundish bulbous root, covered with a light brown skin, from which arise several narrow dark green leaves, about a foot long: among these comes out a thick stalk (scape) about nine inches high, sustaining six or seven white flowers, with very narrow petals, having large bell-shaped nectariums or cups, deeply indented on their brims. The stamens do not rise far above the nectarium.—Mr. Catesby discovered it in moist boggy soils in Georgia.

[Native of Jamaica and Carolina [6]. Cultivated in 1759, by Mr. Miller [7].—According to Mr. Salisbury, this is not different from *maritimum*.]

7. This has a large bulb, covered with a dark skin, sending out many thick strong fibres, striking deep in the ground. Leaves a foot and half long and two inches broad, of a grayish colour. Scapes thick, succulent, near two feet high. Flowers six or seven,

[1] Hort. kew.
[2] Linn. transf. 2. 70. [3] Jacqu. amer. [4] Linn. transf. 2. 71 [5] Jacquin. [6] Linn. [7] Hort. kew.

white, ſhaped like thoſe of *maritimum*, but with a ſhorter tube, and much longer ſtamens. It flowers in june, and frequently produces ſeeds, which ripen in ſeptember.

[Linneus obſerves, that the leaves are the ſame ſize with thoſe of the Snow-drop.

Native of the South of Europe. Cultivated in 1615, by Mr. John Parkinſon [a].] Mr. Miller ſays, it grows naturally in Sclavonia and Sicily.

According to Mr. Saliſbury, Linneus confounded this with another ſpecies, which Jacquin has named *litterale*. Mr. S. names it *ſtellare*, and applies the ſynonyms of Miller in his figures and of Cluſius which are given to *maritimum*, and of Seba, which is attributed to *illyricum*. He figures it in t. 14. and thus deſcribes it.—Plant a foot high or more. Leaves commonly ſix, glaucous, bifarious, ſheathing at the baſe underground, from erect-recurved, narrow ſpatule-ſhaped, quite entire, blunt, ſmooth with a bloom, very finely ſtreaked, concave, ſomewhat ſucculent. Flowers ſweet, from ſeven to fifteen in a bunch. Peduncle (ſcape) pale glaucous, among the leaves on one ſide, ſolitary, but ſometimes a ſecond from a different axil, erect, very much compreſſed and ancipital, declining when in fruit. Germ pedicelled, oval, triangular. Tube of the corolla pale green, triangular: border white, longer than the tube, ſpreading very much: ſegments lanceolate, flattiſh, the inner narrower. Crown white with a yellow bottom, ſpreading out handſomely like a ſtar, more contracted at the baſe than the tube, much ſhorter than the border, with the ſinuſes deeply biſid, even, ſhrivelling. Filaments double the height of the crown or thereabouts.

It grows wild on the ſandy coaſt of the Iſle of Ree near Rochelle, according to Moriſon. It leafs in april, flowers in june, and the leaves wither at the end of auguſt [b].

8. Bulb the ſize of the fiſt. Leaves enſiform, quite entire, acute, ſhining, ſpreading, deep green, three or four feet long, ſcarcely an inch and half in breadth, imbricate at the baſe and diſtich, embracing each other. Scape two feet high, very much compreſſed, an inch wide on one ſide, ancipital, ſhining, green with a glaucous bloom, axillary, erect or ſometimes declining. Spathe ten-flowered or thereabouts. Flowers handſome, ſpreading, ſeſſile at the top of the ſcape, having an agreeable aromatic odour. Tube of the corolla pale green, round, ſlender, ſlightly widening at the baſe, eight inches long: border white; diviſions linear, channelled, quite entire, ſpreading very much, three inches long, with the tips more or leſs thickened and ſolid. Nectary bell-ſhaped, eroſe-emarginate, one-third of the length of the ſegments of the corolla, ſpreading, white. Filaments awl-ſhaped, ſpreading, green, ſhining, not exceeding the border of the corolla. Anthers orange-coloured.

Found abundantly on the ſandy coaſt of the iſland of Tierra Bomba near Carthagena, by Nic. Joſ. Jacquin [c].

According to Mr. Saliſbury it is three feet high or more. Leaves nine to twelve, from erect-recurved, linear-lanceolate, bluntiſh, ſmooth on both ſides, convex, keeled towards the baſe, fleſhy. From ſeven to ten flowers in a bunch. Scape among the lower leaves, and a little ſhorter, erect in flowering time, afterwards declining, ſtriated, ſolid. Germ ſeſſile, oblong, three-cornered, ſmooth. Tube of the corolla obſcurely three-cornered, ſtriated a little: border ſhorter by half than the tube, recurved; diviſions almoſt equal, bluntly mucronate, faſtened to the crown at the baſe, concave. Crown ſnow-white, ſhorter by two-thirds than the border, funnel-ſhaped, about the ſame diameter with the tube at the baſe, ſpreading wide at top, repand or eroſe in the ſinuſes, ſomewhat wrinkled, even, ſhrivelling. Filaments one and a quarter higher than the crown. In the Species Plantarum it is confounded with the *illyricum*, and hence has ſometimes gone under that name [d].

9. Leaves a foot and half long, half an inch wide. Scape erect, compreſſed, a foot high. Spathes oblong-lanceolate, acuminate, whitiſh, ſhrivelling; the outer larger, an inch and half in length. Flowers fragrant, on three-cornered pedicels, ſcarcely half an inch long. Corolla one-petalled: tube cylindric-three-cornered, greeniſh, ſcarcely two inches long, the thickneſs of a ſwan's quill: border bell-ſhaped, ſix-parted; ſegments acute, a little ſhorter than the tube, ſnow-white, greeniſh on the outſide in the middle. Nectary bell-ſhaped, ſhorter than the ſegments of the corolla, ſix-cleft; the ſegments biſid. Style declining, greeniſh. Stigma obſcurely three-lobed.

Native of the Eaſt Indies. Cultivated in 1776, by Mrs. Theobald. It flowers from june to auguſt [a].]

10. Bulb oblong, white, ſending out ſeveral thick fleſhy fibres, which ſtrike downward. Leaves on very long footſtalks, ſome ovate, others heart-ſhaped, about ſeven inches long and five broad, ending in points, having many deep longitudinal furrows; they are of a light green, and their borders turn inwards. Stalk thick, round and ſucculent, riſing near two feet high, ſuſtaining at the top ſeveral white flowers, ſhaped like thoſe of the other ſorts, but the petals are broader, the tube is ſhorter, and the ſtamens are not ſo long as the petals. There is a thin ſheath, which ſplits open longitudinally.—Native of Amboyna.

P. americanum grows naturally in the iſlands of the Weſt Indies, where it is called *White Lily*. This has a pretty large bulb, a little flatted at the top, covered with a brown ſkin. Leaves near a foot and half long, and little more than an inch broad, dark green, and hollowed in the middle like the keel of a boat. Stalks near two feet high, thick, ſucculent, ſuſtaining at the top eight or ten white flowers, ſhaped like thoſe of *maritimum*, but of a purer white, and having a ſtrong ſweet odour, like that of Balſam of Peru. Stamens very long, ſpreading out wide each way. Piſtil of the ſame length. The flowers ſeldom continue longer than three or four days, and in very hot weather not ſo long. When theſe fade, the germs, which are at the bottom of the tubes, turn to ſo many oblong bulbs, which are irregular in form, and when ripe, drop off in the ground, where they put out fibres and become plants.

P. latifolium alſo grows naturally in the Weſt Indies, where it is not diſtinguiſhed from the preceding. This however differs from it, in the leaves being much longer and broader than that; for theſe are near two feet long and more than three inches broad; hollowed like the keel of a boat, like the other. The flowers are larger, the petals longer, and the ſcent not ſo ſtrong as that of the former. The roots flower in every ſeaſon of the year.

Cultivated by Mr. Miller in 1759.

Mr. Miller has added another ſort in his laſt quarto edition of 1771, which he names *P. ovatum*. This alſo grows naturally in the Weſt Indies, and has a large, roundiſh bulb, from which ariſe ſeveral ovate leaves, about a foot long, and ſix inches broad in the middle, drawing to a point at both ends; they are of a deep green, and have many longitudinal furrows. The ſtalk is thick and ſucculent, a foot and half high, ſuſtaining at the top ſix or eight white flowers, of an agreeable ſweet ſcent, ſmaller than thoſe of the preceding, (*americanum*); the petals are narrower, the tubes ſhorter, and ſo are the ſpathes.

Cultivated by Mr. Miller in 1771.

[Mr. Saliſbury's fourth ſpecies figured in t. 12. and deſcribed in p. 73. is entitled *ſpeciosum*. His ſpecific character is this—petioles narrow, tube of the corolla triangular, thinly ſtriated; ſegments longer than the tube, ſpreading and recurved a little, linear, alternately more concave, ſinuſes of the crown with a biſid ligule or proceſs.—He thus deſcribes it: Plant a foot and half high. Leaves nine to twelve, green, bifarious. Petioles narrow, ſheathing with the widened baſe, recurved, linear, half round, flat above. Leaves three times as long as the petioles, recurved, lanceolate, quite entire, blunt, ſtriated, ſomewhat concave, keeled

[a] Hort. kew. [b] Linn. tranſ. 2. 74. [c] Jacqu. amer. [d] Linn. tranſ. 2. 74.

[a] Hort. kew.

towards the base, smooth above, even beneath, fleshy. Flowers fragrant, from eleven to fifteen in a close bunch. Peduncle or scape pale green, among the lower leaves, than which it is a little shorter, much wider than in the rest, erect in flowering time, but afterwards declining, compressed, with one side flatter, ancipital, smooth, very finely striated, solid. Interior bractes very wide. Germ pedicelled, suboval, triangular, smooth. Tube of the corolla three inches long, cylindrical, triangular, thinly striated, abounding in nectareous juice: border snow-white, longer by half than the tube, spreading and a little recurved; segments nearly equal in breadth, linear, quite entire, the exterior longer and more concave, and also more pointed. Crown snow-white, twice and a half shorter than the border, funnel-shaped, more contracted at the base than the tube, in the middle of the sinuses produced into a wedge-shaped ligule usually bifid, somewhat wrinkled, even, shrivelling. Filaments once and a half higher than the crown. This species is distinguished at first sight by the width of the interior bractes.

Mr. Salisbury does not mention the native country of this species: but says that it has hitherto flowered in his stove only in the month of october [1].

PROPAGATION AND CULTURE.

The sorts of the East and West Indies are too tender to thrive in England out of a good stove. If the pots be plunged into the bark bed, they will thrive and flower very well. In the dry stove, their flowers will not be so strong, nor will they appear oftener than once a year; whereas in the tan-bed, they will often flower two or three times. They are propagated by offsets from the roots, or by the bulbs which succeed the flowers. If the latter be planted in small pots filled with light earth from a kitchen garden, and plunged into a moderate hot-bed, they will soon put out roots and leaves, and with care will become blowing roots in one year: if these are kept constantly in the tan-bed, they will put out offsets from the roots, and thrive as well as in their native countries.

4. Sea Pancratium must be planted in a very warm border, and screened from severe frost, otherwise it will not live through the winter in England.

7. This sort is hardy, and will thrive through the winter in the full ground; in very severe seasons the surface should be covered with tanner's-bark, sea-coal ashes, straw, or peas-haulm. It is propagated either by offsets from the roots, or from seeds. The offsets will flower very strong the second year, whereas those which are raised from seeds seldom flower in less than five years.

The roots should not be removed oftener than every third year, if they be expected to flower strong. The best time to transplant them is in the beginning of october, soon after their leaves decay. They should not be kept long out of the ground, for as they do not lose their fibres every year, if these are dried, it greatly weakens the roots. It loves a light sandy soil, and a sheltered situation; the roots should be planted nine inches or a foot asunder every way, and five inches deep in the ground.

If the plants are propagated by seeds, they should be sown in pots filled with light earth soon after they are ripe: these pots should be placed under a hot-bed frame in winter, but the glasses must be taken off every day in mild weather. For the other management see NARCISSUS: only the young roots will require a little protection in winter, till they have obtained strength.

[PANDACAQUI. See *Chiococca*.

PANDANUS. (*Pandan is said to be an Indian name.*) *Rumph. Ins. gen. Schreb. n.* 1485. *Suppl.* 64. *Juss.* 444. Athrodactylis. *Forst. gen.* 75. Keura. *Thunb. nov. gen.* 26. *Forsk. aegypt.*

Class. 22. 1. Dioecia Monandria.

GENERIC CHARACTER.

* *Male.*

CAL. *Spathes* alternate, sessile, serrate-spiny. *Spadix* decompound, naked. *Perianth* proper none.

[1] Linn. trans. 2. 73.

COR. none.

STAM. *Filaments* very many, solitary, placed scatteringly on the outer ramifications of the spadix, very short. *Anthers* oblong, acute, erect.

* *Female.*

CAL. *Spathes* four, terminating, converging. *Spadix* globular, covered with numerous fructifications, scarcely included. *Perianth* none.

COR. none.

PIST. *Germs* numerous, aggregate, sessile, five-cornered, convex at top, smooth. *Style* none. *Stigmas* two, cordate, margined.

PER. *Fruit* subglobular, large, consisting of numerous, wedge-shaped *drupes*, convex at top, angular, farinaceous, one-seeded.

SEED solitary, oval, even, in the centre of the drupe.

ESSENTIAL CHARACTER.

Cal. and *Cor.* none.

MALE. *Anther* sessile, inserted into the ramifications of the spadix.

FEM. *Stigmas* two. *Fruit* compound.

SPECIES.

1. Pandanus odoratissimus. *Sweet-scented Pandanus* or *Screw Pine.*

Lin. syst. 878. *suppl.* 424. *Roxb. corom.* 4. 65. *t.* 94, 95, 96. *Forst. flor. austral. n.* 365. *escul.* 38. *n.* 10. *Leur. cochinch.* 603.

Pandanus. *Rumph. amb.* 4. 139. *t.* 74—81.

Bromelia. *Lin. syst. n.* 131.

Kaidi. *Rheed. mal.* 2. 1. *t.* 1—5. *Raii hist.* 1441. 3.

Keyra. *Forsk. aegypt.* 172.

Athrodactylis spinosa. *Forst. gen. n.* 75.

DESCRIPTION, *&c.*

Now and then a plant may be found with a single and pretty erect trunk of ten feet in height, and a branching round head; but it is generally in form of a very large, branching, spreading bush. From the stems or larger branches issue large carrot-shaped blunt roots, descending till they come to the ground, and then dividing. The substance of the most solid is something like that of a cabbage stalk, and by age acquires a woody hardness on the outside. Leaves confluent, stem-clasping, closely imbricated in three spiral rows, round the extremities of the branches, bowing, from three to five feet long, tapering to a very long fine triangular point, very smooth and glossy, margins and back armed with very fine sharp spines; those on the margins point forward, those of the back point sometimes one way, sometimes the other.

Male flowers are in a large, pendulous, compound, leafy raceme, the leaves of which are white, linear-oblong, pointed and concave; in the axil of each, there is a single thyrse of simple small racemes of long-pointed depending anthers; they are not sessile, but raised from the rachis of the raceme by tapering filaments.

Female flowers, on a different plant, terminating and solitary, having no other calyx or corolla than the termination of the three rows of leaves forming three imbricated fascicles of white floral leaves, like those of the male raceme, which stand at equal distances round the base of the young fruit. Germs numerous, collected in firm wedge-shaped angular bundles of from six to ten or more, forming the compound germs of the future drupes, closely impacted round the receptacle. Style none. Stigma single, oval, grooved lengthwise, yellow, affixed to the outside of a two-lipped umbilicus on the apex of the germ. Fruit compound, oval, from five to eight inches in diameter, and from six to ten in length, weighing from four to eight pounds, rough, of a rich orange colour composed of numerous wedge-shaped angular drupes; when ripe, their large or exterior ends are detached from one another, and covered with a firm deeper orange-coloured skin; apices flat, consisting of as many angular somewhat convex tubercles as there are cells in the drupe, each crowned with the withered stigma internally; the exterior half of these drupes, next the apex, consists of dry spongy cavities, their lower part next the core or common receptacle is yellow, consisting of a rich-looking yellow pulp, intermixed with strong fibres; here the nut is lodged.

This

This is compound, top-ſhaped, exceedingly hard, angular, containing as many cells as there are diviſions on the apex of the drupe; each cell is perforated above and below. Seed ſingle, oblong, ſmooth, adhering lengthwiſe to a ſmall faſcicle of ſtrong white fibres, which paſs through the perforation of the cell. By far the greater number of theſe cells are barren.

It is a native of the warmer parts of Aſia. All ſoils and ſituations ſeem to ſuit it equally well: it flowers chiefly during the rainy ſeaſon.

This plant is much employed there for hedges, and anſwers well, but takes much room. It grows readily from branches, whence it is rare to find the full-grown ripe fruit.

The tender white leaves of the flowers, chiefly thoſe of the male, yield that moſt delightful fragrance, for which they are ſo generally eſteemed; and of all the perfumes it is by far the richeſt and moſt powerful.

The lower yellow pulpy part of the drupe is ſometimes eaten by the natives in times of ſcarcity and famine. The tender white baſe of the leaves is alſo eaten raw or boiled at ſuch melancholy times. The taſte of the pulpy part of the drupe is very diſagreeable.

The roots are compoſed of tough fibres, which baſket-makers uſe to tie their work with; they are ſo ſoft and ſpongy as to ſerve the natives for corks: the leaves alſo are compoſed of longitudinal, tough, uſeful fibres.

It is not cultivated in the Eaſt Indies with any other view than for fences[2].

In the Supplement of the younger Linneus it is ſaid, from Forſkahl and Thunberg, to be cultivated for the ſake of its fragrance.

In the South Sea iſlands, where the Pandanus is alſo a native, this or ſome other ſpecies or variety is uſed for making mats. The leaves are beautifully white and gloſſy. In the Sandwich iſlands theſe mats are handſomely worked in a variety of patterns, and ſtained of different colours. The branches being of a ſoft ſpongy juicy nature, cattle will eat them very well, when cut into ſmall pieces. They call it *Wharra Tree* at Otaheite[3].

Mugalie is the Telinga name of the male plant, and *Gbæzangee* that of the female. *Caldera* is the name they are known by amongſt Europeans on the coaſt of Coromandel[4].

It grows alſo in China and Cochinchina, according to Loureiro, and is uſed for hedges and feeding tame elephants, &c. Its fragrance is not in much eſteem there.

Forſter ſays that the fruit in Otaheite is called *e-Vara*, and the male flowers *Hinanno*: that it is found of ſandy coaſts, and is found on almoſt all the iſlands of the Southern ocean, within the tropics, even on thoſe which are occaſionally inundated; that it reſembles the Ananas in the fruit and leaves, and may be connected with the Palms with more propriety than Stratiotes and Vallisneria; that it is cultivated in Arabia and Ceylon on account of the fragrancy of the male flowers; that the women in India, eſpecially on the iſlands, powder their hair with the duſt of the anthers, which is very fragrant, and that they lay up the floral leaves and bunches of flowers among their clothes; that in Ternate they dreſs the flowers before they open as ſauce for fleſh and fiſh; that in Banda they lay the leaves on wounds; that in India the fruit is eaten by elephants, in Otaheite and the neighbouring iſlands by children, and when bread-fruit is ſcarce, even by grown perſons; and that it has a fine aromatic ſcent like the Strawberry or the Pine-apple, a taſte at firſt ſweetiſh, but afterwards aſtringent and auſtere.

He mentions four varieties figured in the Hortus Malabaricus, t. 5, 6, 7, 8. and ſays that ſome varieties have no fragrance[5].—Loureiro has diſtinguiſhed two other ſpecies—*humilis*, hort. malab. t. 6. and *levis*. Rumph. amb. p. 147.

It was introduced into England in 1771, by Monſ. Richard, but has not yet flowered in our ſtoves[6].

[2] Roxburgh.
[3] Hawkſw. voy. 2. 217. Third voy. 1. 206. & 3. 149.
[4] Roxburgh. [5] Eſcul. [6] Hort. kew.

PANDI-PAVEL. See *Momordica*.

PANJA. See *Bombax*.

PANICASTRELLA. See *Conchrus*.

PANIC-GRASS and PANICI EFFIGIE. See *Panicum*.]

PANICUM (*of Pliny*. A Pane: *from Bread*, Lin. *From* panus, *of which* panicula *is a diminutive*; *from* πανος, *der.* πατος, Voſſius.)

Lin. gen. n. 76. *Reich. n.* 82. *Schreb. n.* 108. *Gærtn. t.* 1. *Juſſ.* 29. Digitaria. *Hall.*

Claſſ. 3. 2. Triandria Digynia.

Nat. order of *Gramina*, *Graminæ* or *Graſſes*.

GENERIC CHARACTER.

CAL. *Glume* two-flowered, two-valved: *valves* ſubovate, nerved: the outer valve a little lower, very ſmall: one floret hermaphrodite, the other neuter or male.

COR. of the hermaphrodite, *Glume* two-valved; the outer valve (in the boſom of the ſmaller calycine valve) flattiſh, nerved; the inner membranaceous, flat, with the edges bent in: often ſmall or very ſmall.

Nectary two-leaved, very ſmall, gibbous. In the neuter florets none.

STAM. *Filaments* three, capillary. *Anthers* oblong. The neuter florets have no ſtamens.

PIST. in the hermaphrodites, *Germ* roundiſh. *Styles* two, capillary. *Stigmas* feathered. In the neuters none.

PER. none. Corolla adheres to the ſeed without opening.

SEED one, covered, roundiſh, flattiſh on one ſide.

OBS. *Neglecting the inner valve of the neuter floret, the outer ſeems to belong to the calyx; hence three calycine valves are commonly reckoned by botaniſts, among which the third is very ſmall.*

ESSENTIAL CHARACTER.

Cal. two-valved, the third valve very ſmall.

SPECIES.

Spiked.

[1. Panicum polyſtachyon. *Many-ſpiked Panic-graſs.*
Lin. ſpec. 82. *ſyſt.* 105. *Reich.* 153. *Willd.* 335. *mant.* 322. *Vahl ſymb.* 2. 18. *Lour. cochinch.* 46.
Phalaris ſetacea. *Forſk. deſcr.* 17.
Gramen caricoſum alterum. *Rumph. amb.* 6. 17. *t.* 7. *f.* 2. B.
Spikes round, involucrets one-flowered in bundles and briſtly, culms erect, branched at top.

2. Panicum ſericeum. *Silky Panic-graſs.*
Ait. hort. kew. 1. 38. *Lin. ſpec. ed. Willd.* 334.
Spike round, involucres briſtle-ſhaped villoſe one-flowered the length of the flowers, leaves flat.

3. Panicum verticillatum. *Rough Panic-graſs.*
Lin. ſpec. 82. *Reich.* 153. *Willd.* 334. *Huds. angl.* 24. *Wither. arr. ed.* 3. 114. *Curt. lond.* 4. 6. *Hall. helv. n.* 1543. *Pollich pal. n.* 57. *Heſſm. germ.* 21. *Roth. germ.* 1. 26. 2. 69. *Krock. ſileſ. n.* 88. *t.* 19. *Villars dauph.* 2. 63. *Thunb. jap.* 45.
P. vulgare ſpica ſimplici & aſpera. *Tourn. inſt.* 515.
Gramen paniceum ſpica aſpera. *Bauh. pin.* 8. *theat. t.* 139. *Schench. gram.* 47. *Dill. giſſ. app.* 5. *Raii ſyn.* 394. *hiſt.* 1262. *Mor. hiſt. ſ.* 8. *t.* 4. *f.* 11.
Gr. geniculatum tertium. *Tabern. hiſt.* 516.
P. ſylveſtre. *Bauh. hiſt.* 2. 469. 1.
Spike whorled, racemelets in fours, involucrets one-flowered two-briſtled, culms diffuſed.

4. Panicum hoſvolum. *Pale red Panic-graſs.*
Lin. ſyſt. 105. *Willd.* 334. *ſuppl.* 107.
Spike round, involucrets one-flowered in bundles and briſtly, ſeeds nerved.

5. Panicum glaucum. *Glaucous Panic-graſs.*
Lin. ſpec. 83. *ſyſt.* 105 *Reich.* 1. 153. *Willd.* 335. *Fl. zeyl. n.* 44. *Gærtn. fruct.* 1. 2. *Hall. helv. n.* 1542. *Leers herborn. n.* 39. *t.* 2. *f.* 2. *Heſſm. germ.* 21. *Roth.* 1. 27. 2. 70. *Krock. ſileſ. n.* 90. *Villars dauph.* 2. 63. *Schreb. ſpicil.* 44. *gram. t.* 25. *Gron. virg.* 134.
P. luteſcens. *Weig. obſ.* 20.
Panici effigie gramen ſimplici ſpica. *Lob. ic.* 13.
Spike round, involucrets two-flowered in bundles and hairy, ſeeds waved and wrinkled.

6. Panicum viride. *Green Panic-graſs.*
Lin. ſpec. 83. *Reich.* 1. 154. *Willd.* 335. *Huds. angl.* 24. *Wither. arr. ed.* 3. 115. *Curt. lond.* 4. 5.

Relh. cant. suppl. n. 997. *Leers herborn. n.* 40. *t.* 2. *f.* 2. *Hoffm.* 21. *Roth. germ.* 1. 27. 2. 69. *Krock. sil. n.* 89. *Schreb. spicil.* 44.

P. cynosuroides. *Scop. carn. n.* 68.

P. sylvestre spica simplici & molliori. *Tournef. inst.* 515.

Gramen paniceum I. Panicum sylvestre, spica simplici. *Bauh. pin.* 8. *Scheuch. gram.* 46. *Mor. hist.* 3. 139. *f.* 8. *t.* 4. *f.* 10. *Park. theat.* 1154.

Gr. pan. spica simplici lævi. *Raii hist.* 1261. *syn.* 393.

Spike round, involucrets two-flowered in bundles and hairy, stems nerved.]

7. Panicum germanicum. *German Panic-grass.*
Lin. spec. Willd. 336. *Roth. germ.* 1. 27. 2. 71. *Hoffm. germ.* 21.

P. germanicum I. paniculâ minore. *Bauh. pin.* 27. *Rupp. jen.* 303. *Raii hist.* 1247.

P. album vulgare. *Volck. norimb.* 317.

β. With involucrets shorter than the flower.

Spike compound close, spikelets glomerate, involucrets bristle-shaped longer than the flower, rachis hirsute.

8. Panicum italicum. *Italian Panic-grass.*
Lin. spec. 83. *syst.* 105. *Reich.* 1. 154. *Willd.* 336. *vir. cliff.* 7. *hort. upsf.* 19. *Gron. virg.* 134. *Weig. obs.* 22. *Lour. cochinch.* 46. *Rumph. amb.* 5. 202. *t.* 75. *f.* 2.

P. italicum I. paniculâ majore. *Bauh. pin.* 27. *theat.* 519.

P. indicum panic. villosa. *Park. theat.* 1139. *Raii hist.* 1247.

P. indicum. *Ger.* 78. 1. *emac.* 84. 1.

Spike compound with the base interrupted nodding, spikelets glomerate, involucrets bristle-shaped much longer than the flower, rachis tomentose.

[9. Panicum ferosum. *Bristly Panic-grass.*
Lin. spec. ed. Willd. 336. *Swartz prodr.* 22. *descr.* 139.

Spike compound, spikelets panicle-fascicled, bristles mixed with the florets and very long, peduncles almost smooth.

10. Panicum lanceolatum. *Spear-leaved Panic-grass.*
Lin. spec. ed. Willd. 337. *Retz. obs.* 5. 17.

Spikes alternate, outer valve of the calyxes ciliate and awned, leaves lanceolate.

11. Panicum stagninum. *Pond Panic-grass.*
Lin. spec. ed. Willd. 337. *Retz. obs.* 5. 17.

P. hispidum. *Forst. flor. austral. n.* 36 ?

Spikes alternate directed one way, calyxes two-flowered awned hispid.

12. Panicum Crus corvi. *Crow-foot Panic-grass.*
Lin. spec. 84. *Reich.* 1. 154. *Willd.* 337. *Lour. cochinch.* 46. *Thunb. jap.* 46.

Spikes alternate directed one way, spikelets subdivided, glumes sometimes awned hispid, rachis three-cornered.

13. Panicum Crus galli. *Thick-spiked Cock's-foot Panic-grass.*
Lin. spec. 83. *syst.* 105. *Reich.* 1. 155. *Willd.* 337. *fl. fuec. n.* 55. *vir. cliff.* 7. *hort. cliff.* 27. *Hudf. angl.* 24. *Wither. arr. ed.* 3. 115. *Curt. lond.* 4. 8. *Hall. helv. n.* 1544. *Pollich pal. n.* 59. *Leers herborn. n.* 41. *t.* 2. *f.* 3. *Hoffm. germ.* 22. *Roth. germ.* 1. 27. 2. 72. *Krock. sil. n.* 93. *Villars dauph.* 2. 65.

Gr. paniceum spica divisa. *Bauh. pin.* 8. *theat.* 136. *Scheuch. gram.* 49. *Mor. hist.* 3. 189. *f.* 8. *t.* 4. *f.* 15. *Raii syn.* 394. *hist.* 1261. *Reliq. Rudb.* 1. 8. *f.* 1.

P. vulgare. *Ger.* 79. 5. *emac.* 85. 4.

P. sylvestre herbariorum. *Park. theat.* 1154. 1.

Gramen Mannæ alterum. *Ded. pempt.* 559. 2.

Dens caninus fecundus. *Bauh. hist.* 2. 434.

β. Gr. pan. spica divisa, aristis longis armata. *Bauh. pin.* 8. *theat.* 137. *Scheuch. gram.* 48. *Mor. f.* 16. *Ger.* 15. 1. *emac.* 16. 1. *Park. theat.* 1154. 4. *Bauh. hist.* 2. 443. 2.

Spikes alternate and conjugate, spikelets subdivided, glumes awned hispid, rachis five-cornered.

14. Panicum setigerum. *Bristle-bearing Panic-grass.*
Lin. spec. ed. Willd. 338. *Retz. obs.* 4. 15.

Spikes remote, florets directed one way, teeth of the rachis bristle-bearing.

15. Panicum colonum. *Purple Panic-grass.*
Lin. spec. 84. *Reich.* 1. 155. *Willd.* 338. *Vahl symb.* 1. 9.

P. terrestichon. *Forst. descr.* 19. *n.* 62.

Gramen paniceum minus, spica divulsa insulæ barbadensis. *Pluk. phyt. t.* 189. *f.* 5.

Gr. pan. minimum humistratum, sp. divisa mutica, foliis variegatis. *Sloan. jam.* 1. 107. *t.* 64. *f.* 3. *Raii suppl.* 600. *Ehret. pict.* 1. 3. *f.* 3.

Gr. aciculatum. *Rumph. amb.* 6. 13. *t.* 5. *f.* 3.

Spikes alternate directed one way awnless ovate rugged, rachis roundish.

16. Panicum fluitans. *Floating Panic-grass.*
Lin. spec. ed. Willd. 338. *Retz. obs.* 3. 8. & 5. 18. *Vahl symb.* 1. 8. *Pluk. amalth. t.* 417. *f.* 7.

P. geminatum. *Forst. descr.* 18. *n.* 59.

Spikes alternate sessile directed one way, the third calycine valve minute.

17. Panicum brizoides. *Briza-like Panic-grass.*
Lin. syst. 105. *Reich.* 1. 155. *Willd.* 338. *mant.* 184. *Swartz obs.* 36 ? *Retz. obs.* 5. 18. *Pluk. phyt. t.* 191. *f.* 1.

Spikes alternate sessile directed one way, two of the calycine valves much shorter than the corolla and retuse, the third the same length with the corolla.

18. Panicum flavidum. *Yellowish Panic-grass.*
Lin. spec. ed. Willd. 339. *Retz. obs.* 4. 15.

Culm leafy, spikelets remote sessile pressed close directed one way few-flowered.

19. Panicum dimidiatum. *Half-spiked Panic-grass.*
Lin. syst. ed. 13. 90. *Reich.* 1. 156. *Willd.* 339. *Retz. obs.* 6. 23. *Burm. ind.* 25. *t.* 8. *f.* 5.

Spike halved and directed one way, spikelets five-flowered, alternately pressed to the hollowed rachis.

20. Panicum Burmanni. *Wave-leaved Panic-grass.*
Lin. spec. ed. Willd. 339. *Retz. obs.* 3. 10. *Becc. muf.* 2. 66. *t.* 55.

P. hirtellum. *Burm. ind.* 24. *t.* 12. *f.* 1.

P. undulatifolium. *Ard. spec.* 2. 14. *t.* 4.

Spikes mostly four remote directed one way simple, the two outer glumes of the flowers awned.

21. Panicum hirtellum. *Rough-haired Panic-grass,* or *Scotch-grass.*
Lin. spec. 83. *syst.* 105. *Reich.* 1. 156. *Willd.* 340. *amoen.* 5. 391. *Swartz. obs.* 35. *Brown. jam.* 133. 2. *Colliuson app.* 13.

Spike compound, spikelets pressed close alternate, calyxes doubled, all the valves awned, outer longest.

22. Panicum pilosum. *Hairy Panic-grass.*
Lin. spec. ed. Willd. 340. *Swartz prodr.* 22. *descr.* 141. *Sloan. jam.* 1. 114. (Milium).

Spikes panicled alternate directed one way, spikelets in pairs, one smaller, acuminate, even, rachis compressed hairy, culm divaricate jointed.

23. Panicum molle. *Soft Panic-grass.*
Lin. spec. ed. Willd. 340. *Swartz prodr.* 22. *descr.* 143. *Brown. jam.* 133. 1.

Spikes panicled alternate directed one way spreading, spikelets approximating pedicelled directed one way awnless.

24. Panicum fasciculatum. *Fascicled Panic-grass.*
Lin. spec. Willd. 341. *Swartz prodr.* 22. *descr.* 145.

Spikes panicled alternate erect subfastigiate, spikelets directed one way roundish.

25. Panicum carthaginense. *Carthagena Panic-grass.*
Lin. spec. Willd. 341. *Swartz prodr.* 22. *descr.* 148.

Spikes panicled, leaves shorter, spikelets directed one way roundish.

26. Panicum conglomeratum. *Conglomerate Panic-grass.*
Lin. syst. 106. *Reich.* 1. 156. *Willd.* 341. *mant.* 324.

P. indicum. *Lin. mant.* 184. *Retz. obs.* 3. 9.

Aira indica. *Lin. spec.* 94.

Spike directed one way subovate, florets blunt.

27. Panicum interruptum. *Broken-spiked Panic-grass.*
Lin. spec. ed. Willd. 341.

P. caudatum. *Thunb. prodr. cap.* 19?

Spike simple interrupted, spikelets two-flowered pedicelled naked.

28. Panicum sanguinale. *Slender-spiked Cock's-foot Panic-grass.*
Lin. spec. 84. *syst.* 106. *Reich.* 1. 157. *Willd.* 342. *Hudf. angl.* 25. *Wither. arr. ed.* 3. 115. *Curt. lond.* 4. 7. 242. *Fl. dan. t.* 388. *Schreb. gram.* 119. *t.* 16. *Pollich pal. n.* 60. *Gron. virg.* 154. *Burm.*

Burm. ind. t. 10. *f.* 1. *Pallas it.* 1. 36. *Leers herborn. n,* 42. *t.* 2. *f.* 6. *Hoffm. germ.* 22. *Roth. germ.* 1. 28. 2. 73. *Krock. filef. n.* 95.

Digitaria sanguinalis. *Scop. carn. n.* 72. *Hall. helv. n.* 1526.

Phalaris velutina. *Forsk. descr.* 17. *n.* 55.

Gramen dactylon majus repens, foliis hirsutissimis. *Buxb. cent.* 5. 34. *t.* 65.

Gr. dact. folio latiore. *Baub. pin.* 8. *theat.* 114. *Scheuch. gram.* 101. *t.* 2. *f.* 11. *Raii syn.* 399. *hist.* 1272.

Gr. dact. esculentum. *Baub. theat.* 118.

Gr. dact. aquaticum. *Baub. pin.* 118. *Mor. hist.* 3. 184. *f.* 8. *t.* 3. *f.* 5. *Raii hist.* 1273.

Gr. dact. majus, &c. *Sloan. jam.* 1. 113. *t.* 172. *f.* 2.

Ischæmum, gramen sanguinarium 1. *Tabern. ic.* 222. *Dill. giss. app.* 16.

I. sylvestre latiore folio. *Park. theat.* 1178. 1.

I. vulgare. *Ger.* 25. 2. *emac.* 27. 2.

Ischæmon Plinii. *Clus. hist.* 2. 217. 2.

Dens caninus 3. vel Gramen primum, f. Galli crus. *Baub. hist.* 2. 444. 1.

Spikes digitate knobbed at the inner base, florets in pairs awnless, sheaths of the leaves dotted.

29. Panicum Dactylon. *Fingered Panic-grass.*
Lin. spec. 85. *syst.* 106. *Reich.* 1. 157. *Willd.* 342. *Hudf. angl.* 25. *Wither. arr. ed.* 3. 116. *t.* 21. *Monti ic.* 99. *Pollich pal. n.* 61. *Hoffm. germ.* 22. *Roth. germ.* 1. 28. 2. 74. *Krock. filef. n.* 96. *Plenck, ic.* 43.

Digitaria Dactylon. *Scop. carn. n.* 73. *Hall. helv. n.* 1527.

Gramen dactylon, folio arundinaceo majus & minus germanicum. *Baub. pin.* 7 ? *theat.* 112, 113. *Mor. hist.* 3. *f.* 8. *t.* 3. *f.* 4. 6.

P. dactylon radice repente f. officinarum. *Scheuch. gram.* 304. *t.* 2. *f.* 11.

Gr. legitimum. *Clus. hist.* 2. 217. 1.

Gr. repens, cum panicula graminis mannæ. *Baub. hist.* 2. 755. *Raii syn.* 399. *hist.* 1271.

Gr. cartarium ischæmi paniculis. *Park. theat.* 1179. 5.

Gr. dactyloides radice repente. *Ger. emac.* 28. 3.

Spikes digitate spreading, villose at the base on the inside, flowers solitary, runners creeping.

30. Panicum umbrosum. *Shady Panic-grass.*
Lin. spec. ed. Willd. 343. *Retz. obs.* 4. 16.

Spikes about four remote, florets in pairs unequally pedicelled, culm creeping flaccid.

31. Panicum filiforme. *Filiform-spiked Panic-grass.*
Lin. spec. 85. *Reich.* 1. 158. *Willd.* 343. *Thunb. jap.* 48.

Spikes subdigitate approximating erect filiform, rachis flexuose, teeth two-flowered, one sessile, inner valve very small, culm and leaves smooth.

32. Panicum ægyptiacum. *Egyptian Panic-grass.*
Lin. spec. ed. Willd. 343. *Retz. obs.* 3. 8.

P. filiforme. *Jacqu. obs.* 3. 18. *t.* 70.

Spikes subdigitate approximating erect filiform, rachis flexuose, teeth two-flowered, flowers pedicelled, inner valve three-nerved, culm and leaves hairy.

33. Panicum ciliare. *Ciliated Panic-grass.*
Lin. spec. ed. Willd. 344. *Retz. obs.* 4. 16.

Spikes subdigitate approximating erect filiform, rachis flexuose, teeth two-flowered, flowers pedicelled, outer valve ciliate, culm and leaves hairy.

34. Panicum lineare. *Linear-spiked Panic-grass.*
Lin. spec. 85. *syst.* 106. *Reich.* 1. 158. *Willd.* 344. *Retz. obs.* 3. 10. *Burm. ind.* 25. *t.* 10. *f.* 3. *Sloan. jam.* 1. 113. *n.* 28. *t.* 70. *f.* 3. (Gramen dactylon).

Spikes digitate in fours or thereabouts linear, florets solitary directed one way awnless.

35. Panicum cimicinum. *Bug Panic-grass.*
Lin. spec. ed. Willd. 344. *Retz. obs.* 3. 9.

Milium cimicinum. *Lin. mant.* 184.

Panicle umbelled, racemes in fours, one of the calycine glumes ciliate.

36. Panicum distachyon. *Distich-spiked Panic-grass.*
Lin. syst. 106. *Reich.* 1. 158. *Willd.* 345. *mant.* 138. *Retz. obs.* 5. 17.

Spikes in pairs directed one way even—three or four. R.

37. Panicum squarrosum. *Scaly Panic-grass.*
Lin. spec. ed. Willd. 345. *Retz. obs.* 4. 15. & 5. *t.* 1.

Cenchrus muricatus. *Lin. mant.* 302. *Schreb. gram.* 2. 69. *t.* 34.

Spikes in pairs horizontal, involucres of the flowers squarrose, culms decumbent.

38. Panicum hispidulum. *Hispid Panic-grass.*
Lin. spec. ed. Willd. 346. *Retz. obs.* 5. 18.

Spikes binate and ternate erect, calyxes hispid two-awned.

39. Panicum compositum. *Compound-spiked Panic-grass.*
Lin. spec. 84. *syst.* 106. *Reich.* 1. 159. *Willd.* 346. *fl. zeyl. n.* 42.

Spike compound, spikelets linear directed one way, florets in pairs remote, calyxes awned.

40. Panicum elatius. *Tall Panic-grass.*
Lin. syst. 106. *Willd.* 346. *suppl.* 107.

Spike compound, spikelets oblong scattered pressed close, florets crowded, calyxes mucronate-awned.

** *Panicled.*

41. Panicum dichotomum. *Dichotomous Panic-grass.*
Lin. spec. 85. *Reich.* 1. 159. *Willd.* 346. *Gron. virg.* 133.

Panicles simple, culm branched dichotomous.

42. Panicum ramosum. *Branched Panic-grass.*
Lin. syst. 106. *Reich.* 1. 159. *Willd.* 346. *mant.* 29.

Panicle with simple branches, flowers in threes or thereabouts, lower subsessile, culm branched.

43. Panicum deustum. *Burnt Panic-grass.*
Lin. spec. ed. Willd. 347. *Thunb. prodr. cap.* 19.

Panicle spreading, flowers solitary, glumes smooth purple at the tip.

44. Panicum coloratum. *Coloured Panic-grass.*
Lin. syst. 106. *Reich.* 1. 159. *Willd.* 347. *mant.* 30. *Jacqu. misc.* 2. 365. *icon. rar.* 1. *t.* 12.

Panicle spreading, flamens and pistils coloured, culm branched—quite simple. Jacqu.

45. Panicum repens. *Creeping Panic-grass.*
Lin. spec. 87. *syst.* 106. *Resch.* 1. 160. *Willd.* 347.

Panicle rod-like, leaves divaricating.

46. Panicum Ischæmoides. *White Panic-grass.*
Lin. spec. ed. Willd. 348. *Retz. obs.* 4. 17.

Panicle erect contracted, calyxes two-flowered polygamous acute, culm simple, leaves distich rigid.

47. Panicum remotum. *Distant Panic-grass.*
Lin. spec. ed. Willd. 348. *Retz. obs.* 4. 17.

Branches of the panicle three-sided, florets subgeminate one pedicelled, culm branched four-cornered compressed.

48. Panicum stipulatum. *Awned Panic-grass.*
Lin. spec. ed. Willd. 348. *Retz. obs.* 4. 17.

Culm creeping rooting, branches of the panicle undivided, florets in pairs sessile awned.

49. Panicum miliaceum. *Millet Panic-grass.*
Lin. spec. 86. *syst.* 106. *Reich.* 1. 160. *Willd.* 348. *hort. cliff.* 27. *upf.* 20. *mat. med.* 46. *Leur. cochinch.* 47. *Hoffm. germ.* 22. *Roth. germ.* 1. 28. 2. 75. *Krock. filef. n.* 99. *Plenck, ic.* 42.]

Milium panicum. *Mill. dict. n.* 1.

M. semine luteo [& albo, item nigro. *Baub. pin.* 26. *theat.* 502. *Retz. obs.* 1. 11.

Milium. *Baub. hist. Dod. pempt.* 506. *Ger.* 73. 1. *emac.* 8. *Raii hist.* 1251. 1, 2.—& nigrum. *Ger.* 73. 2.

M. vulgare album. *Park. theat.* 1136. 1.

β. M. attenuatum. *Moench. meth.* 204. (excl. syn.)

Panicle loose flaccid, sheaths of the leaves rough-haired, glumes mucronate nerved.

50. Panicum antidotale. *Medicinal Panic-grass.*
Lin. spec. ed. Willd. 348. *Retz. obs.* 4. 17.

Panicle nodding, calyxes two-flowered polygamous acute, culm erect very much branched.

51. Panicum notatum. *Black-spotted Panic-grass.*
Lin. spec. ed. Willd. 348. *Retz. obs.* 4. 18.

Panicle spreading, axils marked, leaves lanceolate ciliate.

52. Panicum muricatum. *Muricated Panic-grass.*
Lin. spec. ed. Willd. 348. *Retz. obs.* 4. 18.

Panicle spreading, flowers solitary muricated, culm rooting ascending.

53. Panicum capillare. *Capillary Panic-grass.*
Lin. spec. 86. *syst.* 106. *Resch.* 1. 160. *Willd.* 349. *Retz. obs.* 3. 9. *Gron. virg.* 13.

Milium indicum panicula ſparſa erecta. *Tournef. inſt.* 515.

Panicle capillary erect ſpreading, peduncles ſtrict, calyxes acuminate even, ſheaths of the leaves very hirſute.

54. Panicum flexuoſum. *Flexuoſe Panic-graſs.*
Lin. ſpec. ed. Willd. 349. *Retz. obſ.* 3. 9.
β. totum glabrum. *Retz. obſ.* 4. 16.
Panicle capillary ſpreading, peduncles flexuoſe, calyxes ovate, beard of the joints reflex.

55. Panicum groſſarium.
Lin. ſpec. 86. *ſyſt.* 107. *Reich.* 1. 160. *Willd.* 349. *amoen.* 5. 392. *Thunb. jap.* 48.
P. repens. *Burm. ind.* 26. *t.* 11. *f.* 1?
Branches of the panicle ſimple, flowers in pairs with one of the pedicels very ſhort, the other the length of the flower.

56. Panicum maximum. *Large Panic-graſs,* or *Guinea-graſs.*
Lin. ſpec. ed. Willd. 349. *Jacqu. ic. rar.* 1. *t.* 13. *collect.* 1. 76. *Swartz deſcr.* 170. *Brown. jam.* 366. *n.* 2. (Holcus).
P. polygamum. *Swartz prodr.* 24. *Lin. ſpec. ed. Willd.* 353.
Panicle compound capillary ſpreading, branches racemed, knots of the joints and ſheaths hirſute at the baſe.

57. Panicum nemoroſum. *Wood Panic-graſs.*
Lin. ſpec. ed. Willd. 350. *Swartz prodr.* 22. *deſcr.* 150.
Panicle ſimple, branches diſtant erect, florets remote ſcattered ovate acuminate, culm decumbent jointed, ſheaths and neck hairy.

58. Panicum acuminatum. *Sharp leaved Panic-graſs.*
Lin. ſpec. ed. Willd. 350. *Swartz prodr.* 22. *deſcr.* 152.
Panicles ſimple ſhorter than the leaves, branches capillary diffuſed, ſpikelets remote obovate, culm decumbent jointed branched, leaves lanceolate-ſubulate, erect, ſheaths villoſe.

59. Panicum rigens. *Stiff-panicled Panic-graſs.*
Lin. ſpec. ed. Willd. 350. *Swartz prodr.* 23. *deſcr.* 154.
Panicle ſimple rigid ſpreading, culm branched decumbent, leaves horizontal rugged.

60. Panicum fuſcum. *Brown Panic-graſs.*
Lin. ſpec. ed. Willd. 350. *Swartz prodr.* 23. *deſcr.* 156.
Panicle ſimple, branches erect, florets directed one way in pairs, one on a ſhorter pedicel, culm erect ſubdivided, leaves broad-lanceolate.

61. Panicum laxum. *Looſe Panic graſs.*
Lin. ſpec. ed. Willd. 350. *Swartz prodr.* 23. *deſcr.* 157. *Sloan. jam.* 1. 114. (Milium).
Panicle ſimple nodding, branches capillary, ſpikelets approximating alternate preſſed cloſe, culms ſimple filiform flaccid, leaves linear-lanceolate.

62. Panicum latifolium. *Broad-leaved Panic-graſs.*
Lin. ſpec. 85. *Reich.* 1. 160. *Willd.* 350. *Mor. hiſt.* 3. 196. *ſ.* 8. *t.* 5. *f.* 4. *Laur. cochinch.* 47.
Panicle with racemes lateral ſimple, leaves ovate-lanceolate hairy at the neck.

63. Panicum flaveſcens. *Yellow Panic-graſs.*
Lin. ſpec. ed. Willd. 351. *Swartz prodr.* 23. *deſcr.* 158.
Panicle ſimple erect ſtiff, branches ſubfaſtigiate, the loweſt oppoſite, ſpikelets approximating directed one way, pedicels two-flowered.

64. Panicum diffuſum. *Diffuſed Panic-graſs.*
Lin. ſpec. ed. Willd. 351. *Swartz prodr.* 23. *deſcr.* 160. *Sloan. jam.* 1. 114. (Milium).
Panicle ſomewhat ſimple capillary ſpreading, ſpikelets diſtant, culm decumbent ſimple, leaves linear hairy at the neck.

65. Panicum oryzoides. *Rice-like Panic-graſs.*
Lin. ſpec. ed. Willd. 351. *Swartz prodr.* 23. *deſcr.* 162.
Panicle almoſt ſimple, branches erect, florets ſomewhat remote ovate acute, culm erect undivided, leaves broad-lanceolate rounded at the baſe, ſheaths even.

66. Panicum clandeſtinum. *Hidden Panic-graſs.*
Lin. ſpec. 86. *Reich.* 1. 161. *Willd.* 351.
Racemes hidden within the ſheaths of the leaves.

67. Panicum arboreſcens. *Tree Panic-graſs.*
Lin. ſpec. 87. *Reich.* 1. 161. *Willd.* 351. *fl. zeyl. n.* 43. *hort. cliff.* 27.
Panicled very much branched, leaves ovate-oblong acuminate.

68. Panicum curvatum. *Crooked-chaffed Panic-graſs.*
Lin. ſyſt. 107. *ed.* 12. 732. *Reich.* 161. *Willd.* 352.
Panicle racemed, glumes curved obtuſe nerved.

69. Panicum virgatum. *Long-panicled Panic-graſs.*
Lin. ſpec. 87. *ſyſt.* 107. *Reich.* 1. 161. *Willd.* 352. *Gron. virg.* 133.
Panicle rod-like, glumes acuminate even, outmoſt gaping.

70. Panicum patens. *Spreading Panic-graſs.*
Lin. ſpec. 86. *ſyſt.* 107. *Reich.* 1. 162. *Willd.* 352.
Panicle oblong flexuoſe capillary ſpreading, calyxes two-flowered, leaves linear-lanceolate, culm rooting.

71. Panicum trigonum. *Triangular-ſeeded Panic-graſs.*
Lin. ſpec ed. Willd. 352. *Retz. obſ.* 3. 9.
P. patens. *Burm. ind.* 26. *t.* 10. *f.* 2.
Panicle erect, peduncles two-flowered, calyxes obtuſe biſpid one-flowered, ſeeds three-cornered.

72. Panicum pallens. *Pale Panic-graſs.*
Lin. ſpec. ed. Willd. 352. *Swartz prodr.* 23. *deſcr.* 164.
Apluda Zeugites. *Aubl. guian.*
Panicle compound ovate, branches cluſtered erect, ſpikelets ovate ſubulate, culm ſubdivided jointed, leaves ovate-lanceolate, ſheaths ciliate on the neck and at the edge.

73. Panicum lanatum. *Woolly Panic-graſs.*
Lin. ſpec. ed. Willd. 353. *Swartz prodr.* 24. *deſcr.* 168.
Panicle compound erect ſmooth, ſpikelets ovate, culm branched, leaves ovate-lanceolate pubeſcent, ſheaths lanuginoſe-hirſute.

74. Panicum arundinaceum. *Reedy Panic-graſs.*
Lin. ſpec. ed. Willd. 353. *Swartz prodr.* 24. *deſcr.* 166.
Panicle compound ſpreading, branches and branchlets ſtiff capillary, ſpikelets roundiſh, culm ſubdivided jointed, leaves broad-lanceolate acuminate rigid.

75. Panicum glutinoſum. *Glutinous Panic-graſs.*
Lin. ſpec. ed. Willd. 353. *Swartz prodr.* 24. *deſcr.* 174. *Sloan. jam.* 1. 114. *t.* 71. *f.* 3. (Gramen miliaceum).
Panicle compound ſpreading, branches flexuoſe, ſpikelets pedicelled diſtant glutinous, culm erect ſimple, leaves broader.

76. Panicum radicans. *Rooting Panic-graſs.*
Lin. ſpec. ed. Willd. 354. *Retz. obſ.* 4. 18.
Panicled, culm branching rooting, the baſe of the leaves and the ſheaths longitudinally ciliate.

77. Panicum trichoides. *Hair-like Panic-graſs.*
Lin. ſpec. ed. Willd. 354. *Swartz prodr.* 24. *deſcr.* 176. *Sloan. jam.* 1. 86. 115. *t.* 72. *f.* 3. *Brown. jam.* 366. 1. (Holcus).
P. breviſolium. *Lin. ſpec.* 87. *ſyſt.* 107. *Pluk. phyt. t.* 189. *f.* 4.
Panicle very much branched ſpreading, branches and branchlets ſubdivided capillary, culm declined jointed, leaves ovate-lanceolate very ſmooth.

78. Panicum divaricatum. *Straddling Panic-graſs.*
Lin. ſyſt. 107. *Reich.* 1. 162. *Willd.* 354. *amoen.* 5. 392.
Panicles ſhort awnleſs, culm very much branched and extremely divaricating, pedicels two-flowered, one ſhorter.

79. Panicum hirſutum. *Shaggy Panic-graſs.*
Swartz deſcr. 173.
Panicle compound capillary, ſpreading, culms and ſheaths briſtly-hirſute, leaves lanceolate acuminate nerved ſtrict.

DESCRIPTIONS, &c.

1. In the ſpikes this reſembles *Panicum glaucum*, but they are only half the ſize, and the piſtils are blood-red. Culm rooting at bottom, from one to ſix feet in height, very much branched. Leaves hairy, at top almoſt oppoſite. Involucrets almoſt ſix times as long as their flowers, purple, with ciliate briſtles from the baſe to the middle with longiſh hairs.—Native of the Eaſt Indies. Biennial*.

* Linn. ſpec. & mant.

Loureiro

Loureiro describes the culm as annual, two feet high, upright, slender, round, jointed. Leaves subulate-linear, long, upright, those next the root in heaps, those on the stem scattered, short, somewhat hairy. Spike cylindrical, erect, simple. Involucres one-flowered, rough with many long bristles in bundles.—Native of Cochinchina.

2. This is an annual grass, native of the West Indies. It was introduced in 1780, by John Earl of Bute It flowers from june to september [a].

3. This in its general habit agrees exactly with *P. viride*; but in the size and form of the spike, and the parts composing it, differs very materially: the whole plant is generally one-third larger; the spike also is larger, and much less compact; it is evidently composed of little branches, which grow somewhat in whorls, whence its name: the bristles of the spike are considerably shorter than those of the *viride*, and differ from them particularly in being hooked, so that the spikes readily adhere to any thing, and where several of them grow near each other they are very apt, from this cause, to become entangled [b].

According to Linnæus, the spike is composed of longer racemes than in *P. viride*, three or four in number, directed one way downwards. Flowers green with purple pistils. Bristles one or two, rugged, to each flower, and longer than that. Pedicels on the falling of the flowers terminated by a truncate, concave, white cup. The rachis of the spike has three or four bifid angles. Culms even, two feet high. Leaves naked. The spike is from two inches and a half to four inches in length, and near half an inch broad [c].

Native of Europe, the Levant, and Japan. In England, Mr. Ray describes it as having been found between Putney and Rochampton, and beyond the neat-houses by the Thames side. Mr. Curtis found it sparingly in the gardener's ground in Battersea field, with the *viride*, and flowering at the same time. Scheuchzer remarks, that it is a troublesome weed in the gardens near Paris [d].

Thunberg describes two varieties, a larger and a smaller; the latter seeming to be distinct.

4. This is an annual grass, bearing a great resemblance to *P. glaucum*, but in reality different. Culm six feet high, branched; barren branches shorter. Leaves towards the base above with white hairs near an inch in length and spreading. Spike simple, a span long, the florets without order. Peduncles scarcely streaked at the tip. Involucrets pale red, one-flowered, many-bristled, longer than the flower. Glume with longitudinal streaks (but no transverse waved ones) green, distinct.—Native of the East Indies [e].

5. Bristles on the spike the length of the florets. Sheaths of the leaves hairy at the edges. When the spike is just come out the flowers appear disposed in rows. Seeds marked with waved streaks [f]. Peduncle very much grooved [g].

Root fibrous, annual. Culms a foot high, erect, leafy, having four knots, grooved at the top, even. Leaves broadish, flat, even, the upper one often longer than the spike. Instead of a ligule there are clustered, whitish, long hairs, especially from the lower sheaths. Sheaths striated, even. Spike as in the next species: the florets disposed in rows, three times as large, subsessile, solitary and in pairs, accompanied by bristles, finally becoming yellow, shorter than in *P. viride*. Calyx nerved, pubescent. Corolla less than the calyx. Third petal ovate, acute, flat, between the flatter valve of the calyx and the inner valve of the corolla; perhaps the rudiment of a second floret. Seed wrinkled with transverse waved streaks [h].

Native of the East Indies, America, and several parts of Europe, as Italy, the South of France, Germany, Switzerland. It flowers in june and july. Introduced in 1771, by Monf. Richard [i].

6. This is distinct enough from the preceding in having smooth seeds, not transversely waved and wrinkled. The glumes are nerved, as in the preceding [k].

[a] Hort. kew. [b] Curtis. [c] Withering. [d] Curt. lond. [e] Linn. suppl. [f] Linn. spec. [g] Linn. syst. [h] Lœrs. [i] Hort: kew. [k] Willdenow.

Scopoli says that the third glume is not always present. Lœrs, that it is always wanting.

Mr. Curtis remarks, that this species, to correspond with its trivial name, should be always green, but that its foliage is often red, and its spikes reddish brown; and that the *verticillatum* is the contrary; but the spike will always distinguish them. Between these two indeed there is a more sensible difference to the touch than between *Alopecurus pratensis* and *Phleum pratense*. The hairs in the spike of the *viride* are much longer than those of the *verticillatum*; and though the microscope discovers them to be prickly, yet being upright, they show no manifest roughness.

Lœrs thus describes it. Root annual. Culms from a foot to eighteen inches in height, oblique, leafy, having three knots, streaked at top, rugged. Leaves widish, the upper surface rugged. Instead of a ligule, a row of short hairs, running down. Sheaths somewhat compressed, even. Spike ovate-cylindrical, unequal in thickness, green, frequently tinged with violet on one side. Peduncles very short, having the florets in pairs (three or four) on scarcely conspicuous, knotted-truncate pedicels: each pair involucred with several whitish or violet bristles, four times as long as the florets. Calyx even: the smaller valve three-nerved, the opposite to this three times as large, embracing a third with its edge, convex, seven-nerved: the third flat, five-nerved. Seed nerved, shining. The third petal of the corolla is found in the preceding, in *Crus-galli* and *miliaceum*, but not in this.—According to Mr. Curtis, the calyx has three valves, two of which are opposite, equal, ovate, obtuse, ribbed; the third very minute and placed below the others: the corolla has two valves, which are ovate, hollow, shining and nearly equal.

He observes, that sparrows are remarkably fond of the seeds, and that the whole of this genus, when cultivated in a garden, require to be protected from them.

Native of Europe, as Germany, Carniola, England. With us not common, though the most common of the Panicums. In Battersea fields, near London; by Martha's chapel, near Guildford in Surry; and in the gravel-pits by Chippenham-park, Cambridgeshire, and the corn fields adjoining.

It flowers in july and august, and is an annual grass of no use in cultivation.

7. This has been confounded with the next species, from which it is distinct, in having the spike not interrupted at the base, smaller and ovate; in the height of the culm; in the shortness of the involucrets; and in having the rachis hirsute [a].

Willdenow says that he has frequently received the seeds of the variety under the names of *P. indicum* and *sibiricum*; that it approaches in habit to *P. verticillatum*, on account of the very short involucrets, sometimes scarcely visible without tearing the spikelets in pieces: but that it differs very much in the hairiness of the rachis, which in P. verticillatum is smooth.]

Mr. Miller says, it rises with a jointed reed-like stalk about three feet high, and about the size of the common Reed; with a leaf at each joint a foot and half long, and about an inch broad at the base where broadest, ending in an acute point, rough to the touch, embracing the stalk at the base, and turning downwards about half the length. The stalks are terminated by compact spikes, about the thickness of a man's finger at bottom, growing taper towards the top, eight or nine inches long, closely set with small roundish grain like that of Millet. It is annual, and perishes soon after the seeds are ripe. There are three varieties of it, with yellow, white and purple grains. It has been formerly cultivated for bread, in some of the northern countries, but is not so much esteemed as the Italian sort; since however it will ripen better in a cold climate than that, it is generally cultivated where a better sort of grain will not succeed: neither of them are reckoned to afford so good nourishment as Millet.

[Native of the southern part of Europe.

[a] Willdenow.

8. Culm annual, a foot and half high, round, thickiſh, upright, quite ſimple. Leaves alternate, lanceolate-linear, flat, ſtriated, reflexed. Spike ſingle, large, reclining, compoſed of glomerate ovate ſpikelets mixed with cloſe briſtles, longer than the floret. Seed yellow, ſubglobular [a].

This riſes with a reed-like ſtalk, near four feet high, and much thicker than that of the preceding; the leaves are alſo broader. The ſpikes are a foot long, and twice the thickneſs of thoſe of the former, but not ſo compact, being compoſed of ſeveral roundiſh cluſtered ſpikes; the grain is alſo larger. There are two or three varieties of this differing only in the colour of the grain. It is frequently cultivated in Italy, (whence its trivial name) and other warm countries. [It is a native of both Indies, and of Cochinchina, and was cultivated by Mr. Miller in 1739. It flowers in july and auguſt [b].

Willdenow ſays that he has a variety from the Eaſt Indies with the rachis hirſute.

9. Height from two to four feet. Culm ſimple, erect, round, ſmooth, leafy. Leaves half a foot long, lanceolate, flat, entire, pubeſcent; ſheaths embracing the culm, villoſe at the neck. Spike terminating, compound, a foot long, compoſed of panicle-faſcicled racemes half an inch in length. Rachis flexuoſe, briſtly. Spikelets two to four, cluſtered, pedicelled, unequal, mixed with briſtles, green. Briſtles ſeveral times as long as the florets, from one to three inſerted into the baſe, flexuoſe, appearing hiſpid when magnified, ſerrate. Pedicels very ſhort, ſmooth. Inner valve of the calyx larger, ovate; acute, keeled. Corolline valves of the hermaphrodite equal, whitiſh: outer ovate, acute, ſomewhat keeled, concave; the other flat, included. Filaments very minute. Corolline valves of the male barren: outer larger ovate acute, concave; inner minute flat. Seed ovate, incloſed in the corolline glumes of the hermaphrodite. The ſmaller florets mixed with the others are commonly empty. It approaches near to *P. italicum*, but in that the ſpikelets are glomerate, on hirſute pedicels [c].

10. Culms ſimple, decumbent, leafy, rooting, long. Leaves naked, nerved, with very fine lines between the nerves, ciliate at the baſe. Sheaths tubercled and hairy. Spike compoſed of alternate ſpikelets an inch long. Flowers directed one way, alternately in pairs on a flexuoſe three-cornered rachis, one larger, both awned, ſometimes but ſeldom on the lower part of the ſpike ſolitary; all green. Outer valve of the calyx wide, ciliate at the baſe, with an awn three times as long as the floret, flexuoſe: inner almoſt of the ſame length, narrower, both compreſſed: inmoſt entirely concealing the corolla, longer, roundiſh. Nectary, a linear ſcalelet hairy at the top, within the calyx. Valves of the corolla equal, hyaline, acute; the outer involving the inner, and the inner involving the ſtamens and piſtil.

Native of the Eaſt Indies, whence it was ſent by Koenig.

11. Culms erect, three feet high, leafy. Leaves linear, flat, even, rough at the edge, with the mouths of the ſheaths hairy. Spike compound, half a foot long. Spikelets an inch and half in length; flowers in pairs and ſolitary, rather large. Outer valves of the calyx flattiſh, ovate-lanceolate, ending in a long rough-haired awn, three-nerved: inner of the ſame form and ſize, but more convex, awnleſs: acceſſory valve ſhorter by half and lanceolate: all of them hiſpid eſpecially at the edge. Outer floret male, compoſed of one flat lanceolate hyaline petal: inner female generally longer than the valves of the calyx, two-petalled; the petals cartilaginous, one flat, the other convex, embracing at the edge. Germ roundiſh-ovate, compreſſed.

Native of the Eaſt Indies, in ponds. Found by Koenig [d].

Willdenow thinks that *P. hiſpidum* of Forſter, found in New Caledonia, may be the ſame with this. Is P. hiſpidulum of Retzius. γ. 18. different from this?

12. Culm annual, two feet high, ſuberect, manifold, jointed, leafy. Leaves ſubereſt. Spikes commonly alternate, but ſometimes conjugate. Spikelets oblong, diſtich, ſpreading. Glumes awned, hiſpid. All the florets hermaphrodite. Rachis generally four-cornered [e].

Though Loureiro deſcribes it under the name of *Crus Corvi*, he obſerves that it is intermediate between that and *Crus Galli*, and different from both.

Linneus remarks, that it reſembles the next ſpecies very much, but that it is leſs and more tender. The panicle more nodding with a three-cornered (not five-cornered) rachis. The flowers on the ſpike are directed one way, and not incumbent all round on the rachis.

Native of the Eaſt Indies, Cochinchina and Japan.—Introduced in 1781, by Monſ. Thouin. It flowers in july and auguſt [f].

13. Root annual. Culms ſeveral, from one to two feet in height, thick, at firſt procumbent or oblique, but finally almoſt upright. Flowering-branches leafy, naked at top, even. Internodes three or four, the lowers ones divaricating. Joints thickened, cylindrical, duſky. Leaves on the culm very wide, flat, even on both ſides, hiſpid at the edges. Inſtead of a ligule, a ſhort triangular membrane, adnate, duſky. Sheaths looſe, compreſſed a little, cloven, even; the lower ones acute, leafleſs. General rachis linear, flattiſh, rugged, with one angle underneath, ſcarcely projecting, two at the ſides ſharper, and one above, with a groove for the inſertion of the branches. Spikes alternate, ſeldom conjugate, moſtly directed one way, ſubdivided, the terminating one more ſimple. Partial rachis three-cornered, ſomewhat flexuoſe, ſubdivided, involucred at the baſe with whitiſh hairs in bundles. Florets cluſtered, directed one way, on very ſhort ſubdivided peduncles, with bundles of hairs at the baſe, more apparently in the variety. Calyx nerved, pubeſcent, rugged; two of the valves mucronate, and the third flat and awned. Awn terminating, rugged, ſtraight, ſhort in α, but ten times as long as the glume in β. The third petal of the corolla membranaceous, flat, acuminate, between the flat valve of the calyx and the inner valve of the corolla [g].

Mr. Curtis remarks, that the leaves in more humble plants are three or four inches long, and from two to three lines in breadth; in taller plants ſix inches or nearly a foot in length, four lines and ſometimes ſix or ſeven broad, tapering to a point, keeled, ſmooth, the edges very finely toothed, and about the mouth of the ſheath hairy. Spikes pale green, ſometimes varying to purple. Spikelets often twelve in number, thick, roundiſh, the lowermoſt an inch and half in length, longer and farther aſunder than any of the reſt. Seed rather large, ſhining, covered by the valves of the corolla, round on one ſide, and flat on the other. Theſe ſeeds being large and plentiful, this graſs is much ſought after by ſmall birds.

Native of Virginia, the Cape of Good Hope, and ſeveral parts of Europe, as Sweden, Germany, Switzerland, the South of France, England. Thomas Williſell found it in a garden between Deptford and Greenwich; with a ſmooth ſpike, in a lane near the Neat-houſe gardens; with an awned ſpike, by the rivulet ſide near Peterſfield, Hampſhire, by Mr. Goodyer. Mr. Hudſon deſcribes it as growing by Martha's Chapel near Guildford. Dr. Milne found it in a coppice near Purfleet: and Mr. Curtis obſerved it in Batterſea field.

He has figured it without awns, in which ſtate it moſt frequently occurs with us. Leers remarks, that the florets are ſcarcely awned in cultivated grounds, but that in wet places it is found with very long awns. Linneus ſays that the latter, with awns ten times as long as the glumes, differs manifeſtly from the common ſort, in which the awns are ſcarcely half as long again as the glumes.

[a] Loureiro. [b] Hort. kew. [c] Swartz. [d] Retzius. [e] Loureiro. [f] Hort. kew. [g] Leers.

14. Culms filiform, branched, leafy. Leaves two inches long, ſubcordate at the baſe, with the edges of the ſheaths ciliate. Lower ſpikes remote, the upper ones often in whorls, ſhort. Flowers directed one way, in pairs, really ſeſſile, one of them placed higher than the other. Rachis depreſſed, with apparent teeth for the florets, furniſhed with a briſtle or two on each ſide of the floret. Calyx ovate, acute, with a ſhort acceſſory valve.—Native of China, whence it was ſent by Bladh.

Retzius is of opinion that P. repens of Burmann, *ind.* 26. *t.* 11. *f.* 1. is not the *repens* of Linneus, nor the *greſſorium*, but this ſpecies.

15. Root annual. Culms a ſpan high, round, aſcending. Leaves even, often ferruginous-ſpotted, purple at the throat without a ligule. Spike ſimple, directed one way, with a round weak rachis. Spikelets alternate, very many, ſubſeſſile, directed one way, ovate or ſomewhat oblong without any bundles of hairs. Florets ſomewhat ſtreaked. Anthers purple. Piſtils white, turning purple [4].

Native of the Eaſt Indies. Cultivated in 1699, by the Dutcheſs of Beaufort. It flowers in july and auguſt [5].

16. This is a very beautiful ſmooth even graſs. Culm compreſſed, leafy. Leaves linear. Rachis flat on the outſide, within or on the ſide of the ſpikelets keeled, margined. Spikes alternate, ſeſſile, almoſt upright, decreaſing, twice as long as the interſtices. Flowers directed one way, alternate, ſeſſile, imbricate. Calyx ovate, acute, with a ſmall rounded acceſſory valve.

It differs from *P. brizoides*, which it reſembles very much, in having the two valves of the calyx of the ſame length with the corolla, the acceſſory valve only ſhort and retuſe: both have the appearance of a *Paſpalum* [6].

Native of the Eaſt Indies, Arabia, and Madagaſcar.

17. Culms decumbent at the baſe, compreſſed, with purple joints. Leaves at the joints of the culm firſt ſingle, but afterwards ſeveral within the ſame ſheath, linear, even. Sheaths compreſſed, ſwelling, with the mouth ciliate and having a purple circle. Spike compound. Spikelets as many as twelve, linear, ſhorter than the interſtices, erect and almoſt preſſed cloſe, an inch long. General rachis three-cornered; partial linear, repand, ſomewhat rough, with a lengthened dagger-point. Flowers in two (not three) rows, compreſſed, awnleſs. Calycine valves two outer minute, retuſe, like ſcales; the third flat, the ſame ſize with the corolla, broad-ovate, acute, three-nerved. Corolla cartilaginous, with the valves flat and very ſmooth, one margin embracing. Stigmas pale roſe-colour. Nectary, two retuſe ſcalelets ſubvilloſe at the edge.—Native of the Eaſt Indies [7].

Swartz deſcribes a graſs of Jamaica under the ſame name, but it may be doubted whether it is the ſame ſpecies.—Culm from one to three feet high, ſimple, round, even. Leaves broadiſh, not long, acute, erect, rugged at the edge, ſtriated, ſheathing at the baſe; the neck beardleſs. Rachis terminating, almoſt a foot long, ſimple, linear. Spikes five or ſix, alternate, ſeſſile, preſſed to the rachis, directed one way: florets ſubſeſſile, approximating, in two rows on the ſame ſide, ovate, whitiſh. Two valves of the calyx equal, ovate, blunt, awnleſs; the third very ſmall, roundiſh. Valves of the corolla ſmaller, oblong. Stigmas purple. Seed faſtened to the corolla, roundiſh.

18. This is an upright graſs from two inches to half a foot in height. Root fibrous, the fibres undivided. Culms ſeveral, erect, cloathed with ſmooth leaves to the very loweſt ſpike. Rachis elongated. Spikelets from three to ſeven, ſhort, commonly ſix-flowered, erect, ſeſſile, preſſed cloſe, three quarters of an inch diſtant from each other. Flowers globular, alternate, directed one way, yellow, with green nerves. All the glumes of the calyx violet-coloured at the tip. It is very nearly allied to *P. brizoides*, which however is larger, green, and has longer leaves, with ſheaths relatively narrower. The ſpikelets have as far as thirteen ovate white unſpotted florets.——Native of Ceylon, whence it was ſent by Koenig.

19. Culm ten feet high, very finely ſtriated, aſcending. Leaves at the baſe of the culm diſtichally alternate, three inches long, on the middle of the culm one; all linear, blunt. Spike terminating, linear, three inches long, as it were halved. Rachis dilated, membranaceous, jointed, at the joints alternately deeply gaſhed, excavated alternately in front for the ſpikelets. Spikelets five-flowered, glued as it were in the hollow of the rachis, ſeſſile, with the partial rachis flexuoſe. Flowers awl-ſhaped, ſeſſile, ſtriated, flat in front, gibbous behind. Calyx three-valved, one-flowered: outer valve cartilaginous, flat, with the ſides bent at a right angle, lanceolate, ſtreaked: inner equal in length, thinner, boat-form gibbous, rounded and ſtriated at the back, ciliate-bearded at the tip, involving the edges of the outer valve: acceſſory valve ſhort, truncated, at the baſe of the outer valve. Corolla equal in length to the calyx, but narrower.—This is the *P. dimidiatum* of Linneus, very different from that graſs, which the younger Linneus made a ſpecies of *Rottbollia*.

Native of the Eaſt Indies, where it was found by Koenig.

20. This is very different from *P. birtellum* of Linneus. Culm decumbent, branched, villoſe and rooting at the baſe. Leaves lanceolate, with hairs thinly ſcattered over them; the ſheaths villoſe at the edge. Spikelets four or three. Rachis cloathed with long hairs eſpecially under the pedicels. Florets alternate, commonly abortive. The two outer calycine glumes equal terminated by a long awn: the third longer, acute, ſometimes awned; all villoſe. Corolla ſnow-white, very ſmooth.

Native of the Eaſt Indies, whence it was ſent by Koenig [8]: alſo of Italy.

21. Culm creeping, aſcending, three inches to a foot. The ſmaller leaves waved, the larger ſtiff. Spike compound. Rachis hirſute. Spikelets directed one way. Three valves of the calyx almoſt equal; the fourth, which is inmoſt, minute, membranaceous, awnleſs. The awns of the others long, (five times as long as the valve in the outmoſt) ferruginous-red, glutinous;—according to Linneus, filiform, blunt, finally hooked. Valves of the corolla awnleſs. Anthers whitiſh. Stigmas feathered, long, blood-red.—Native of the Weſt Indies [9].

This Graſs is cultivated, and thrives very luxuriantly, in all the low and marſhy lands of Jamaica, where it is almoſt univerſally uſed as fodder for all their ſtabled cattle: it is planted near the towns with great care, and found to be one of the moſt beneficial productions of the iſland. Its general growth is from two to four feet [10].

22. Culm three or four feet high, branched, compreſſed, even: joints villoſe, large. Leaves lanceolate, acute, even, rugged at the edge. Sheaths approximating, compreſſed, villoſe at the baſe. Peduncles from the ſheathing internodes, compreſſed, ſhort. Spikes rigid. Rachis linear, compreſſed, hairy: hairs long, thin, ſpreading. Spikelets pedicelled, alternate, ſharpiſh, ſomewhat compreſſed, ſtriated. Outer calycine valve minute; inner ovate, nerved, concave. Valves of the corolla ovate, very tender. Anthers purpliſh. Stigmas whitiſh. Seed oblong, compreſſed a little, ſmall. Glume of the neuter corolla two-valved: outer valve larger, concave, inner very minute, flat. Filaments none.

Native of Jamaica and other iſlands in the Weſt Indies, in woody mountainous paſtures.

23. Culm from two to three feet high, decumbent at the baſe, aſcending, ſubdivided at bottom, jointed, round, thick, pubeſcent. Leaves long, broad-lanceolate, rounded at the baſe, flat, villoſe, ſoft: ſheaths cloſely girting the culm, ſtriated, pubeſcent: joint thickiſh, villoſe. Spikes erect: ſpikelets two or three

[4] Linn. ſpec. [5] Hort. kew. [6] Retzius. [7] Idem. [8] Retzius. [9] Swartz. [10] Browne.

cluſtered,

cluſtered, on ſhort pedicels, turned towards the lower ſide, largiſh, oblong, brown. Outer valve of the calyx minute: inner ovate, blunt, ſtriated, pubeſcent. Valves of the corolla in the hermaphrodite florets nearly equal, ovate; one flatter. Anthers very dark purple. Stigmas the ſame and villoſe. Seed oblong, ſhining. Valves of the neuter corolla unequal: outer ovate, ſtriated, brown; inner flat, whitiſh, minute. Filaments none. It is known immediately from the other ſpecies by its ſoftneſs. The culms being thick and ſucculent, it is very grateful to cattle [a].

Swartz ſays that it is a native of Surinam, and is commonly called *Dutch-graſs* in Jamaica, where it grows in moiſtiſh fertile paſtures. He refers to a name in Browne, p. 133. which I do not find. Perhaps Dutch-graſs is miſtaken for Scotch-graſs; but why it has either of theſe names we are not told. See n. 21.

24. Height two or three feet. Culm jointed, erect, round, leafy, ſmooth. Leaves a foot long, rounded at the baſe, broad-lanceolate, acute, ſtreaked longitudinally, rough at the edge: ſheaths long, ſtriated, ſmooth, ſubvilloſe at the edge and neck. Spikes terminating, half a foot long, ſubverticillate. Rachis ſubflexuoſe, ſtiff, rough. Florets roundiſh or ovate, ſmall, brown: pedicels ſubbiflorous, the upper ones one-flowered, capillary, ſomewhat hirſute. Outer valve of the calyx one third of the ſize of the other: inner ovate, concave, marked with longitudinal lines, appearing netted when magnified, ferruginous-brown. Valves of the hermaphrodite corolla ovate, whitiſh; one ſmaller, included. Stigmas whitiſh. Male corolla empty: outer valve like the inner valve of the calyx; inner ſmaller, whitiſh, ovate.—Native of Jamaica in low graſſy places.

25. Roots long, filiform, ſtiff, perennial. Culm a foot high, very much branched, jointed, proſtrate, compreſſed a little, grooved, ſtiff, ſmooth. Branches from the ſheaths of the leaves, in bundles. Leaves rounded at the baſe, lanceolate, acuminate, two or three inches long, flat, entire, ſometimes waved at the edge, ſtriated a little, ſmooth: ſheaths longer than the leaves, wide, longitudinally open, ſtriated, pubeſcent, very much contracted at the edge and neck, ſubvilloſe: joints villoſe. Spikes on every ſide terminating the branches, commonly ſhorter than the leaves, an inch long, frequently concealed in the ſheaths. Spikelets pedicelled, diſtinct, ovate, acute, green and brown. Inner valve of the calyx ovate, acute, concave: outer three times leſs. Valves of the corolla ovate, obtuſe, whitiſh. Anthers whitiſh. Seed ovate incloſed in the glumes. Outer valve of the corolla in the male (or neuter) flower very like the inner valve of the calyx: inner ſmall, ovate, flat, more tender, whitiſh: theſe florets have no filaments.

Native of Carthagena in South America in graſſy places [b].

26. It is thus deſcribed by Linnæus, in his Mantiſſa, under the name of *P. indicum*. Culms filiform, proſtrate, very much branched, rooting. Leaves lanceolate, even, with the ſheaths ſhorter than half the internodes. Raceme terminating, peduncled, ſubſpiked, ſmall, ſhorter than the leaf, often eight-flowered, without hairs. Flowers alternate, ſometimes two in the ſame tooth of the lower raceme, ovate. Piſtils feathered, the ſize of the whole flower.

Retzius deſcribes it under the ſame name, as a filiform graſs, half a foot in height. Culm aſcending, naked above. Spikes ſcarcely half an inch in length, without any involucrets. Inner valves of the calyx ſlightly hiſpid, almoſt equal, boat-ſhaped, acute: acceſſory valve blunt, minute.—He can ſcarcely think it to be the *P. conglomeratum*, which ſeems to him to be the *Aira indica* of the Species: for in *P. indicum* the ſpike is not directed one way, nor are the florets blunt.

Native of the Eaſt Indies, by towns and in the ſtreets: ſent by Koenig.

27. This graſs is three feet high and ſmooth. Knots of the culm black. Sheaths ſmooth. Leaves long, linear, ſtriated, ſmooth. Spike a foot long, narrow. Flowers cluſtered. Peduncles one-flowered. Calyx two-flowered, two of the valves equal, acute, nerved, the acceſſory one leſs, obovate, obtuſe, membranaceous. It differs from all the ſpecies in the inflorescence.—Native of the Eaſt Indies, in ſtagnant waters [c].

28. Root annual. Culms leafy, even, with three joints, at the two lower procumbent, the upper oblique, very long. Flowering-branches from the joints. Leaves broadiſh, ſhort, ſublanceolate, even. Ligule crenulate. Sheaths ſomewhat compreſſed, blood-red, even, dotted: dots eminent, ſolitary and in cluſters, briſtle-bearing, ſcarcely viſible. Spikes three, four or five, linear, alternate, on very ſhort peduncles, inſerted into the culm, which between them is linear-three-cornered, flexuoſe, and by means of an axillary callus piliferous: when burſting from the ſheaths erect, parallel; when flowering horizontal, except the end one, which is erect. Rachis linear, ſubflexuoſe, flat, rugged, with a prominent nerve above, for the inſertion of the florets: which on the convex ſide are preſſed cloſe to the rachis, two together, or often three in each tooth: the loweſt peduncle ſhorter than the floret, the ſecond of the ſame length, the third, when there is a third floret, longer than it. Calyx awnleſs, pubeſcent: the leaſt valve triangular, three-nerved, but it is ſcarcely viſible with a magnifier, and is very frequently quite wanting: the ſecond, oppoſite to this, is blunt, embracing the third with its margin, ſubconvex, five-nerved: the third is flat, three-nerved, acute, ſometimes violet-coloured. Corolla leſs than the calyx. Stigmas purple. Seed rufous, ſhining [d].

The root forms ſmall tufts. Culms decumbent, curved at the joints below, and not unfrequently creeping, nine inches or a foot high, round, ſmooth, branching from the lower joints. Leaves acute, one or two inches long, two lines or a little more in width, waved chiefly at the edge, ſmooth as are alſo the ſheaths, glaucous or reddiſh green. Ligule blunt, more than half a line in breadth. Spikes three or four to ſeven in number, alternately and in a bundle from the top of the culm, from two to three inches long, and near one line in width. Scape (or rachis) compreſſed, waved all along at the edge. Spikelets ovate, acuminate or a little blunt, imbricate, ſmooth, compreſſed, purple above, green underneath, near a line in length and half a line in width, placed by pairs near each other, and covering the upper ſide of the rachis: one ſpikelet is ſeſſile, the other has a peduncle from half a line to a line in length. Calycine glumes of the ſame length and breadth with thoſe of the corolla, ovate, parting horizontally. Valves of the corolla opening alſo in width; the outer convex and cloſely embracing the inner one. Anthers purple. Styles white. Stigmas red and feathered. The ſeed falls with the corolla [e].

Pollich obſerved the larger variety figured by Buxbaum. The ſheaths and leaves of this are hirſute; the ſpikes and ſpikelets larger and greener.

Culms ſeveral, a ſpan or a foot in height, reddiſh, ſometimes branched, bending upwards, crooked, very ſlender and weak, generally four-jointed. Leaves from an inch to two inches in length, from two lines to two lines and a half in breadth, pointed, often waved on one ſide, having a few hairs on both ſides, the edges when magnified appearing very finely ſerrate: ſheath ſtriated, very hairy, the hairs proceeding from little prominent points. Spikes three, four or five, in gardens more, from an inch and half to four inches in length, filiform, all proceeding from the ſame point, or growing alternately, leaving a ſmall ſpace between them, dark purple or purple and green mixed. Spikelets growing one way, in pairs, preſſed to the rachis, pedicelled, ovate-lanceolate, pointed, purpliſh or green. Calyx three-valved, permanent; the loweſt valve very minute and ſhort, ſcarcely perceptible by the naked eye: the other two oppoſite, unequal, pointed, ribbed, rugged on the edges, the upper one the length of the corolla, which it enfolds with its margin; the lower one half the length of the upper. Valves of the corolla equal and ſmooth, the one receiving the other,

[a] Swartz defcr. [b] Idem. [c] Willdenow. [d] Loerr. [e] Pollich.

having

having a ſmall membrane at their baſe. Filaments very ſlender, a little longer than the corolla. Anthers ſmall, ſhort, purpliſh, forked at each end. Germ oblong. Styles filiform, the length of the ſtamens. Stigmas purple. Seed very ſmall, incloſed by the glumes of the calyx, as well as of the corolla [1].

I have given three deſcriptions diſtinct of this graſs, from three of our moſt accurate authors, two foreign and one domeſtic, becauſe it is ſuſpected that our *P. ſanguinale* is not the ſame with that of Linneus. Mr. Curtis is induced to conſider our plant as the *ſanguinale* of Linneus, rather by the figures and deſcriptions quoted by him, than by his ſpecific diſtinction, which does not well accord with our plant. The dotted ſheaths are not mentioned by Haller, Scheuchzer or Scopoli.—The knots within the baſe of the ſpikes, ſays Dr. Withering, and the dots on the leaf-ſheath, do not appear in Mr. Curtis's figure; but the latter are mentioned by Leers, and the former are expreſſed in his figure; ſo that there yet remains a doubt whether our plant may not be the *P. filiforme* figured by Jacquin, obſ. 3. t. 70.

It is obſerved by Miſs Jennings of this graſs, that all the ſtems which lie near the ground take root, and by this means, though an annual and ſhort-lived plant, it increaſes and ſpreads very wide [a].

Heiſter, Haller, Scopoli and Adanſon arrange this and ſome other ſpecies of *Panicum* under a diſtinct genus, which they call *Digitaria*, from the diſpoſition of the ſpikes, like the fingers of the hand ſpread out. But theſe having a three-leaved calyx, it ſeems better to continue them, with Linneus, Schreber, &c. under the genus *Panicum*.

This ſpecies is very univerſal, being found not only in Europe, but in Aſia and America; and the Society iſles in the Southern ocean: nevertheleſs it is not common in England. It grows at Elden in Suffolk, Witchingham in Norfolk, near Martha's chapel by Guildford, Wandſworth field, and in the gardener's grounds near Batterſea: flowering from july to ſeptember.

The name of *ſanguinale* is not taken from its colour, but from an idle trick which the boys in Germany have of pricking one another's noſtrils with the ſpikelets of this graſs, till they draw blood [b].

29. Culm creeping at the baſe, and above that upright, nine inches or a foot in height, glaucous, ſmooth, frequently branched from the lower joints. Leaves keeled, acuminate, ſtiffiſh, from one to four inches in length, one or two lines in breadth, hirſute on both ſides, ſomewhat rugged, glaucous. Ligule very ſhort, hairy. Sheath ſmooth with a yellow ſpot on each ſide at the inſertion of the leaf. Joints purple, ſmooth, ſometimes eight or nine. Spikes linear, four, five, or ſix, directed one way, three-ſided, ſlightly hairy at the baſe, proceeding in a bundle from the top of the the culm, at firſt purple, but by age acquiring the colour of chaff. Scape (or rachis) three-ſided and ſmooth: at each toothlet one ſeſſile ſpikelet, erect, ovate, acuminate, compreſſed, a line in length, and half a line in breadth, green and purple, ſmooth: the toothlets are about half a line from each other. The calyx embraces the corolla on its narrower ſide, and opens perpendicularly: the glumes are lanceolate, ſpread open above, and terminate in a very ſharp dagger-point; they are equal in length to the corolla, or one is a little ſhorter. The valves of the corolla ſeparate alſo perpendicularly; the larger of them is ovate, acuminate, keeled; the ſmaller narrow and acute, but nearly of the ſame length with the outer. Anthers purple. Styles and ſtigmas violet-coloured. The ſpikes curved archwiſe, are firſt erect, then vertical, and finally horizontal. Sometimes in the bundle of ſpikes a ſhort branch ſprings forth, on the top of which is another bundle of ſpikes few in number. The ſpikelets at firſt are preſſed cloſe to the ſcape; but in the time of flowering they recede in a vertical direction from it; and afterwards approximate to it again [c].

Root creeping widely through the looſe ſand, with ſtrong fibres at the knots. Culm rarely exceeding ſix inches in height. Leaf-ſheath parting from the culm when old, glaucous, hairy and pubeſcent throughout. Spikes four, diverging, dark purple changing to a cheſnut colour, near two inches long, not more hairy than the other parts of the plant. Florets all on one ſide of the ſpike-ſtalk, awnleſs [d].

There is ſome little doubt whether ours be the exact plant characteriſed by Linneus as the *P. Dactylon*. Cluſius's figure has long awns to the florets: but perhaps in the milder climates of Spain and Italy the plant may be awned, though not ſo with us. In the figures of Bauhin, Moriſon, Monti and Scheuchzer there are no awns, and therefore they agree better with our plant. The hairs mentioned in the ſpecific character, on the inſide the baſe of the ſpikes, are not ſo evident in our ſpecimens as to juſtify ſuch an application; for though our plants have ſome hairineſs there, they have it at leaſt as much on the outſide, and ſtill more in other parts [e].

Native of Europe, the Levant, and the Cape of Good Hope. Firſt found in England by Mr. Newton, between Penzance and Market-jeu in Cornwall; and lately again in the ſame place by Mr. Stackhouſe. It flowers in july and auguſt till late in the autumn.

30. Culms filiform, a foot high, aſcending, leafy, weak, putting out roots at the joints. Leaves ſmear-lanceolate, ſhort, naked. Rachis depreſſed. Florets directed one way, ovate, acute, generally in pairs and pedicelled unequally. Calyx ſtreaked with green, convex on one ſide, flat on the other, with a ſhort whitiſh acceſſory valve. Corolla of the ſame ſize and form with the calyx, not at all wrinkled. Stigmas blackiſh brown. Seed white, margined on the flatter ſide.

Native of the Eaſt Indies, in ſhady graſs ſpots. Sent by Koenig [f].

31. Leaves lanceolate. Culms almoſt leafleſs, a foot high, filiform, at top naked, upright. Spike filiform, thin, with a flexuoſe rachis, alternately on each ſide at the teeth. Florets two, one ſeſſile, the other pedicelled. Spikes ſlender, at firſt ſo cloſe as to appear one, although they are alternate.

Native of North America, where it was found by Kalm [g]. Alſo of Japan and the Cape of Good Hope, according to Thunberg; of the Society and Eaſter iſlands. Introduced in 1781, by Monſ. Thouin. It is an annual graſs; flowering from july to ſeptember [h].

32. It reſembles the preceding very much, but differs in having the culm and leaves hairy, the ſpikes a little thicker, but eſpecially in having the inner valve ovate, twice as large, and three-nerved. The acceſſory valve is extremely minute [i].

It is an annual graſs as well as the former. Culms from one to two feet high, covered with ſheaths that have long hairs cloſely ſet. Spikes long, linear, four or five. Rachis flat, membranaceous, flexuoſe. On one ſide of this the florets are fixed alternately in pairs, the pedicel of one being three times as long as that of the other [k].—Its native place is not aſcertained, notwithſtanding its trivial name.

33. Height a foot and half, branched at the baſe. Outer glume of the calyx ſmaller, lanceolate; inner larger, the length of the corolla, hairy at both edges: the acceſſory valve is a ſcalelet ſcarcely obſervable, and often wanting. Corolla quite ſmooth. Flowers lanceolate, acute, one of them ſeſſile. It varies with the leaves more or leſs hairy; and with the ſheaths and joints hairy and naked. This reſembles *P. filiforme* ſo much, that they may eaſily be confounded: and perhaps, *ſanguinale, filiforme, egyptiacum* and *ciliare* are nothing more than varieties.—In *egyptiacum* the acceſſory valve is a ſmall toothlet, and the outer valve of the calyx ſhort, ovate-lanceolate, and naked. In *filiforme* the acceſſory valve is ſcarcely larger, but the outer valve of the calyx is longer and lanceolate. In *ſanguinale* the acceſſory valve is as in *egyptiacum*, but the outer glume of the calyx is more ovate.

[1] Curtis. [a] Withering. [b] Curtis. [c] Pollich. [d] Stackhouſe in Withering. [e] Withering. [f] Retzius. [g] Linn. ſpec. [h] Hort. kew. [i] Retzius. [k] Willdenow.

This species was brought from Java and China by Wennerberg [a].

34. Culms prostrate, even, branched. Spikelets linear, straight, narrow. Flowers alternate below. Outer scale of the calyx shorter, spreading, adhering to the rachis [b].—Native of both Indies.

Retzius says he had it from Koenig, with the culms branching very much and leafy to the very spikes, with tender leaves: and from Thunberg, gathered at the Cape of Good Hope, with the culms creeping, less leafy at top, the leaves far more rigid, and the sheaths equitant in two rows. He doubts whether they are the same or different.

35. Root annual. Culms a foot high, upright or ascending, even. Leaves lanceolate, even, ciliate. Sheaths having hairs thinly scattered over them, inclosing the culms below. Peduncle long, terminated by four digitate racemes from one point, pointing one way, simple, loose, almost upright. Flowers alternate. The larger valve of the calyx ovate, three-nerved, acute, flattish, softly and denfely ciliate: the other valve lanceolate, shorter, naked. The outer petal has a ftraight terminating awn; the inner is narrower. The flower falls entire with the feed, and on account of the hairs in fome meafure refembles a bug [c].

Linnæus, not obferving the glume which is received by the margin of that which is awned, but taking the fmaller glume of the calyx for a glume of the corolla, made this grafs a *Millium*. Koenig, who found it in the Eaft Indies, firft difcovered it to be a *Panicum* [d].

36. Culms fomewhat branched, a foot high, narrower. Leaves fhort, rugged at the edge. Spikes two together, (according to Retzius commonly three, and fometimes four) terminating, nearly equal. Flowers feffile in a double longitudinal row along the rachis, awnlefs, ovate, even. Anthers yellow. Piftils feathered, purple.

It has the appearance of *Paspalum diftichum*, but the leaves are lanceolate and flat, not briftle-fhaped and involuted. Flowers fharpifh but not mucronate. The calyx has a fhort acceffory valve, whereas there is none in *Paspalum*. Flower ovate, convex, not compreffed. Peduncle pubefcent at top, not even [e].

Native of the Eaft Indies, where it was found by Koenig.

37. Culms proftrate, rooting, branched, leafy. Leaves fhort, clufered, tomentofe, as are alfo the fheaths. Peduncle elongated, erect, naked, terminated by two fpikes, diverging horizontally, directed one way, fquarrofe. Rachis membranaceous, dilated, flexuofe, jointed; at each joint a bundle of two or three flowers, fenced with involucres or difform cartilaginous bractes. One valve of the calyx very large, ovate, acuminate, flexuofe, the other fmaller, lanceolate; both hard and cartilaginous like the bractes: the acceffory valve fmall, acute, under the larger. Corolla lanceolate, the fize of the fmaller calycine glume. A bundle of barren flowers terminates the fpike. The appearance and ftructure are fo fingular, that it feems to conftitute a diftinct genus. It has fomewhat the appearance of a *Cenchrus* [f]. Linnæus placed it in that genus, and the defcription, from the *mantiffa*, has been already given under *Cenchrus muricatus*.

Willdenow remarks, that the fpikes are ufually in pairs, but that there is only one in Linnæus's own fpecimen.

Native of the Eaft Indies. Annual. Frequent in the fands of Malabar, during the rainy feafon.

38. This approaches neareft to *P. ftagninum*, but is very different. The culms and leaves are the fame as in that. Spikes compound, half a foot long, in clufters. Spikelets fcarcely an inch in length, almoft preffed to the rachis, binate, ternate or folitary. Outer valve of the calyx terminating in a naked awn four times as long as the flower: inner fomewhat longer terminated by a dagger-point or fhort awn; both hifpid efpecially at the edge: the acceffory valve fhort from a wide bafe furrounding the pedicel ending in a point, naked. Corolla as in *ftagninum*, but acuminate and hermaphrodite. Befides between the corolla and that valve of the calyx which has the longer awn, there is a hyaline petal, as in *P. ftagninum*; but in this there is no rudiment of ftamens or piftil.

Native of the Eaft Indies; fent by Koenig [g].

39. Culm creeping, leafy, rifing, filiform, tender, fimple. Leaves lanceolate, wider than in the reft, fhorter. Spikelets four or five, alternate, remote, preffed to the rachis, growing on one fide. Valves of the calyx lanceolate, flightly keeled, mucronate, with a ftraight awn, double the length of the florets, except the innoft, which has the awn fhorter.

Native of Ceylon [h]; and the Society iffes in the Southern ocean, according to Forfter.

40. This refembles the preceding very much. Culm upright, ftiff, fix feet high. Leaves long. Spike curved inwards. Rachis three-fided. Spikelets twelve or more, ovate-oblong, remote, alternate, feldom oppofite, on every fide of the rachis. Calyx fwelling a little, even, nerved; outer valve fhorter, ovate, acute; middle one with an awn; inner with a dagger-point fcarcely to be called an awn.—It is an annual grafs, native of Malabar [i].

41. In ftature this grafs emulates a fmall tree, fimple below and fafcicled above.—Native of Virginia [k].

42. Culms a foot high, erect, branched, even: with the internodes thickifh at the bafe and knee-jointed. Leaves with even fheaths, ftriated, ciliate at the edge and throat. Panicle with fimple, three-fided branches, channelled on one fide; at each tooth two or three flowers, with a hair or two on the pedicel. Outer valve of the calyx fhort, membranaceous, perfoliate; the others ovate.—Native of the Indies [l].

43. Native of the Cape of Good Hope. Found there by Thunberg.

44. Culms two feet high, very much branched, even, with the fheaths of the leaves hairy, and at length rugged. Panicle fpreading very wide, looſifh with filiform branches. Glumes one-flowered, awnlefs, ovate, green and purple, eight-grooved. Anthers faffron-coloured and piftils deep violet, by which it is readily diftinguifhed from *P. capillare* and others. Leaves even, linear, loofe, the margin towards the bafe toothletted with calluſes, fometimes furnifhed with a hair and fometimes without it. The outer valve of the calyx fhorter, wide, embracing.—It is an annual grafs, found by Forſkahl near Cairo [m].

Jacquin defcribes the root as perennial, compofed of thick long whitifh fibres. Culms annual, feveral, aggregate, thickening at the bafe into a fort of bulb and there connected and rooting, two feet high, erect, round, fmooth, not branched, as Linneus fays they are, but quite fimple without the leaft branchlet, only connate immediately above the root. Sheaths long, extending to the next knot above, hairy and rough, except the upper ones, which are often quite fmooth. Leaves enfiform-linear, about ten inches in length, four lines in width, acuminate, even, fmooth, fometimes thinly haired below, loofe, prominent underneath into a fharp midrib, fometimes flat, fometimes converging, cartilaginous-toothed at the edges, only to be difcerned by the magnifier. Panicle fpreading very much, filiform, branched, wide. Flowers fcattered, folitary, on capillary pedicels, which are commonly preffed fo clofe to the branchlets of the panicle, as not to be difcerned, fo that the flowers appear to be feffile. Calycine glumes one-flowered: the two inner valves awnlefs, ovate, blunt, eight-grooved, pale green with feven purple ſtreaks; the third outer valve fmall, acute, pale, not grooved. Corolla whitifh, pellucid, obtufe, nearly the fize of the calyx; the valves fubovate: one concave and marked with lines, the other flatter. Filaments white, purple at the tip. Anthers twin, oblong, yellow. Stigmas feathered, purple.

The feeds were fent from St. Domingo. It was introduced here as a native of Egypt in 1771, by Monſ. Richard, and flowers in July and auguſt [n].

[a] Retzius. [b] Linn. ſpec. [c] Linn. mant. [d] Retzius. [e] Linn. mant. [f] Retzius.

[g] Linn. [h] Linn. ſuppl. [i] Linn. ſpec. [k] Linn. mant. [l] Idem. [m] Hort. kew.

45. This is allied to the preceding. Culms creeping, a foot high, aſcending. Lower leaves wider, covering the ſtem all over with their ſheaths, ſpreading ſo much that they are almoſt divaricate and reflex, mucronate; the ſheaths ſubpubeſcent: the upper leaves are narrower, longer, erect. The panicle conſiſts of three or four erect racemes, ſcarcely branched, on which the flowers are alternate, ſomewhat remote, ovate. The outer calycine valve is very ſhort, and blunt.

It is an annual graſs, cultivated in the Eaſt Indies[a]. It was introduced in 1777, by Patrick Ruſſel, M. D. and flowers from July to September[b].

46. Culms upright, quite ſimple, leafy. Leaves ſpreading, with the ſheaths tomentoſe at the edge. Branches of the panicle few, naked, ſtiff, ſtraight half way, but the flowering part flexuoſe. Flowers for the moſt part in pairs, one of them pedicelled. The acceſſory valve of the calyx very ſhort and truncate. Corollas the length of the calyx, one hermaphrodite, the other male. Seed ovate, flattiſh. The whole graſs is whitiſh, and is taller than the other Panics.

Very common in Malabar, on the borders of ponds: found by Koenig.

47. Culms two feet high and more, ſlender, four-cornered-compreſſed, branching. Leaves linear, from four to ſix inches long, narrow, naked. Branches of the panicle capillary, remote, ſolitary, about eight in number. Florets alſo remote, moſt of them ſolitary, ſeſſile and pedicelled; but here and there in pairs, and then one is ſeſſile, and the other on a long pedicel; they are ovate and whitiſh. Pedicels three-ſided. Valves of the calyx almoſt equal, whitiſh ſtreaked with green; the acceſſory valve ovate. Seed white, ovate, flattiſh.—Koenig ſent it from Tranquebar.

48. Culm branched, creeping far and wide, putting out long and very ſimple fibres at the joints, thence riſing ſtraight, pubeſcent above the leaves. Leaves lanceolate, naked, ſhort. Sheaths ciliate, gaping between the joints. Panicle ſtiff and ſtraight, with few, almoſt upright branches, that are quite ſimple. Florets commonly in pairs, ſeldom in threes or ſolitary, ſeſſile. Involucres briſtle-ſhaped, varying in number, white. Outer valve of the calyx lanceolate, almoſt the length of the flower, terminated by a ſtraight awn three times its length; the ſecond ovate, half the length of the flower, with a very ſhort terminating awn; the third embracing the corolla, larger, wider, awnleſs: all green and ſtreaked. Corolla lanceolate, white, with equal valves.—Wennerberg brought it from China[c].]

49. Common Millet riſes with a reed-like channelled ſtalk, from three to four feet high: at every joint there is one reed-like leaf, joined on the top of the ſheath, which embraces and covers that joint of the ſtalk below the leaf, and is cloathed with ſoft hairs; the leaf has none, but has ſeveral ſmall longitudinal furrows running parallel to the midrib. The ſtalk is terminated by a large looſe panicle, hanging on one ſide.

[Loureiro deſcribes the culm as annual, three feet high, upright, thick, ſomewhat compreſſed and flexuoſe, hollow, jointed, branched. Leaves awl-ſhaped, largiſh, hairy, flat, reflex. Panicles ſcattered, large. Calyx three-valved, the outer glume only half the ſize. Corolla three-valved; glumes membranaceous, ſharpiſh; outer one-third of the ſize, bifid at top. Styles capillary: ſtigmas ovate, feathered, coloured. Seed ſubovate, compreſſed a little, pale, ſhining.

Native of the Eaſt Indies, and China. In thoſe countries, as alſo in the South of Europe, it is cultivated as an eſculent grain. It varies in the colour of the ſeed.]

Mr. Miller mentions two varieties, one with white, the other with black ſeeds, but not differing in any other particular. He has alſo another ſpecies, which he names *Milium ſparſum*. It was found at La Vera Cruz by Houſtoun, who called it *M. panicula ampla erecta ſparſa*. It has a more ſlender ſtalk than common Millet, about three feet high. The ſheaths have no hairs but are channelled. The leaves are ſhorter. The panicle ſtands erect, and the chaff has ſhorter awns or beards.

[Loureiro mentions a variety with browniſh or duſky red ſeeds. Retzius deſcribes the variety with black ſeeds (Milium ſemine nigro. *Bauh. pin.* 26. & *Mor. hiſt.* 3. 196. *f.* 8. *t.* 5. *f.* 2.) Culm round, jointed almoſt upright, branched. Leaves a foot long, half an inch wide, hairy, with hiſpid ſheaths: no ligule, but inſtead of it widiſh briſtles. Panicle nodding, with the peduncles commonly in pairs, dichotomous, rugged backwards, flexuoſe. Flowers on each pedicel commonly two, ſometimes one or three, pedicelled, ſometimes but very ſeldom one ſeſſile. Calycine glumes ovate, acute, nerved; the third glume is much ſhorter. Corolla globular, hyaline. Seed browniſh-black.

Variety β. has the panicle attenuated, the culm upright, the leaves lanceolate, the ſheaths even and ſmooth[e].

Gerarde, in his Herball (A° 1597.) ſays, "I have of it yearly in my garden."

50. Root perennial, ſtoloniferous. Culms eight feet high and more, erect, branching very much. Leaves rough at the edge, and on the larger nerves, but leſs ſo. Edges of the ſheaths bearded with bundles of whitiſh hairs like fringes. Panicle a foot long, branching very much. Pedicels two-flowered, ſo that one flower is ſubſeſſile on the pedicel of the other. Florets copious, green, round, acuminate. Calycine valves acute, even the acceſſory one, which is one-third ſhorter. Hermaphrodite floret two-petalled: the male one ſeems one-petalled.

Cultivated in Malabar, where it never produced ſeed, but is increaſed by offſets or runners; whence Koenig ſuppoſes it not to be a native, but to have been introduced from ſome other parts.

The natives there uſe it, particularly in ulcers of the noſe, and as a diſcutient in other caſes, either ſimply bruiſed, or made into a cataplaſm by boiling, as Koenig reports.

51. This is a tall graſs, with a ſlender culm and black knots. Leaves acuminate, very ſlightly hairy, five inches long, and three quarters of an inch wide. Sheaths ſhorter than the joints (or internodes with the edges bearded. Panicle almoſt a foot long, with long branches ſpreading at an acute angle and rugged, ſpotted with black in the axils. Flowers ſcattered, ſolitary or in pairs, pedicelled, oblong, acute, ſmall. The two inner glumes of the calyx equal, purple; the acceſſory valve a little ſhorter, whitiſh; all lanceolate. Corolla of the ſame length and ſhape with the calyx.—Wennerberg gathered it in Sumatra.

52. Height a foot and a half. Culm filiform, decumbent at the baſe, rooting here and there. Leaves ſhort, perfectly lanceolate, with white ſcattered hairs. Panicle with ſhort ſolitary ſubdivided branches, ſpreading at an acute angle. Flowers ſmall, ſeſſile and pedicelled, oblique. The hollow glume of the calyx ſhorter, almoſt boat-ſhaped; the flattiſh one longer; both rugged-muricate: the acceſſory one ſmall, lanceolate, ſtriated, placed under the preceding. Corolla oblique, very ſmooth.—Native of the Eaſt Indies; ſent by Koenig[f].

53. This graſs reſembles *Poa capillaris*, but is entirely hirſute[g]. It is three feet high, with a panicle more than a foot long, the peduncles and pedicels ſtiff and ſtraight. Calyxes pale green, narrow, naked. Joint of the ſtem bearded, but the beard turned upwards. Sheaths of the leaves ſtriated, and between the ſtreaks callous dots with hairs on them. There are alſo hairs on the leaves themſelves ariſing from raiſed dots[h].

Native of Virginia and Jamaica. Cultivated in 1758, by Mr. Miller. It is an annual graſs and flowers from June to auguſt[i].

54. This has been confounded with the preceding. It is about a foot in height. Culms decumbent, branched, ſlightly hairy. Leaves two inches long,

[a] Linn. ſpec. [b] Hort. kew. [c] Retzius. [d] Willdenow from Moench. [e] Retzius. [f] Linn. ſpec. [g] Retzius. [h] Hort. kew.

narrow,

narrow, hairy as are alſo the ſheaths, but they have no callous dots. Beard of the joints denſe, turned downwards. Panicle ſcarcely three inches long, the whole of an ovate form, with the pedicels remarkably flexuoſe. Calyxes ovate, blunt, with a few rough hairs'.—Native of the Eaſt Indies.

β. Retzius mentions a variety that is wholly ſmooth, found by Koenig every where in the rice fields.

55. Culm ſimple or branched, two feet high and more. Leaves enſiform with ciliate ſheaths. Panicle ſpreading, compound. Peduncles capillary, flexuoſe, ſmooth. From each tooth of the rachis two florets, one ſubſeſſile, the other pedicelled.—Native of Jamaica and Japan*.

56. This is very nearly allied to *P. greſſarium*. Root creeping, perennial. Culms from five to ten feet high, upright, ſimple, even. Leaves lanceolate, towards the top convolute and ſharp, ſmooth, except at the edge, which is rugged, and at the baſe, which is rough-haired. Panicle erect, a foot long and more: the lower branches in whorls, the upper in pairs. Florets numerous, alternate, ovate-ſharpiſh, preſſed to the raceme, on ſhort ſubflexuoſe pedicels. Spikelets polygamous. Outer valve of the calyx very ſmall: inner oblong, ſharpiſh, pale. Inſtead of the hermaphrodite there is often a female floret with a male at the ſide of it, or a female alone without the hermaphrodite and male. Seed oblong, ſhining.

Native of the Weſt Indies; ſaid to have been brought from the coaſt of Africa. Guinea-graſs is much eſteemed in Jamaica both for ſheep and cattle, and flowers chiefly in october'.

57. Height from one to two feet. Roots and radicles very long, filiform. Culm creeping at the baſe, aſcending, ſomewhat branched, rooting at the joints, round, ſtriated, pubeſcent or ſmooth, looſe. Branches from the ſheaths of the leaves, ſomewhat hirſute. Leaves diſtich, obliquely elliptic at the baſe, unequal on the ſides, terminated by a lanceolate point, quite entire, ſomewhat waved, very thin and very finely ſtreaked, ſmooth underneath, hairy above. Sheaths at the joints ſhort, open in front, ſtriated, hirſute, hairy at the neck. Knots rather large, villoſe with white hairs. Panicles ſmall, erect, with terminating and axillary peduncles; branches ſhort, few-flowered: florets pedicelled, ſmall, green. The two valves of the calyx are oblong, nearly equal, awned at the tip. The two valves of the corolla, in the hermaphrodite flower, are oblong, blunt, whitiſh; one of them ſmaller and included. Anthers pale. Styles rather long. Stigmas feathered, whitiſh. In the male flower, the outer valve is ovate, acute, concave, and includes the inner, which is ſmaller, ovate, acute and more tender. Anthers purple.—Native of Jamaica and Hiſpaniola.

58. This graſs is a ſpan in height. Culm creeping, but in a fertile ſoil erect, round, tomentoſe: branchlets aſcending, ſhort, about an inch in length, leafy, theathed, jointed, tomentoſe-hirſute. Leaves half-embracing, ſhort, broad-lanceolate, entire, acuminate, flat, extremely hirſute at the edge, ſoft. Sheaths ſmall, rough-haired, with the ligule hirſute. Panicles ſmall, very ſhort: racemelets ſimple: florets ſmall, ovate, obtuſe, on ſhort waved pedicels. Inner calycine valve ovate, concave, ſtriated, rough-haired; outer minute. Valves of the hermaphrodite corolla ovate: filaments the length of the glumes; anthers purple: ſtigmas villoſe, dark purple, ſhort: ſeed oblong, ſhining. In the male or neuter floret, the outer valve is like the inner calycine valve, ovate, ſtriated; the inner is very ſmall, flat, whitiſh.—Native of Jamaica, on ſandy fields in the mountains.

59. Culm a foot high and more, decumbent, creeping a little, branched, jointed, ſheathed, round, ſtriated, ſmooth. Sheaths at the baſe of the branches elongated, embracing, ſtriated, ſmooth: branchlets aſcending, filiform, ſtrict, ſubdivided, ſheathed, leafy, round. Leaves half embracing, lanceolate, broadiſh, an inch long, acuminate, rigid, ſtriated, ſomewhat rugged to the touch. Panicle ſmall, oblong; compoſed of racemelets which are alternate, diſtant, ſubdivided, capillary, ſhort, rugged. Florets remote, ovate, minute. Valves of the calyx almoſt equal, ovate, obtuſe, concave, rigid, ſtreaked with purple. Glumes of the corolla, in the hermaphrodite florets, a little leſs than thoſe of the calyx, more ſlender, whitiſh. Filaments ſhort. Anthers ovate, largiſh, bifid, vertical, whitiſh-yellow. Styles longer than the glumes. Stigmas villoſe, long, recurved, whitiſh. Seed roundiſh, ſhining, very minute. In the neuter floret, the outer valve of the corolla is ovate and ſtriated, the ſame ſize with the inner glume of the calyx: the inner valve is tender, leſs, whitiſh. This graſs is diſtinguiſhed by its rigidity.

Native of Jamaica in the high mountains, with *Aplusia Zeugites*.

60. Height from one to two feet. Culm jointed, round, pubeſcent. Leaves retuſe and oblique at the baſe, entire, ſmooth, ſtriated, three or four inches long. Sheaths long, with a contracted ligule, appearing ſomewhat hirſute when magnified. Panicles peduncled, an inch and more in length; peduncle long, filiform: florets browniſh green, ovate. Pedicels now and then two-flowered. Outer valve of the calyx leſs, inner ovate. The reſt as in *P. carthaginenſe*, which it reſembles: but the culm is by no means branched, the ſheaths are more contracted, the panicles peduncled, the florets in pairs, and the glumes ovate not acute.—Native of Jamaica in boggy paſtures.

61. Height from two to four feet. Culm ſubdivided, compreſſed a little, ſtriated, even. Leaves ſtriated, even, ſpreading. Sheaths cloſe, even. Branches of the panicle ſubdivided, ſpreading, almoſt upright, flexuoſe. Florets very minute, pedicelled, preſſed cloſe, approximating, ovate, bright green. Outer valve of the calyx leſs by half; inner a little larger; all ovate acute concave ſtriated, bluntly keeled at the edge, appearing ciliate when magnified. Valves of the corolla in the hermaphrodite floret equal, leſs than the calycine glumes, ovate, concave. Filaments very ſhort. Anthers yellowiſh. Stigmas blood-red. Seed roundiſh, ſhining, extremely ſmall. In the neuter floret, the outer valve reſembles that of the calyx.

Native of Jamaica, in dry woods; flowering at the end of the year*.

62. Leaves as wide as thoſe of *Commelina*, embracing at the throat, villoſe on the outſide of the neck about the throat, and hairy alſo on the edge of the leaves at the baſe. Panicle of a very middling ſize, compoſed of lateral racemes, not ſubdivided, but producing ſimple pedicels. Florets awnleſs, largiſh.—Native of North America'.

Loureiro ſays that he found it in Cochinchina. He deſcribes the culm as annual, thick, five feet high. Leaves lanceolate, large, plaited and grooved, with an embracing villoſe neck. Florets awnleſs, in a panicle that is ſomewhat contracted or ſqueezed, with the lateral branches moſtly ſimple. Seed pale.—Introduced 1765, by Mr. John Cree. It flowers in auguſt and ſeptember; and is a perennial graſs'.

63. Height three or four feet. Culm ſimple, erect, round, at top compreſſed and pubeſcent. Leaves long, wide, flat, entire, ſtriated, ſpreading, even. Sheaths cloſe, ſomewhat rough-haired. Branches of the panicle ſimple, alternate, ſpreading; the loweſt ſomewhat compreſſed, even. Florets preſſed to the rachis, ovate, blunt, ſmooth, yellow. Pedicels equal. Outer valve of the calyx only one-third of the ſize of the inner one; both ovate, obtuſe, concave, ſtriated, pellucid. Valves of the hermaphrodite corolla ovate, concave. Filaments ſhort. Anthers ſmall, purple. Stigmas villoſe, blood-red. Seed oblong, ſhining, yellow. Outer valve of the neuter floret concave, ovate, ſtriated: inner flat, more tender, whitiſh.

This ſpecies is ſingular in the colour being conſtantly yellow, which is not the caſe in the reſt. It occurs, but rarely, in dry places, in the Southern parts of Jamaica.

64. Culm a foot, ſometimes two feet in height, aſcending, filiform, round, leafy, ſmooth. Leaves long, ſharp, erect, ſtriated, even. Sheaths ſtriated,

villoſe

* Thunberg. ' Swartz. * Swartz, ' Linn. ſpec. ' Hort. kew.

villose at the neck and throat. Knots purple. Branches of the panicle alternate, flexuose, somewhat rigid. Florets rather distant, pedicelled, ovate, acute, smooth. Calycine valves ovate, acute, smooth; outer less by half than the other. Glumes of the hermaphrodite corolla equal, less than the calyx, pellucid, whitish. Anthers purple. Stigmas villose, blood-red. Seeds roundish, yellow, shining. In the male floret, outer valve ovate, acute, smooth: inner minute, flat, whitish. Filaments one to three, minute, barren.—Common in dry places in the West Indies.

This species bears much resemblance to *P. repens*; but that has a more rigid habit, and creeping culms: the leaves spreading, somewhat divaricating, wider, much striated, rather rugged at the edge, with the sheaths subdistich, almost covering the culm: panicle more subdivided, with the florets blunter and pale.

65. Culm three or four feet high, round, leafy, smooth. Leaves a span long, entire, longitudinally striated, smooth. Sheaths more contracted. Panicle a foot long: branches alternate, stiffer, angular, subflexuose, smooth. Spikelets large, smooth, pedicelled, commonly in pairs, one shorter than the other. Outer valve of the calyx larger but shorter, wide, acute, slightly keeled: inner a little longer, ovate, keeled, striated. Corolla pale: outer valve ovate, acute, including the inner, which is smaller and flattish. Anthers pale, seeming to be barren. Style bifid. Stigmas longer, pale purple. Outer valve of the male corollet larger, acute, green; inner a little less, ovate, acute, whitish. Anthers purple. Seed in the hermaphrodite floret included in the valves, which are hardened, yellow and shining. It is distinguished by the spikelets being much larger than in any of the species.

Native of Jamaica, in mountain woods, in the Southern parts [a].

66. Culms dichotomous, branched. Leaves ovate-lanceolate, with the sheaths dotted and hairy; the racemes of fructification are so entirely concealed within them, that no vestige appears on the outside: in other respects it is nearly allied to *P. latifolium*.

Native of Pensylvania, where it was found by Kalm.

67. This grass contends for height with the loftiest trees in the East Indies, where it is a native; and yet the culm is scarcely wider than a goose quill [b].

In Linneus's *Flora zeylanica* it is said to be creeping. Leaves embracing, even, wider in this grass, in proportion to its length, than in any other: hence the culm resembles that of *Commelina*. Sheaths narrow, striated. Stem at bottom often branched. Panicle less wide, with very slender and almost capillary peduncles. Florets small, awnless.

Introduced in 1776 by Monf. Thouin. It flowers here in march and april [c].

68. Culms filiform, even. Leaves lanceolate, even, five-nerved underneath, rugged at the edge; with the sheaths deeply striated. Panicle erect, narrow, with the branches subramose. Flowering calyxes subsubulate, curved on the outside, striated, awnless, the outer valve under the curvature membranaceous, cordate, acute, extremely small. Fruiting calyxes three times larger, oval, gibbous, very blunt, many-grooved, purple. Corolla shorter by half than the calyx, membranaceous.—Native of the East Indies.

69. This is a very tall grass, with a very large diffused panicle [d].—Native of Virginia, and other parts of North America. Introduced in 1781, by Mr. William Curtis. It flowers in auguſt and ſeptember [e].

70. Native of the East Indies. This, or one like it, is also found in Portugal [f].

71. Culms a span high, procumbent, leafy, rooting. Leaves smooth, narrow. Panicle small, strict, with the peduncles sometimes a little flexuose. Calycine glumes very blunt, unequal.—Native of the East Indies: found by Koenig [g].

72. Culm from one to two feet high, round, leafy, subdivided at the joints, grooved, striated. Knots larger, approximating, brown. Leaves oblique at the base, acuminate, slightly keeled, entire, longitudinally striated, smooth. Sheaths rather large, often ventricose, striated. Peduncles from the upper sheaths, filiform, long, very loose. Branches of the panicle clustered in form of a thyrse. Spikelets pedicelled, approximating, erect, pale green, smaller. Inner valve of the calyx ovate-lanceolate, acuminate: outer three times smaller, ovate, acute. Valves of the corolla in the hermaphrodite florets minute, ovate, shining, whitish, hardish, one a little less, the other included. Filaments very minute. Anthers purple. Style bifid. Stigmas purple. Seed oblong, whitish, shining. In the male or neuter floret, the valves of the corolla almost equal, lanceolate: outer greener; inner more tender involved in the outer.——Native of Jamaica, among other grass in woods.

73. Culm a fathom in height at most, round, pubescent. Branches divaricating, leafy, hirsute. Leaves acuminate, half a foot long, spreading, striated, sanguinose-hirsute, soft. Sheaths open in front, very hirsute. Knots larger. Panicles half a foot long; with spreading, flexuose, smooth branches. Spikelets smooth, larger, remote, on capillary pedicels. Outer valve of the calyx less by half, ovate, obtuse, villose at top: inner larger, ovate, striated, concave, slightly keeled, villose at top. Valves of the corolla in the hermaphrodite floret ovate, paler. Anthers purple. Seed inclosed by the yellow indurated valves of the corolla, ovate on one side, flat on the other. In the corolla of the male or neuter floret, the outer valve is larger, concave, ovate, acute, smooth, keeled: inner flat, less, more tender.—Native of Jamaica.

74. Culm a fathom in height, erect, round, leafy, smooth. Leaves ovate at the base, erect, longitudinally nerved, striated, smooth. Sheaths close, with the neck contracted and villose, striated, long. Knots small, with a black ring. Panicle erect, dense, branched; branches and branchlets capillary, strict. Spikelets small, numerous, pedicelled, pale green. Valves of the calyx almost equal, convex, ovate, striated, green: outer ciliate at top, even when ripe villose; the other smooth. Valves of the corolla in the hermaphrodite floret ovate, yellow, shining. Anthers whitish. Stigmas very minute, villose, whitish. Seed white, shining: in the male, valves less, ovate, yellow, one less than the other. Filaments two or three, with very minute anthers.

Native of Jamaica, in the high mountains near Coldſpring in St. Andrew's parish.

75. Culm three or four feet high, smooth, leafy. Leaves broad-lanceolate, an inch in breadth, more than a foot in length, acuminate, erect, rounded at the base, hairy, ciliate at the edge, marked with lines, smooth, somewhat rugged underneath. Sheaths long, close, smooth, contracted at the neck. Ligule villose. Panicle almost a foot long, erect. Branches in a sort of whorl, scattered, villose at the base, spreading, subdivided, somewhat rigid; the last capillary. Spikelets roundish, larger, shining, on flexuose, capillary pedicels. Valves of the calyx equal, ovate, blunt, smooth, glutinous. Valves of the corolla in the hermaphrodite floret smaller, whitish. Filaments capillary, whitish. Anthers purple. Stigmas hairy, purple. Seed roundish, hardish, white, shining. Outer valve of the corolla, in the neuter floret, ovate, obtuse, smooth: inner smaller and more tender.

Native of Jamaica, in the Southern parts, in the woods of the highest mountains. It is there called *Ginger-graſs*, on account of the width of the leaves. The great clamminess of the spikelets, whence its trivial name, is peculiar to this species [h].

76. This grass is a foot high, slender, smooth. Culm leafy up to the panicle, decumbent, putting forth long very simple, solitary rooting fibres at the joints. Leaves linear-lanceolate, acute, an inch and half in length, having long white hairs at the base on both edges. Panicle two inches long, slender, upright. Flowets small, pedunculed, oblique, blunt, purple, naked. Accessory valve of the calyx acute, half the length of the flatter valve. It resembles *P.*

[a] Swartz. [b] Linn. spec. [c] Hort. kew. [d] Linn. syst. [e] Hort. kew. [f] Linn. spec. [g] Retzius. [h] Swartz.

trigonum,

trigonum, even in the ſhape of the ſeed.—Gathered near Canton in China, by Wennerberg[a].

77. Culm one foot high to two feet, ſometimes rooting, ſubdivided at the baſe, looſe, round, ſmooth, leafy: knots approximating, ſmooth. Leaves acute, rounded and oblique at the baſe, entire, ſpreading, ſtriated. Sheaths cloſe, longitudinally ſtriated, ciliate. Ligule open, hairy. Panicles erect, often from the boſom of the upper leaf, as from a ſpathe. Branches in alternate cluſters, multifariouſly ſubdivided, ſpreading very much, ſo fine that the extreme ones are ſcarcely viſible. Spikelets diſtinct, pedicelled, very minute, oblong, green. Outer valve of the calyx very ſmall; inner ovate, ſcarcely ſharp, ſtriated a little. Valves of the corolla, in the hermaphrodite floret, equal, ovate. Anthers whitiſh. Stigmas feathered, pale. Seed oblong, ſhining, very minute. Outer valve of the corolla, in the male or neuter floret ovate acute; inner minute, flat, whitiſh.

On comparing ſeveral ſpecimens of *Pan. breviſolium*, from the Eaſt Indies, with the Jamaica graſs, they do not appear to be diſtinct, although the latter is larger and more ſpreading, and with the glumes ſcarcely blunter. Calyxes in both two-flowered, and the leaves wider or narrower. Some other ſpecies have ſhort leaves, and therefore Linnæus's trivial name of *breviſolium* is a bad one: *trichoides* is very deſcriptive of the panicle in this ſpecies.

Milium capillare of Rottboell. *act. hafn.* 1778. 271. which is Pan. capillare of Rolander, ſeems to be only a variety of this, the third calycine glume, of which thoſe two authors deny the exiſtence, is found in many of the ſpikelets, though extremely ſlender. All the parts are larger in this variety, except the ſpikelets, which are very ſmall; the ſheaths are very ſmooth, but the leaves are pubeſcent[b].

Dr. Patrick Browne calls it *Smaller Wood-graſs*, and ſays it is very common in the woods of Jamaica, agreeing for the moſt part with the Guinea graſs both in the arrangement and formation of its flowers. The ſtalk and leaves are excellent fodder for all ſorts of cattle, and the ſeeds ſerve to feed ſmall birds.

78. Native of Jamaica.

79. Culm four or five feet in height, ſimple, round, leafy. Leaves broadiſh, two feet long, erect. Sheaths cloſe, grooved-ſtriated. Panicle a foot long, erect. Branches in whorls, capillary, ſpreading, appearing rough in the magnifier. Spikelets pedicelled, ſomewhat remote, ſmall, pale green. Valves of the calyx ovate, acuminate, concave, ſtriated: outer leſs by half. Valves of the corolla in the hermaphrodite floret ovate, acute, whiter. Anthers purple. Stigmas feathered, whitiſh: in the neuter, outer valve of the corolla like the inner of the calyx; inner more tender, whitiſh. It is very nearly allied to P. maximum (n. 56.) differing chiefly in its ſhagginess[c].

Swartz has another ſpecies from Jamaica, which he names *Pan. ceſpitoſum*, very nearly allied to *groſſarium* (n. 55.): but that has the culm more erect, large and ſtrict. The ſpikes panicled, more numerous and approximating; with cluſtered, larger ſpikelets.

Thunberg alſo has a ſpecies from the Cape of Good Hope, not enumerated above—*Panicum caudatum*, which he thus characteriſes: Panicle ſubſpiked contracted or ſqueezed cloſe, flowers ſolitary, glumes ſmooth, acute.

We are obliged to Retzius and Swartz for the greater part of the above ſpecies, which are natives either of the Eaſt or Weſt Indies. The former has, in his ſecond faſciculus, a ſpecies, which he names *Pan. Caffrorum*. It is called *Caffer-korn* at the Cape, and may be of the genus *Holcus*.

In his fifth faſciculus, *p.* 18. *n.* 34. he has *Pan. biſpiculum*, ſent by Koenig from the Eaſt Indies, which he ſays is very nearly allied to *Pan. flagellatum*, but is very different from it. The corolla is acuminate and hermaphrodite. Between the corolla and the long-awned valve of the calyx there is a hyaline petal, as in that; but in this there are no ſtamens, nor is there any rudiment of a piſtil.]

[a] Retzius. [b] Swartz. [c] Idem.

PROPAGATION AND CULTURE.

7, 8. The ſeeds of theſe ſorts may be ſown in the ſpring, at the ſame time as Barley is ſown, and may be managed exactly in the ſame way; but they ſhould not be ſown too thick, for theſe ſeeds are very ſmall, and the plants grow ſtronger, therefore require more room.

The German ſort does not grow above three feet high, unleſs it is ſown on very rich land, in which caſe it will riſe to be four feet high; but the leaves and ſtems of this Corn are very large, ſo require to ſtand four or five inches apart, otherwiſe they will grow up weak and come to little. Theſe large growing Corns ſhould be ſown in drills at about eighteen inches apart, ſo that the ground may be hoed between the rows, to keep them clear from weeds, and the ſtirring of the ground will greatly improve the Corn. In auguſt the Corn will ripen, when it may be cut down and dried, and then ſhould be houſed.

The Italian Panic grows much larger than the German, and produces much larger ſpikes; ſo this ſhould be allowed more room to grow, otherwiſe it will come to little. This is alſo later before it ripens, ſo it is not very proper for cold countries.

Moſt of the other ſorts are natives of very warm countries, where ſome are uſed by the inhabitants to make bread. Theſe grow very large, and require a good ſummer, otherwiſe they will not ripen in this country. The ſeeds ſhould be ſown the latter end of march or the beginning of april, on a moderate hot-bed, and the plants ſhould be planted out when grown to a proper ſize, upon a bed of light rich earth, in a warm ſituation. They ſhould be planted in rows about three feet aſunder, and the plants muſt be kept clear from weeds. When the plants are grown pretty tall, they ſhould be ſupported by ſtakes, otherwiſe the winds will break them down; and when the Corn begins to ripen, the birds muſt be kept from it, otherwiſe they will ſoon deſtroy it. Theſe are preſerved in ſome curious gardens for the ſake of variety, but they are not worth cultivating for uſe in England.

49. The common Millet was originally brought from the Eaſtern countries, where it is ſtill greatly cultivated, from whence we are furniſhed annually with this grain, which is by many perſons greatly eſteemed for puddings, &c. but is ſeldom cultivated in England in quantity, but by way of curioſity in ſmall gardens, for feeding of poultry; but the ſeeds generally ripen very well.

They muſt be ſown the beginning of april, upon a warm dry ſoil, but not too thick, becauſe theſe plants diviſe into ſeveral branches, and ſhould have much room; and when they come up, they ſhould be cleared from weeds, after which they will, in a ſhort time, get the better of them, and prevent their future growth. In auguſt theſe ſeeds will ripen, when it muſt be cut down, and beaten out, as is practiſed for other grain; but when it begins to ripen, if it be not protected from birds, they will ſoon devour it.

[21. Scotch-graſs is propagated in Jamaica by the joints or root, and ſet in ſmall drilled holes about two feet and a half aſunder. The young ſhoots begin to appear in a few days, and as they grow, they ſpread and creep along the ground, caſting a few roots, and throwing out freſh ſhoots from every joint, as they run; theſe ſoon ſupply the land, and fill the field with ſtanding plants, which alone are generally cut. It is fit to cut in ſix months from the firſt planting, and every month or ſix weeks after, if the ſeaſon fall in kindly, and due care be taken to keep the ground free from weeds. An acre of good ground, well ſtocked with this graſs, near Kingſton or Spaniſh town, is computed to bring in above a hundred and twenty pounds a year; and when once planted holds many years: but when the main ſtalk or root grows hard or woody, the younger ſhoots do not puſh ſo luxuriantly, and they are then obliged to plant anew; this however is eaſy, being done gradually, for the pieces are generally ſupplied as they clean them, by throwing up every ſtubbed or failing root they find, planting a few joints in the place

56. Guinea-grass is increased in the same manner, but does not require near so much moisture, and is reckoned a more hearty fodder. It is not so much cultivated as it ought to be. The lands about the towns are too subject to drought to produce it in any perfection; and in the other parts of the country they are too indolent to be at the trouble of planting it; not considering how much time and labour is lost in seeking for other fodder, which is not so good, and cannot so easily be obtained; nor do they consider the losses they sustain in stock, for the want of abundance of good wholesome food[1].

PANICUM. See *Andropogon, Alopecurus, Cynosurus, Holcus, Paspalum.*

PANNA-KELEUGO-MARAVA. See *Polypodium.*

PANOVER-TSJERAVA. See *Tropa.*]

PANSIES. See *Viola.*

PAPAVER (*of Pliny and other Latin authors:* a Papo, *because it was put into* Papa *or* Pap *to procure sleep, whence the verb* Pappo *to Perfus.* In Greek Μηκων.)
Lin. gen. n. 648. *Reich. n.* 704. *Schreb. n.* 881. *Tournef. t.* 119. *Juss.* 236. *Gærtn. t.* 60.
Class. 13. 1. Polyandria Monogynia.
Nat. order of *Rhoeadeæ. Papaveraceæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* two-leaved, ovate, emarginate: *leaflets* subovate, concave, obtuse, caducous.
COR. *Petals* four, roundish, flat, spreading, large, narrower at the base; alternately less.
STAM. *Filaments* numerous, capillary, much shorter than the corolla. *Authers* oblong, compressed, erect, obtuse.
PIST. *Germ* roundish, large. *Style* none. *Stigma* peltate, flat, radiate.
PER. *Capsule* crowned with the large stigma, one-celled, half-many-celled, opening by many holes at the top under the crown.
SEEDS numerous, very small. *Receptacles*, longitudinal plaits; the same number with the rays of the stigma, fastened to the wall of the pericarp.
OBS. *The pericarp is either globular or oblong, and differs in the rays of the stigma. The primary division of the species is to be taken from the smoothness and roughness of the pericarp.*

ESSENTIAL CHARACTER.

Cal. two-leaved. *Cor.* four-petalled. *Capsule* one-celled, opening by holes under the permanent stigma.

SPECIES.

* *With hispid Capsules.*

1. Papaver hybridum. *Round prickly-headed Poppy.*
Lin. spec. 725. *Reich.* 2. 571. *hort. cliff.* 201. *upsal.* 136. *Hudf. angl.* 230. *Wither. arr. ed.* 3. 485. *Engl. bot. t.* 43. *Relh. cant. n.* 383. *Sibth. oxon. n.* 472. *Krock. silef. n.* 816.
P. laciniato folio, capitulo hispido rotundiore. *Raii syn.* 308.
Argemone capitulo breviore. *Baub. pin.* 172.—hispido. *Baub. hist.* 3. 396. 1.
A. capit. rotundiore. *Park. theat.* 369. 1. *Raii hist.* 855. *Petiv. brit. t.* 52. *f.* 5.
A. capit. torulo. *Ger.* 300. 1. *emac.* 373. 1. *Lob. obs.* 144. 1. *ic.* 1. 276. 1. *Mor. hist.* 2. 278. *f.* 3. *t.* 14. *f.* 9.
Capsules subglobular terose hispid, stem leafy many-flowered.
2. Papaver Argemone. *Long prickly-headed Poppy.*
Lin. spec. 725. *Syst.* 489. *Reich.* 2. 571. *fl. suec. n.* 466. *hort. cliff.* 201. *Hudf. angl.* 230. *Wither. arr. ed.* 3. 486. *Curt. lond.* 5. 38. 313. *Relh. cant. n.* 384. *Lightf. scot.* 279. *Sibth. oxon. n.* 473. *Fl. dan. t.* 867. *Hall. helv.* 1061. *Scop. carn. n.* 636. *Pollich pal. n.* 505. *Neck. gallob.* 229. *Sauv. monsp.* 252. *Ger. prov.* 373. *Villars dauph.* 3. 688. *Krock. silef. n.* 817. *Gron. orient.* 158.
P. laciniato folio, capitulo hispido longiore. *Raii syn.* 308.
P. erraticum capit. long. hisp. *Tournef. inst.* 238. *Garid.* 348.

[1] Browne jam. See Bath Society's Papers 5. 182.

Argemone capitulo longiore. *Baub. pin.* 172. *Lob. obs.* 144. 2. *ic.* 1. 276. 2. *Ger.* 300. 2. *emac.* 373. 2. *Park. theat.* 370. *Raii hist.* 856. *Petiv. brit. t.* 52. *f.* 6.—spinoso. *Baub. hist.* 3. 396. 2.
A. capit. teniore long. hirsuto. *Mor. hist.* 2. 278. *s.* 3. *t.* 14. *f.* 10.
Capsules club-shaped hispid, stem leafy many flowered.
3. Papaver alpinum. *Alpine prickly headed Poppy.*
Lin. spec. 725. *Syst.* 490. *Reich.* 2. 572. *mant.* 401. *Hall. helv. n.* 1062. *Scop. carn. n.* 637. *Jacqu. austr.* 1. *t.* 83. *Krock. silef. n.* 818. *Villars dauph.* 3. 689. *Allion. pedem. n.* 1067.
P. alpinum saxatile coriandri folio. *Tournef. inst.* 239. *Segu. ver.* 1. 416. *t.* 4. *f.* 4.
P. Argemone flore flavo, perpusillum. *Pluk. phyt. t.* 247. *f.* 3.
Argemone alpine foliis Scandicis, lutea. *Baub. pin.* 173. *prodr.* 93. *Raii hist.* 856. 10.
A. alpina coriandri folio. *Baub. pin.* 172. *Raii hist.* 857.
A. minor Ponæ. *Dalech. hist.* 1714.
Capsule hispid, scape one-flowered naked hispid, leaves bipinnate.
4. Papaver nudicaule. *Naked-stalked prickly-headed Poppy.*
Lin. spec. 725. *Syst.* 490. *Reich.* 2. 572. *hort. cliff.* 136. *Fl. dan. t.* 41. *Gunn. norv. n.* 578. *Gmel. sib.* 4. 180. *Knipb. cent.* 10. *n.* 68.
P. erraticum nudicaule, flore flavo odorato. *Dill. elth.* 302. *t.* 224. *f.* 291.
P. errat. luteo flore, capite oblongo hispido et lævi. *Amm. ruth.* 61. *n.* 81.
Capsules hispid, scape one-flowered naked hispid, leaves simple pinnate-sinuate.

** *With smooth Capsules.*

5. Papaver Rhoeas. *Corn or Red Poppy.*
Lin. spec. 726. *Reich.* 2. 572. *hort. cliff.* 201. *upsal.* 136. *fl. suec. n.* 468. *mat. med.* 134. *Woodv. med. bot.* 512. *t.* 186. *Hudf. angl.* 230. *Wither. arr. ed.* 3. 486. *Curt. lond.* 3. 32. 215. *Lightf. scot.* 279. *Relh. cant. n.* 385. *Sibth. oxon. n.* 474. *Hall. helv. n.* 1064. *Scop. carn. n.* 638. *Pollich pal. n.* 507. *Neck. gallob.* 229. *Sauv. monsp.* 252. *Ger. prov.* 373. *Villars dauph.* 3. 689. *Allion. pedem. n.* 1068. *Krock. silef. n.* 820. *Pallas it.* 3. 546. *Gron. orient.* 157. *Regn. bot. Ludw. ect. t.* 17. *Blackw. t.* 2. & 560. *Knipb. cent.* 5. *n.* 63, 64. *Knorr. del.* 1. *t.* R. 14. *Ger.* 299. 1. *emac.* 371. 1. *Petiv. brit. t.* 52. *f.* 2. *Lob. obs.* 143. *ic.* 1. 275. *Raii hist.* 855.
P. erraticum. *Dod. pempt.* 447. *Matth.* 1057.—primum. *Fuchs. hist.* 516.—prius. *Dalech. hist.* 439.—majus. *Baub. pin.* 171.—simplex. *Mor. hist. s.* 3. *t.* 14. *f.* 6.—rubrum campestre. *Baub. hist.* 3. 395.—rhoeas I. sylvestre. *Park. theat.* 366. 4.
P. laciniato folio, capitulo breviore glabro annuum, Rhoeas dictum. *Raii syn.* 308.
Capsules urn-shaped smooth, stem hairy many-flowered, leaves pinnatifid gashed.
[6. Papaver dubium. *Long smooth-headed Poppy.*
Lin. spec. 726. *Syst.* 490. *Reich.* 2. 573. *fl. suec. n.* 467. *Hudf. angl.* 230. *Wither. arr. ed.* 3. 487. *Curt. lond.* 5. 37. 297. *Lightf. scot.* 280. *Relh. cant. n.* 386. *Sibth. oxon. n.* 475. *Hall. helv. n.* 1063. *Pollich pal. n.* 506. *Jacqu. austr.* 1. 17. *t.* 25. *Krock. silef. n.* 819. *Ger. prov.* 373. *Villars dauph.* 3. 689.
P. erraticum capite longissimo glabro. *Tourn. inst.* 238. *Rupp. jen.* 2. 71. *ed. Hall.* 79. *Vaill. bot.* 157.
P. laciniato folio, capitulo longiore glabro. *Raii syn.* 309. *Petiv. brit. t.* 52. *f.* 3.
Argemone capit. long. glabro. *Mor. hist.* 233. *hist.* 2. 279. *s.* 3. *t.* 14. *f.* 11.
Capsules oblong smooth, stem many-flowered with bristles pressed close, leaves pinnatifid gashed.]
7. Papaver somniferum. *White Poppy.*
Lin. spec. 726. *Reich.* 2. 574. *hort. cliff.* 200. *upsal.* 135. *mat. med.* 134. *Woodv. med. bot.* 503. *t.* 185. *Hudf. angl.* 231. *Wither. arr. ed.* 3. 487. *Relh. cant. n.* 387. *Sibth. oxon. n.* 476. *Krock. silef. n.* 821. *Hall. helv. n.* 1065. *Villars dauph.* 3. 690.

P. album & nigrum officinarum. *Crantz. austr.* 138. *Blackw.* 482, 483. *Regn. bot.*

P. sylvestre. *Ger. emac.* 370. *Raii hist.* 854. *syn.* 308.

α. P. hortense semine albo. *Bauh. pin.* 170.

P. album. *Mill. dict. n.* 9.

Common White Poppy.

β. P. hort. nigro semine. *Bauh. pin.* 170.

P. somniferum. *Mill. dict. n.* 8.

Black-seeded White Poppy.

γ. P. pleno flore album. *Bauh. pin.* 171.

Double-flowered White Poppy.

Calyxes and capsules smooth, leaves embracing gashed.

8. Papaver cambricum. *Welch Poppy.*

Lin. spec. 727. *Reich.* 2. 574. *hort. cliff.* 201. *Huds. angl.* 231. *Wither. arr. ed.* 3. 488. *Engl. bot. t.* 66.

P. cambricum perenne, flore sulphureo. *Dill. elth.* 300. *t.* 223. *f.* 290.

P. luteum perenne, laciniato folio Cambro-britannicum. *Raii syn.* 309. *Petiv. brit. t.* 52. *f.* 4.

Argemone lutea Cambrobritannica. *Park. theat.* 369. *Raii hist.* 856.—capite longiore glabro. *Mor. hist.* 2. 297. *s.* 3. *t.* 14. *f.* 12. [a]

P. erraticum pyrenaicum, flore flavo. *Bauh. pin.* 171. *prodr.* 92.

Capsules smooth oblong, stem many-flowered smooth, leaves pinnate gashed.

9. Papaver orientale. *Oriental Poppy.*

Lin. spec. 727. *Reich.* 2. 574. *hort. upf.* 136. *Knorr. del. t.* R. 14. *a. Curt. magaz.* 57. *Gært. fruct.* 1. 289.

P. orientale hirsutissimum, flore magno. *Tournef. cor.* 17. *itin.* 3. 127. *Comm. rar. t.* 34.

Capsules smooth, stems one-flowered rugged leafy, leaves pinnate serrate.

DESCRIPTIONS, *&c.*

1. The leaves of the *Bastard Poppy* are much smaller than those of the common Corn-Poppy, and are cut into much finer segments. The stalks are slender, little more than a foot high, and not so branching as *P. Rhoeas*. The flowers are not so large, and of a deep purple colour, seldom lasting more than a whole day. The oblong prickly capsules are filled with small black seeds.

[Leaves doubly pinnatifid, with linear and nearly equal divisions; terminating pinna trifid; upper side nearly smooth: nerves of the under side covered with strong hairs pointing upwards. Branches and pedunicles channelled, covered with hairs of the same sort. Calyx oval, with a few hairs, larger and broader than the *P. Argemone* [b]. Petals small, dark dirty scarlet. Filaments deep purple. Anthers pleasant blue [c]. Capsule with six furrows like a melon [d], or from six to ten, with as many rays to the stigma [e].

Native of some of the Southern parts of Europe, and of England, among corn: as near Norwich, and Wells in Norfolk; the Parks Oxford, and Eynsham, Oxfordshire; about Durham. It flowers in june and july.]

2. Leaves finer cut and smaller than those of the common sort, but not so fine as those of the preceding. Stalks not so high as either, seldom having many branches. Flowers not half so large, of a copper colour, and falling away in a few hours. They appear in may, and are succeeded by long slender channelled capsules, filled with small black shrivelled seeds.

[Leaves pinnate; pinnas opposite, decurrent, lanceolate, deeply pinnatifid; the terminating one trifid; the upper side nearly smooth; the nerves of the under side and petioles rough with diverging hairs. Stem and peduncles covered with hairs pointing upwards. Calyx hairy. Petals wedge-shaped, narrow [f]: or, according to Withering, obovate, scarlet, with a black spot towards the base, white before the calyx opens. Germ inversely conical. From five to eight rays to the stigma. The capsule has the same number of cells as the stigma has rays; it is ribbed, and the strong hairs or bristles on it are white and point upwards.

Stalks a foot or more in height, bending upwards; where it grows luxuriantly it puts forth several, but among corn it is commonly found with a single upright one. Leaves next the root numerous, on long petioles. The hairs on the calyx issue from small papillæ or prominent points. Petals finely notched at top. Filaments about twenty, purple. Pollen blueish. Germ the length of the filaments, thickest at top, somewhat angular; the hairs gray and pressed to it. Rays of the stigma from three to five, villose, blueish. Capsule for the most part naked below, of a purplish colour. Seeds blackish.

The divisions of the leaves are finer in this than in any of the other Poppies; the petals in general grow more upright, and instead of having the edges falling over each other, are usually a little distant; the filaments are uncommonly dilated at top not at the base, as Haller asserts; and the anthers stand on a very slender pedicel placed on the top of each filament.

Like most of the other Poppies, it usually grows in corn fields, and is not unfrequent about London. It flowers at the beginning of june, and is often overlooked from the extreme fugacity of its petals [g]. It is a native not only of most parts of Europe, but of the Levant. This and the preceding are annual plants.]

3. Leaves smooth, with the segments finely cut. Stalks about a foot high, sustaining one small yellow or copper-coloured flower, succeeded by a roundish prickly head.

[The Poppy of the Alps is a little perennial plant hairy all over; the stems are naked and simple, with a bundle of leaves at the base; the leaves are winged; the first and the last leaflets are simple, the middle one larger, often trifid; the corolla is yellow, reddish or whitish; the capsule is oblong, with the upper part five-cornered. It grows in high rocky places, exposed to the wind, and bare of grass [h].

Scopoli remarks, that the variety with a yellow flower is not so hairy; that the segments of the leaves are more long and slender, with the last only trifid; and the stamens from sixty to seventy: he ascribes to this the synonym from Dillenius which belongs to *nudicaule*. The variety with a white flower is, according to him, a larger and more hairy plant, with paler leaves, all the pinnas trifid and wider, with the claws of the petals greenish. Segtier's figure seems to belong to this; the yellow variety not having sessile gashed pinnas.

Linneus, in his *mantissa* says, that the calyx is hirsute; the petals white with a yellow base; and the capsule ovate with five stigmas.

According to Haller, the leaves are commonly hirsute, but in the Swiss plant smooth; the stem a long span in height; the calyx brown and very hirsute; the corolla small, flaccid, white with a yellow claw, the yellowness frequently diffusing itself over the whole petal. Under the flower, as in *P. Argemone*, is a pencil of hairs of a dark-brown colour. The whole plant, when fresh, has a strong smell of musk. Neither Haller nor Scopoli distinguish this from the next species.

Native of Switzerland, Austria, Carniola, Dauphiné, Piedmont, Silesia.

4. Roots slender, whitish, fibrous (annual or biennial). Root-leaves many, hispid, the lowest broader and shorter, less deeply divided into fewer and broader segments; the leaves next above are divided into many narrower and longer segments, glaucous green especially underneath. From among these leaves arises a single naked stalk, sometimes two, a long span or a foot in height, somewhat glaucous, hispid, sustaining one flower of a middling size, like that of *P. cambricum*, but of a paler yellow colour, the two inner petals a little smaller, the two outer somewhat larger. Filaments very many, yellowish, with broadish compressed striated anthers. Germ roundish, greenish,

[a] Woodw. Mſs. [b] Relhan. [c] Linn. [d] Robson. [e] Woodw. Mſs. [f] Curtis. [g] Villars.

with

with eight rays on the top. Capsule roundish-oblong. Seeds black when ripe. The flower has a fine sweet smell like the Jonquil, especially morning and evening. The seeds were sent from the eastern confines of the Russian empire, from the province of Argunsky in Siberia, in latitude 51° by Heidenreich, and were sent to the Eltham garden, with those of several other plants by J. H. de Sprekelsen[1]. It was therefore cultivated there in 1730. It varies with white and with yellow flowers; which appear from june to august[2].

Linnæus says, the peduncles and calyxes are hairy; and that the leaves are less divided; but that it is so nearly allied to the preceding, as to give room to suppose it to be the produce of culture.

5. Stem from one to two feet high, upright, round, branched, purplish at bottom, with spreading hairs bulbose at the base. Leaves sessile, forming a kind of sheath at bottom, hairy on both sides; the segments or leaflets unequally toothed or serrate, each tooth rolled back at the edge, callous at top, and terminated by a small spine. Peduncles long, round, upright, one-flowered, the hairs on it spreading horizontally. The two calyx-leaves are hispid, membranaceous at the edge. Petals bright full scarlet. Stigma convex, with ten or twelve rays, of a purple colour. Capsule, not globular, as Linnæus terms it, but shaped like an egg with the broad end cut off, (or, as Dr. Withering has it, urn-shaped, and nearly as broad as it is long) marked with as many raised lines as there are rays to the stigma; which is flat and scalloped on the edge. Seeds dark purple[3].

Native of every part of Europe, the Levant, Japan, &c. and much the most common with us of any of the species, in corn-fields; also on dry banks and on walls, in such situations varying in its foliage, but still retaining the urn-shaped capsule, and spreading hairs. It flowers from june to august[4]. Being so common a weed it has many provincial names in English, besides its more classical ones of Corn Poppy, and Red or Scarlet Poppy; such as Corn-Rose, Cop-Rose or Cup-Rose in Yorkshire, Canker or Canker-Rose or Redweed in the Eastern counties, Head-wark, &c.

The petals give out a fine colour when infused, and a syrup prepared from this infusion is kept in the shops, more for the sake of the colour, than of any active principle the flowers possess. This species partakes in a small degree of the same properties with *P. somniferum*[5]. The capsules, as in that, contain a milky juice, of a narcotic quality, but the quantity is very inconsiderable. An extract from them has been successfully employed as a sedative; and some foreign practitioners even prefer this extract to opium[6].

There is a variety with an oval black shining spot at the base of each petal, from which many beautiful garden varieties originate[7].] These have double flowers, white, red bordered with white and variegated.

[6. This species resembles the preceding so much, as often to be mistaken for it. But the capsules of this are long and slender; the hairs on the peduncle are finer, and pressed upwards close to it; on the young peduncles they assume a shining silvery-white appearance, which is very beautiful; on the other parts of the plant the hairs spread out; the stalks and leaves are much paler; the flowers much smaller, and less intensely red[8].

Dr. Withering also remarks, that a strict attention to the proportionate length and breadth of the capsule, and to the hairs of the peduncle being laid close or spreading, will always distinguish this species from *P. Rhœas*. According to him, the segments of the leaves are entire, the edges and midribs hairy; rays of the stigma from six to ten.

Dr. Withering mentions a variety, with the whole plant very hairy, figured in *Flora danica*, 902.—It seems, he says, to be an intermediate plant between *P. Rhœas* and *dubium*, if it be not a distinct species. The bristles on the peduncles are laid close, as in the latter, but the segments of the leaves are very much snipt at the edges. The calyx is studded with large transparent globules, and a taper bristle springs out of each. The capsule is nearly twice as long as it is broad, so that it is longer than in *P. Rhœas*, but shorter than in *P. dubium*. It is found about Shankline Chine, and in pastures in various parts of the Isle of Wight.

P. dubium is native of several parts of Europe. According to Mr. Lightfoot, it is the most common species in North Britain; and in Battersea field, says Mr. Curtis, where the soil is light, it is nearly as common as the *Rhœas*; nor is it unfrequent on walls. About Cambridge, Oxford, Stockwell in Surry, Bocking in Essex, &c.—This, as well as the preceding, is annual.]

7. The Common White Poppy has the stalks large, smooth, five or six feet high, branching. Leaves large, grayish, embracing at the base, irregularly jagged on their sides. Flowers terminating, whilst inclosed in the calyx hanging down, but before the corolla expands becoming erect. The calyx is composed of two large oval grayish leaves, that separate and soon drop off. The corolla is composed of four large, roundish, white petals, of short duration; and succeeded by large roundish heads as big as Oranges, flatted at top and bottom, and having an indented crown or stigma. The seeds are white. There are several varieties, differing in the colour and multiplicity of their petals, which are preserved in gardens for ornament; but that with single flowers only is cultivated for use.

β. The Common Black Poppy has stalks about three feet high, smooth and dividing into several branches. Leaves large, smooth, deeply cut or jagged on their edges, and embracing. Petals purple with dark bottoms, succeeded by oval smooth capsules filled with black seeds, which are sold under the name of Maw-seed. There are many varieties of this with large double flowers, variegated of several colours; red and white, purple and white, and some finely spotted like Carnations: there are few plants whose flowers are so handsome; but having an offensive scent, and being of short duration, they are not much regarded. They are both annual and flower in june.

[Linnæus remarks the smoothness of all the parts in this species; the stem, leaves, calyx and capsule. The rays of the stigma are ten, or thereabouts, and the half-internal divisions as many.

The officinal Poppy is a native of the Southern parts of Europe, but probably came originally from Asia, where it is cultivated in great quantities.

The general history of Opium and its virtues has been so judiciously detailed by Dr. Woodville, in his Medical Botany, that we shall here insert the most material part of that author's information.

Opium, called also Opium Thebaicum, from being anciently prepared chiefly at Thebes, has been a celebrated medicine from the remotest times. It differs from Meconium, which was made by the ancients of the expressed juice or decoction of the Poppies. It is imported into Europe in flat cakes, covered with leaves, to prevent their sticking together: it has a reddish brown colour, and a strong peculiar smell: its taste, at first, is nauseous and bitter, but soon becomes acrid, and produces a slight warmth in the mouth: a watery tincture of it forms an ink, with a chalybeate solution. According to the experiments of Alston, it appears to consist of about five parts in twelve of gummy matter, four of resinous matter, and three of earthy, or other indissoluble impurities.

The use of this celebrated medicine, though not known to Hippocrates, can be clearly traced back to Diagoras, who was nearly his contemporary, and its importance has ever since been gradually advanced. Its extensive practical utility however has not long been well understood; and in this country perhaps may be dated from the time of Sydenham. Opium is the chief narcotic now employed: it acts directly upon the nervous power; diminishing the sensibility, irritability, and mobility of the system; suspending, according

[1] Dillenius. [2] Hort. kew. [3] Curtis. [4] Idem. [5] Withering. [6] Woodville. [7] Woodw. Mis. [8] Curtis.

according to the idea of a late ingenious author, the motion of the nervous fluid to and from the brain, and thereby inducing ſleep, one of its principal effects. From this ſedative power of Opium, by which it allays pain, inordinate action, and reſtleſſneſs, it naturally follows, that it may be employed with great advantage in a variety of diſeaſes. Indeed there is ſcarcely any diſorder in which, under ſome circumſtances, its uſe is not found proper; and though in many caſes it fails to procure ſleep, yet if taken in a full doſe, it occaſions a pleaſant tranquillity of mind, and a drowſineſs, approaching to ſleep, which always refreſhes the patient. But, beſides the ſedative power, it is alſo known to act, more or leſs, as a ſtimulant, exciting the motion of the blood; and this increaſed action has been aſcribed ingeniouſly and, as we think, rationally, to that general law of the animal œconomy, by which any noxious influence is reſiſted by a conſequent re-action of the ſyſtem. By a certain conjoined effort of this ſedative and ſtimulant effect, Opium has been thought to produce intoxication, a quality for which it is much uſed in the Eaſtern countries.

In moſt of the continued fevers of this climate, though originating from contagion, or from whatever cauſe, there is generally at the beginning, more or leſs of inflammatory diathesis; and this, while it continues, would forbid the uſe of Opium, which might prove dangerous. Its uſe is alſo forbidden in the more advanced ſtate of this fever, whenever topical inflammation of the brain is aſcertained, which ſometimes exiſts, and produces delirium, though other ſymptoms of the nervous and putrid kind prevail. But when irritation of the brain is not of the inflammatory kind, and debility has made much progreſs, or where delirium is accompanied with ſpaſmodic affections, Opium is a ſovereign remedy, and may be employed in large doſes every eight hours, unleſs a remiſſion of the ſymptoms and ſleep take place. In intermittent fevers Opium, in combination with other medicines, was much uſed by the ancients; but ſince the introduction of Peruvian bark it is ſeldom truſted to for the cure of theſe diſorders: it has however been ſtrongly recommended as an effectual means of ſtopping the recurrence of the febrile paroxyſms; and has been given before the fit, in the cold ſtage, in the hot ſtage, and during the interval, with the beſt effects, producing immediate relief, and in a ſhort time curing the patient, without leaving thoſe abdominal obſtructions which have been aſcribed to the bark; but in theſe fevers, the beſt practice ſeems to be that of uniting Opium with the bark, which enables the ſtomach to bear the latter in larger doſes, and adds conſiderably to its efficacy.

When Opium is ſo managed as to produce ſweat, it will tend to remove an inflammatory ſtate of the ſyſtem, and may prove generally uſeful: a notable inſtance of this we obſerve in the cure of acute rheumatiſm by means of Dover's powder. In the ſmall-pox, Opium, ſince the time of Sydenham, has been very generally and ſucceſsfully preſcribed, eſpecially after the fifth day of the diſeaſe; but during the firſt ſtage of the eruptive fever, we are told that it always does harm; an opinion (ſays Dr. Woodville) which our experience at the ſmall-pox hoſpital warrants us to contradict. In hæmorrhages the uſe of Opium is inferred from its known effects in reſtraining all excretions except that of ſweat; but unleſs the hæmorrhages be of the paſſive kind, or unattended by inflammation, it may produce conſiderable miſchief. In dyſentery, Opium may be occaſionally employed to moderate the violence of the ſymptoms. In diarrhœa, when the acrimony has been carried off by a continuance of the diſeaſe, it is a certain and efficacious remedy. In cholic it is employed with laxatives, and no doubt often prevents inflammation by removing the ſpaſm.

Opium has lately been commended in venereal caſes; and inſtances have been adduced in which it has ſucceeded where mercury had failed: but few practitioners, we apprehend, will truſt to Opium alone in theſe complaints. Opium is ſucceſsfully uſed in tetanus, and in other ſpaſmodic and convulſive caſes.

Reſpecting the external uſe of Opium authors are not agreed; ſome contending, that when applied to the ſkin it allays pain and ſpaſm, and procures ſleep, while others affirm, that when thus applied it has no effect whatſoever. Applied to the naked nerves of animals, it produces torpor, and loſs of power in all the muſcles with which the nerves communicate. Opium taken in an immoderate doſe, proves a narcotic poiſon, producing vertigo, tremors, convulſions, deliriums, ſtupor, ſtertor, and finally, fatal apoplexy.

The officinal preparations of this drug are Opium purificatum, pilula ex opio, pulvis opiatus, tinctura opii, and tinctura opii camphorata. It alſo enters into the pulvis ſudorificus, ballamum anodynum, electuarium japonicum, pulvis e creta compoſita, &c.

The requiſite doſe of Opium varies in different perſons, as well as in different ſtates of the ſame perſons. A quarter of a grain in one adult, will produce effects which ten times the quantity will not do in another; and a doſe that might prove fatal in cholera or cholic, would not be perceptible in many caſes of mania or tetanus. The loweſt *fatal doſe*, to thoſe unaccuſtomed to it, ſeems to be about four grains; but a dangerous doſe is ſo apt to occaſion vomiting, that it has ſeldom time to occaſion death. When given in too ſmall a doſe, it often produces diſturbed ſleep, and other unpleaſant conſequences; and on the other hand, a ſmall doſe will ſometimes produce ſound ſleep, and alleviation of ſymptoms, when a larger one would not have ſucceeded. Its general operation is ſuppoſed to laſt about eight hours. It is well known, that by continued habit, Opium may be taken in large quantities; and we are told by Garcias ab Horto, an inſtance in which it was increaſed to ten drams a day. About twenty drops of the tinctura thebaica, or Laudanum, are conſidered as nearly equivalent to a grain of Opium. Thoſe who are addicted to the uſe of Opium in the Eaſtern regions will ſometimes take incredible quantities.

The White Poppy is commonly conſidered as the officinal plant, but any of the varieties may be employed indiſcriminately, ſince no difference is diſcovered in their ſenſible qualities or effects.

The heads or capſules are alſo powerfully narcotic or anodyne; boiled in water they impart their narcotic juice. The liquor ſtrongly preſſed out, ſuffered to ſettle, clarified with whites of eggs, and evaporated to a due conſiſtence, yields an extract, poſſeſſing the virtues of Opium, but requiring to be given in double the doſe. It is ſaid not to occaſion a nauſea and giddineſs, which are the uſual effects of Opium. It is convenient to prepare the ſyrup from this extract, by diſſolving one dram in two pounds and a half of ſimple ſyrup. The *ſyrupus Papaveris albi*, as directed by both colleges, is an uſeful anodyne, and often ſucceeds in procuring ſleep, where Opium fails. It is more eſpecially adapted to children. White Poppy heads are alſo uſed externally in fomentations, either alone, or more frequently added to the *decoctum pro fomento*.

The ſeeds poſſeſs not any narcotic power: they conſiſt of a ſimple farinaceous matter, united with a bland oil, and in ſome countries are eaten as food. As a medicine they have been given in the form of emulſion, in catarrhs, ſtranguries, &c.

Opium is imported into Europe from Perſia, Arabia, and other warm regions of Aſia. Six hundred thouſand pounds of it are ſaid to be annually exported from the Ganges.

It appears that the Poppy may be cultivated for the purpoſe of obtaining Opium to great advantage in Britain. Profeſſor Alſton, of Edinburgh, ſaid long ſince, that the milky juice, drawn by inciſion from Poppy heads, and thickened either in the ſun or ſhade, even in this country, has alſo the characters of good Opium; its colour, conſiſtence, taſte, ſmell, faculties, phænomena are all the ſame; only, if carefully collected, it is more pure and free from feculencies.

Similar remarks have been made by others; to which, ſays Dr. Woodville, we may add our own; for during that ſummer (probably 1792) we at different times made inciſions in the green capſules of the White Poppy, and collected the juice, which ſoon

acquired a due conſiſtence, and was found, both by its ſenſible qualities and effects, to be very pure Opium. May I be permitted to add, that near fifty years ago, I frequently amuſed myſelf with ſlaſhing the green Poppy heads, and collecting a moſt pure and well digeſted Opium from them.

But the merit of firſt cultivating the Poppy for Opium is due to Mr. John Bull, of Williton, who in the year 1796 was rewarded by the Society of Arts, Manufactures and Commerce, for procuring Opium in an unſophiſticated ſtate from Britiſh Poppies, and communicating his mode of preparing it, to the Society, for the uſe of the public.

When the leaves die away and drop off, the capſules or heads being then in a green ſtate, is the proper time for extracting the Opium, by making four or five ſmall longitudinal inciſions with a ſharp-pointed knife, about an inch long, on one ſide only of the head, taking care not to cut to the ſeeds: immediately on the inciſion being made, a milky fluid will iſſue out, which being of a glutinous nature, will adhere to the bottom of the inciſion; but ſome are ſo luxuriant, that it will drop from the head. The next day, if the weather ſhould be fine, the Opium will be of a grayiſh ſubſtance, and ſome almoſt turning black; it is then to be ſcraped off, with the edge of a knife, into pans or pots; and in a day or two it will be of a proper conſiſtence to make into a maſs, and to be potted.

As ſoon as the Opium is all taken away from one ſide, make inciſions on the oppoſite ſide, and proceed in the ſame manner. The reaſon of not making the inciſions all round at once is, that the Opium cannot ſo conveniently be taken away; but every perſon, upon trial, will be the beſt judge. Children may with eaſe be ſoon taught to make the inciſions, and take off the Opium; ſo that the expenſe will be trifling.

An inſtrument might be made, of a concave form, with four or five pointed lancets, about the twelfth or fourteenth part of an inch, to make the inciſions at once.

Mr. Ball calculates, that ſuppoſing one Poppy to grow in one ſquare foot of earth, and to produce only one grain of Opium, more than 50lb. will be collected from one ſtatute acre. But ſince one Poppy produces from three or four to ten heads, in each of which from ſix to ten inciſions may be made, each inciſion ſometimes producing two or three grains; what muſt be the produce? and what the profit at the preſent price of Opium, 22s. the pound *?

I am ſenſible that great abatements muſt be made in practice from ſuch theoretical calculations as theſe; and that in our moiſt climate many ſeaſons will occur, and many days in almoſt every ſummer, unfavourable to the collection of the Opium. It is however, with all its diſadvantages, a very important object to cultivate the Poppy for this purpoſe in Britain; conſidering the great price of foreign Opium, the increaſing call for it in medicine, the adulteration of what is imported by rice flour and other articles, and the employment that it will find in the collection for women and children.

Mr. Ball adds, that in 1795 from a bed of ſelf-ſown Poppies 576 feet ſquare, he collected four ounces of Opium, though the plants were very thick: and from a few plants that ſtood detached he took from fifteen to thirty-four grains: this ground had been well manured with rotten dung. He remarks that the ſemi-double flowers, and thoſe of a dark colour produced the moſt Opium: that the heads ſhould be about the ſize of a walnut before the inciſions are made; and that the foreign dried Poppy heads are full three times as big as ours †. Mr. Miller remarks alſo that they are of a different ſhape; but the ſize is only owing to climate, and the ſhape indicates no more than a variety.

Mr. Ball collected from one ſemi-double Poppy a quantity which he ſuppoſes to be more than thirty grains; but this plant had twenty-eight heads on it. He prefers the double and ſemi-double flowering plants to thoſe which have ſingle flowers. But I have obſerved that the ſingle Poppy, cultivated by our phyſic-gardeners here for the ſeed and the heads, have generally larger heads than the double Poppies cultivated in gardens.

But after all, the point of moſt importance reſpecting the cultivation of the Poppy for Opium in Britain is, whether its quality be equal to that of foreign Opium. This has been fully aſcertained; not only by a druggiſt in London having agreed with Mr. Ball to give him the ſame price for what he ſhould make in the year 1795, as the foreign drug ſhould bear at that time; but by the teſtimony of ſeveral eminent medical gentlemen in London who tried it, in conſequence of the requeſt of the Society for the Encouragement of Arts, Manufactures and Commerce. Dr. Latham obſerves that in its ſenſible qualities it does not ſeem inferior to any; that it poſſeſſes the excellence of being perfectly clean, which muſt always be an advantage when given in a crude ſtate; and that probably the purified extract of the foreign would not be ſuperior to the Engliſh. Dr. Pearſon alſo reports, that he found the Engliſh Opium to be equally powerful, and to produce the ſame effects as the beſt foreign preparation of this drug. Mr. Wilſon not only found the Engliſh drug equal in point of ſtrength to the beſt extract from foreign Opium; but far ſuperior in flavour, which, in the extract is much injured by the boiling, and free from the impurities which are ſo abundant in crude foreign Opium ‡.

The manner in which this drug is collected in the Eaſt has been deſcribed long ago by Kæmpfer and others; but the moſt circumſtantial detail of it is given by Mr. Kerr, in the fifth volume of Medical Obſervations and Inquiries.

When the capſules are half grown, at ſunſet, they make two longitudinal double inciſions, paſſing from below upwards, and taking care not to penetrate the internal cavity. In Perſia, according to Kæmpfer, a five-pointed knife is uſed for this purpoſe. The inciſions are repeated every evening, until each capſule has received ſix or eight wounds: they are then allowed to ripen their ſeeds. If the wound were to be made in the heat of the day, a cicatrix would be too ſoon formed. The night-dews favour the exſiliation of the juice.

Early in the morning, old women, boys and girls collect the juice, by ſcraping it off with a ſmall iron ſcoop, and depoſit the whole in an earthen pot, where it is worked by the hand in the open ſunſhine, until it becomes of a conſiderable thickneſs. It is then formed into cakes of a globular ſhape, and about four pounds in weight, and laid into little earthen balins to be farther dried. Theſe cakes are then covered over with poppy or tobacco leaves, and thus dried until they are fit for ſale. Opium is frequently adulterated with cow-dung, the extract of the plant procured by boiling, and various other ſubſtances of which they make a ſecret ‖.

The capſules of Papaver Rhoeas, red or corn Poppy, like thoſe of the *ſaminiferum*, contain a milky juice, of a narcotic quality, but the quantity is very inconſiderable, and has not been applied to any medical purpoſe; but an extract prepared from them has been ſucceſsfully employed as a ſedative.

The flowers have ſomewhat of the ſmell of Opium, and a mucilaginous taſte, accompanied with a ſlight degree of bitterneſs. A ſyrup of theſe flowers is directed in the London Pharmacopœia, which has been thought uſeful as an anodyne and pectoral, and is therefore preſcribed in coughs and catarrhal affections. The colour is beautiful, but its virtues as a medicine ſeem to be inconſiderable §.]

8. The ſtalks of the Welch Poppy are a foot high and ſmooth. The pinnas of the leaves are deeply cut on their edges; and there are a few ſmall leaves on the ſtalk ſhaped like the lower ones. The upper part of the ſtalk is naked, and ſuſtains one large yellow flower, appearing in June, and filled with ſmall purpliſh ſeeds.

* Tranſ. Arts, vol. 14. 260 to 263. † Idem, 264.

‡ Tranſ. Arts, 14. 267 to 270. ‖ Woodville, 505.
§ Idem, 513.

[Root-

[Root-leaves on very long hairy petioles, conſiſting of two or three pairs of oval-lanceolate pinnas, deeply cut, almoſt lobed; the terminating one conſiſts of three lobes deeply cut, nearly ſmooth. Stem-leaves ſimilar on ſhort petioles; the upper ones ſeſſile. Pedunculs ſlightly hairy, bearing a ſingle pale-yellow flower, of four ovate petals, ſtriated towards the baſe[a]. Stigmas five or ſix, diſtinct. Capſule oblong, narrower at the baſe, ſomewhat beaked at the top[a].—The deſcriptions of Ray and Moriſon are chiefly tranſlated from Parkinſon. Dillenius gives Bauhin's ſynonym to the *rudicaule*.

Firſt deſcribed and figured by Parkinſon in 1640. He ſays that it grows in many places of Wales, in the valleys and fields, at the foot of the hills, and by the water ſides; about a mile from Abbar, and in the midway from Denbigh to Guider, the houſe of Sir John Guin (Wynne), as alſo near a wooden bridge over the Dee to Balam in North Wales, and in going up the hill that leads to Bangor, as alſo near Angleſea.—On the back of Snowden going from Caernarvon to Llanberris; as you aſcend the Glyder from Llanberris, &c. commonly by rivulets or on moiſt rocks; alſo beyond Pont vawr[a].

Found by Dillenius on Cheddar rocks in Somerſetſhire; and ſince about Kendal, Kirby-Lonſdale, and Winander Mere in Weſtmorland, and Holker in Lancaſhire, by Mr. Woodward and others.

9. Root perennial, compoſed of two or three ſtrong fibres as thick as a man's little finger, a foot and half long, dark brown on the outſide, full of a milky juice, which is very bitter and acrid. Leaves a foot long, cloſely covered with briſtly white hairs. Stems two feet and a half high, very rough and hairy, having leaves towards the lower part like the root-leaves, but ſmaller: the upper part is naked, and ſuſtains at the top one very large flower, of the ſame colour with the common red Poppy.

[Stigmas ſixteen. Briſtles on the ſtem ſcattered, preſſed cloſe, rough with a prominent baſe[a]. Capſule globular, ſmooth, crowned with the large ſhield of the ſtigma, having one cavity in the middle, but towards the periphery divided by incomplete partitions into cells equal in number to the number of rays in the ſtigma, and opening, not by valves, but by as many holes under the ſhield. Seeds very numerous, kidney-form, beautifully marked with longitudinal ſtreaks and little excavations in rows, of a ruſſet-bay colour, covering the incomplete partitions on both ſides[a].]

Found by Tournefort in Armenia, whence he ſent the ſeeds to the royal garden at Paris, where they ſucceeded and were diſtributed to the gardens of Holland and England. It flowers here in may. There are two or three varieties, differing in the colour of the flowers; and it is ſaid that the flower is ſometimes double, with us it is always ſingle. Tournefort ſays that the Turks eat the green heads, although they are very bitter and acrid. [Cultivated before 1714, by Mr. George London[b].]

PROPAGATION AND CULTURE.

All the ſorts of Poppy are propagated by ſeeds, but thoſe which have perennial roots, may be alſo propagated by offſets. The beſt time for ſowing the ſeeds is in September, when they will more certainly grow, and thoſe ſorts which are annual will make larger plants, and flower better, than when they are ſown in the ſpring. The beſt way is to ſow the ſeeds of the annual kinds in the places where they are to remain, and to thin the plants where they are too cloſe; thoſe of the large kinds ſhould not be left nearer to each other than a foot and a half, and the ſmaller ſorts may be allowed about half that ſpace. The culture they will require after this, is only to keep them clean from weeds.

7. Thoſe who are curious to have fine Poppies in their gardens, carefully look over their plants when they begin to flower, and cut up all thoſe plants whoſe flowers are not very double and well marked, before they open their flowers, to prevent their farina mixing with their finer flowers, which would degenerate them; and it is the not being careful of this, that cauſes the flowers to degenerate ſo frequently in many places, which is often ſuppoſed to be occaſioned by the ground.

8. The yellow Welſh Poppy requires a cool ſhady ſituation, where the plants will thrive, and produce plenty of ſeeds annually. If theſe ſeeds are permitted to ſcatter, the plants will come up better than when ſown by hand; but if they are ſown, it ſhould be always in the autumn; for the ſeeds of this, which are ſown in the ſpring, rarely ſucceed.

The beſt time to tranſplant and part the roots of this ſort is in the autumn, that the plants may be well eſtabliſhed in their new quarters, before the dry weather comes on in the ſpring.

9. The eaſtern Poppy will thrive either in ſun or ſhade, for I have ſeveral of theſe plants growing under trees, where they have thriven many years, and flower full as well as thoſe in an open ſituation, but came later in the ſeaſon. This will propagate very faſt by its roots, ſo there is no neceſſity for ſowing the ſeeds, unleſs to procure new varieties. This ſort ſhould be tranſplanted at the ſame ſeaſon as the former; and if the ſeeds are ſown, it ſhould be at the ſame time, for the reaſons before given.

[5. The quantity of Scarlet Poppy, Canker or Redweed in ſome lands is a diſgrace to the farmer, and the briſſiancy of the flowers proclaims his diſgrace to the whole country. Being an annual weed it is eaſily deſtroyed by good huſbandry; but like other oily ſeeds it will lie long in the ground without corrupting. It is ſaid to have vegetated after having been twenty-four years buried.

Swine are frequently turned upon it in Norfolk; and they will eat out this troubleſome weed, with little or no damage to the wheat[b]. Others feed firſt with ſheep, then with cattle; till april, taking them off when it rains much, if the land is not very light.

Upon dry ſoils, which are moſt ſubject to Poppy, Mr. Elliman of Shoreham, ploughs his tare and rape land for wheat, the beginning or middle of ſeptember, in order to ſow the middle of octoober; the harrowing kills the Poppy; and in putting in the ſeed, he likes to tread much with oxen or ſheep. A neighbour treads his with oxen in march, which he thinks better againſt the Poppy, than doing it at ſowing[c].—This treading may deſtroy the preſent crop of Poppy; but the hoard of ſeed remains in the ground to come up on every ploughing. The only way to deſtroy ſuch weeds effectually, is to make them germinate, by bringing them near the ſurface, and then to cut and tear them with the plough, the ſkim, the ſcuffler, or the harrow, according to circumſtances.

7. Mr. Ball adviſes the ſeed of *Papaver ſomniferum*, officinal or garden Poppy to be ſown at the end of february, and again the ſecond week in march, in beds three feet and a half wide, well prepared with good rotten dung, and often turned or ploughed, in order to mix it well, and have it fine, either in ſmall drills, three in each bed, or broadcaſt; in both caſes, thinning out the plants to the diſtance of a foot from each other, when about two inches high: keep them free from weeds, and they will grow well, produce from four to ten heads, and ſhow large flowers of different colours. With an inſtrument ſomething like a rake, but with three teeth, the drills may be made at once. Poppies do not bear tranſplanting: out of four thouſand which Mr. Ball tranſplanted, not one plant came to perfection[d].

The culture as practiſed in the province of Bahar is as follows. The field being well prepared by the plough and harrow, and reduced to an exact level ſurface, it is then divided into quadrangular areæ, ſeven feet in length, and five in breadth, leaving two feet of interval, which is raiſed five or ſix inches, and hollowed out for conveying water to every area, for which purpoſe they have a well in every cultivated field. The ſeeds are ſown in octoober or november. The plants are allowed to grow ſix or eight inches

[a] Woodw. Mſs. [b] Linn. [c] Ray's ſyn. [d] Linn. [e] Gærtner. [f] Hort. kew.

[a] Marſhall's Norfolk. 1. 226. [b] Young's ann. 17. 143. [c] Tranſ. arts, 259.

diſtant

diſtant from each other, and are plentifully ſupplied with water. When the young plants are ſix or eight inches high they are watered more ſparingly; but a compoſt of aſhes, human excrement, cow-dung, and a portion of nitrous earth ſcraped from the high-ways and old mud walls, is ſtrewed all over the beds. When the plants are near flowering, they are watered profuſely to increaſe the juice. The capſules being half grown, and fit to collect Opium from, the plants are no longer watered *.

PAPAVER CORNICULATUM [and CORNUTUM. See *Chelidonium*, and *Cleome*.

——— SPUMEUM. See *Cucubalus*.]

——— SPINOSUM. See *Argemone*.

[PAPAW-TREE,] PAPAYA, [and PAPAYA-MARAM.] See *Carica*.

[PAPIA. See *Lamium*.

PAPIRIA. See *Gethyllis*.

PAPPOPHORUM. (*From* παππος, *and* φερω. *The awns of this graſs reſembling the capillary down of the ſeed in Syngeneſious plants.*)

Lin. gen. Schreb. n. 1715. *p.* 787.

Claſſ. 3. 2. Triandria Digynia.

Nat. order of *Gramina*, *Graminea* or *Groſſes*.

GENERIC CHARACTER.

CAL. *Glume* two-flowered, two-valved: *valves* long, linear, ſomewhat compreſſed, very thin, acuminate, awnleſs: outer a little ſhorter. One floret inferior, larger, ſeſſile, bearded at the baſe, hermaphrodite: the other ſuperior, leſs, on a ſhort pedicel, preſſed cloſe to the back of the lower one, beardleſs, neuter: and above this, the rudiment of a third.

COR. *Glume* two-valved, ſhorter than the calyx: outer valve ovate, ventricoſe, angular, terminated by ſeveral awns (thirteen or fourteen), very long, ſtraight, unequal, ſpreading, with its edges embracing the inner valve, which is lanceolate, acute, a little longer and narrower than the outer.

Nectary two-leaved, very ſmall, with linear leaflets.

STAM. *Filaments* three, capillary. *Anthers* oblong.

PIST. *Germ* ovate. *Styles* two, ſhort. *Stigmas* villoſe.

PER. none. *Corolla* incloſes the ſeed, and lets it drop.

SEED one, ovate, compreſſed, diaphanous.

OBS. *The outer glume of the lower floret is villoſe at the back and ſides: the inner is excavated at the back, to receive the upper floret.*

ESSENTIAL CHARACTER.

Cal. two-valved, two-flowered. *Cor.* two-valved, many-awned.

SPECIES.

1. Pappophorum alopecuroideum.

Lin. ſpec. ed. Willd. 458. *Vahl ſymb.* 3. 10. *t.* 51.

DESCRIPTION, *&c.*

Culm branched, three or four feet high, ſmooth, ſheathed with leaves, which are convoluted, awl-ſhaped, ſtriated, ſhorter than the culm; the laſt ſpathaceous. Panicle erect, ſubſpiked, often a foot and half long, reſembling *Alopecurus monſpeliacus*. Calyx three or four-flowered.—Found by von Rohr at Spaniſh Town in America †.

PAPYRUS. See *Cyperus*.

PARAGUA. See *Ilex*.

PARALIAS. See *Euphorbia*.

PARDALIANCHES. See *Doronicum*.

PAREIRA. See *Ciſſampelos*.

PARELLE D'AUVERGNE and PARELLUS. See *Lichen*.

PARIANA. (*The flowers growing in* pairs *on the ſpike, ſeem to have ſuggeſted the generic name.*)

Lin. gen. Schreb. n. 1455. *Aubl. t.* 337. *Juſſ.* 34.

Claſſ. 21. 7. Monoecia Polyandria.

GENERIC CHARACTER.

* *Male flowers in whorls, digeſted into ſpikes.*

CAL. *Glume* one-flowered, two-valved: *valves* ſhort, acute.

COR. two-valved, larger than the calyx: *valves* ovate, acute, one narrower.

STAM. *Filaments* about forty, capillary, inſerted into the bottom of the corolla. *Anthers* linear.

* Kerr in med. obſ. vol. 5. and Woodv. 505. † Vahl.

* *Female flower ſolitary in each whorl, faſtened to the axis of the ſpike.*

CAL. *Glume* two-valved: *valves* ovate, concave, acute.

COR. two-valved, leſs than the calyx: *valves* acute, hairy at the tip.

PIST. *Germ* three-cornered. *Style* long, hairy. *Stigmas* two, villoſe.

PER. none. *Corolla* inveſting the ſeed.

SEED one, three-cornered, incloſed.

ESSENTIAL CHARACTER.

MALE flowers in whorls, forming ſpikes. *Cal.* two-valved. *Cor.* two-valved, larger than the calyx. *Filaments* forty.

FEM. flowers ſolitary in each whorl. *Cal.* two-valved. *Cor.* two-valved, leſs than the calyx. *Stigmas* two. *Seed* three-cornered, incloſed.

SPECIES.

1. Pariana campeſtris.

Aubl. pl. gui. p. 877. *Lin. ſyſt. Gmel. p.* 828.

DESCRIPTION, *&c.*

This plant puts forth ſeveral ſtraight ſhoots or canes about one or two feet high. At each joint they are garniſhed with alternate, oval, weak leaves, ſtriated throughout their whole length, ſmooth, gloſſy, greeniſh above, paler beneath: the footſtalks are ſhort, and accompanied by a long ſplit ſheath in oppoſite directions on each ſide the ſtalk. This ſheath envelopes the ſtem from one joint to the other. It is crowned with reddiſh, long, and roughiſh hairs: this crown has on each ſide two appendices in the form of an ear, bordered on both ſides with ſimilar hairs. The ſtem is terminated by a ſerrated ſpike, formed of ſeveral ranges of male flowers growing above each other. The female flower is ſingle in the middle of each range. The ſpike of flowers is about two inches and a half in length.

This plant grows in woods in the iſle of Cayenne.]

PARIETARIA. (*From its place of growth*, Paries, *a wall.*)

Lin. gen. n. 1152. *Reich. n.* 1259. *Schreb. n.* 1576. *Tournef. t.* 289. *Juſſ.* 404. *Gærtn. t.* 119.

Claſſ. 23. 1. Polygamia Monoecia.

Nat. order of *Scabridæ*. *Urticæ*, Juſſ.

GENERIC CHARACTER.

* *Hermaphrodite flowers* two, are contained in a flat ſix-leaved involucre: the two oppoſite and outer *leaflets* larger.

CAL. *Perianth* one-leafed, four-cleft, flat, blunt, the ſize of the involucre halved.

COR. none, unleſs the calyx be called ſo.

STAM. *Filaments* four, awl-ſhaped, longer than the flowering perianth and expanding it, permanent. *Anthers* twin.

PIST. *Germ* ovate. *Style* filiform, coloured. *Stigma* pencilform, capitate.

PER. none. *Perianth* elongated, larger, bell-ſhaped, the mouth cloſed by converging ſegments.

SEED one, ovate.

* *Female flower* one, between the two hermaphrodites, within the involucre.

CAL. as in the hermaphrodites.

COR. none.

PIST. as in the hermaphrodites.

PER. none. *Perianth* thin, involving the fruit.

SEED as in the hermaphrodites.

ESSENTIAL CHARACTER.

Two hermaphrodite flowers and one female flower in a flat ſix-leaved involucre.

Cal. four-cleft. *Cor.* none. *Style* one. *Seed* one, ſuperior elongated.

HERM. *Stam.* four.

FEM. *Stam.* none.

SPECIES.

[1. Parietaria indica. *Indian Pellitory.*

Lin. ſyſt. 908. *Reich.* 4. 321. *mant.* 128.

Cratæogonum. *Rumph. amb. t.* 10. *f.* 1.

Leaves lanceolate, ſtem erect.]

2. Parietaria officinalis. *Common Pellitory.*

Lin. ſpec. 1492. *ſyſt.* 908. *Reich.* 4. 321. *hort. cliff.* 496. *upſ.* 302. *mat. med.* 220. *Woodv. med. bot.* 384. *t.* 142. *Hudſ. angl.* 422. *Wither. arr. ed.* 3. 201. *Curt. lond.* 4. 63. 233. *Lightf. ſcot.*

634. *Relh. cant. n.* 740. *Sibth. oxon. n.* 196. *Hall. helv. n.* 1612. *Fl. dan. t.* 521. *Scop. carn. n.* 1242. *Neck. gallob.* 418. *Pollich pal. n.* 940. *Villars dauph.* 2. 345. *Allion. pedem. n.* 2028. *Ludw. eff. t.* 115. *Kniph. cent.* 4. *n.* 60. *Regn. bot.*

P. officinarum & Dioſcoridis. *Bauh. pin.* 121. *Mor. hiſt. ſ.* 5. *t.* 30. *f.* 1.

Parietaria. *Ded. pempt.* 102. *Bauh. hiſt.* 2. 976. 2. *Ger.* 261. *emac.* 331. *Raii hiſt.* 206. *ſyn.* 158. *Petiv. brit. t.* 8. *f.* 1.—Vulgaris. *Park. theat.* 437.—& major. *Trag.* 193.

P. Helxine. *Tabern.* 550. *Blackw. t.* 136.

Helxine. *Camer. epit.* 849. *Fuchſ.* 277. *Matth.* 1113. *Lob. obſ.* 130. *ic.* 1. 258. 1.

Leaves lanceolate-ovate, peduncles dichotomous, calyxes two-leaved.

3. Parietaria judaica. *Baſil-leaved Pellitory.*
Lin. ſpec. 1492. *ſyſt.* 908. *Reich.* 4. 321. *Gærtn. fruct.* 2. 184. *Hall. helv. n.* 1613. *Villars dauph.* 2. 346. *Kniph. cent.* 11. *n.* 83.

P. ocynis folio Tragi. *Boce. ſic.* 47. *t.* 24. *f.* A.

Leaves ovate, ſtems erect, calyxes three-flowered, corollas male elongated-cylindrical.

[4. Parietaria luſitanica. *Chickweed-leaved Pellitory.*
Lin. ſpec. 1492. *ſyſt.* 909. *Reich.* 4. 322.

P. luſitanica annua minima. *Tournef. inſt.* 509. *Raii ſuppl.* 129.

P. ſicula alſines folio. *Boce. ſic.* 47. *t.* 24. *f.* B. *Raii hiſt.* 206.

Leaves ovate obtuſe, ſtems filiform ſtriated even procumbent.

5. Parietaria urticæfolia. *Nettle-leaved Pellitory.*
Lin. ſyſt. 909. *ſuppl.* 434.

Leaves ovate oppoſite petioled ſerrate veined pubeſcent, flowers axillary.

6. Parietaria cretica. *Cretan Pellitory.*
Lin. ſpec. 1492. *Reich.* 4. 322.

P. cretica minor capſulis ſeminum alatis. *Tournef. cor.* 38.

Leaves ſubovate, fruiting involucres five-cleft compreſſed, lateral ſegments larger.

7. Parietaria capenſis. *Cape Pellitory.*
Thunb. prodr. cap. 31.

Leaves oppoſite ovate ſerrate, branches diffuſed, flowers ſeſſile.

8. Parietaria debilis.
Forſt. ſtor. auſtral. prodr. n. 387.

Leaves alternate ovate petioled quite entire ſomewhat hairy, peduncles axillary ſubtriflorous, ſtem almoſt upright.

9. Parietaria cochinchinenſis.
Lour. cochinch. 654.

Leaves ovate three-nerved hairy, ſtems cæſpitoſe diffuſed, flowers monoecous.

10. Parietaria arborea. *Tree Pellitory.*
L'Herit. in journ. de Rozier, 33. *p.* 55. *Ait. hort. kew.* 3. 429.

Urtica arborea. *Linn. ſuppl.* 417. *L'Herit. ſtirp. nov.* 39. *t.* 20.

Leaves elliptic acuminate, ſomewhat triple-nerved, ſtem arboreous.

DESCRIPTIONS, *&c.*

1. This reſembles our common Pellitory, but is more naked. Leaves lanceolate, drawn out to a much longer point, three-nerved, naked. The balls of flowers are ſmaller, except the bractes, which are awl-ſhaped not ovate. Styles longer. Fruits ſeſſile, grooved.—Native of the Eaſt Indies[a].

2. Root perennial, ſomewhat woody, red, fibrous; according to Lightfoot, creeping. Stems ſeveral, nearly upright, from nine inches to a foot or more in height, very much branched, round, ſtriated, ſolid, reddiſh, pubeſcent; according to Lightfoot, rough to the touch and adheſive. Leaves alternate, ovate, pointed, tapering towards each extremity, entire at the edge, ſpreading, pubeſcent along the edge and on the veins of the under ſide, on the upper ſide deep green, ſhining, ſomewhat wrinkled, and having ſmall prominent points ſcattered over it. Petioles nearly as long as the leaf is broad, pubeſcent, channelled above. Flowers ſmall, greeniſh, rough, ſeſſile, growing in balls or cluſters in the axils of the leaves; two hermaphrodites and one female in an involucre of ſeven leaves (ſix only, according to Linneus), permanent; the leaves ovate, pointed, flat, hirſute, the hairs glandular at the extremities. The hermaphrodite flowers may be diſtinguiſhed by the four ſtamens, which on the ſhedding of the pollen fly back with elaſtic force; the filaments are white and wrinkled tranſverſely; the anthers ovate, obtuſe, double; with a white pollen. Germ green, ſhining, naked; ſtigma forming a bright ſcarlet ruſt. The female is known by its ſituation between the two others, and by its want of ſtamens: the ſtigma is ſomewhat larger, and bent a little down.

To obtain a perfect idea of the manner in which the fructification is carried on, in this plant, the flowers ſhould be examined at a very early period of their expanſion; we ſhall then find in each involucre three red ſtigmas, the two outermoſt of which belong to hermaphrodite flowers, whoſe ſtamens are not yet viſible; the middle one, which is largeſt and moſt conſpicuous, to the female. If a view be taken of the ſame flowers at the time that the elaſtic filaments by their ſudden expanſion are ſcattering the pollen, the ſtyles and ſtigmas of the hermaphrodite flowers, viſible before, will often be found wanting, and the germ left naked in the centre of the flower: at this period, the ſegments of the calyx in the ſame flowers are nearly of the ſame length as the filaments, the ſtyle and ſtigma of the female flower remain perfect, and the germ is cloſely ſurrounded by a green hairy calyx, which never expands: the period of flowering being now over, a conſiderable alteration takes place in the calyx of the hermaphrodite flowers, each is conſiderably elongated, becomes more tubular, aſſumes a redder colour, has its tip preſſed down, and ſoon drops out of the involucre, in which it leaves no appearance of a ſeed; but on opening them, a ſeed will be found at the bottom of each, perfectly ſimilar to that produced by, and incloſed in the calyx of the female flower, which does not enlarge as the other does, but partaking more the nature of a capſule, on preſſure, divides at top into four parts, and contains a blackiſh, ſhining ſeed.

The manner in which the flowers ſhed their pollen is curious. The filaments, on their firſt appearance, all bend inwards; as ſoon as the pollen is arrived at a proper ſtate to be diſcharged, the warmth of the ſun, or the leaſt touch from the point of a pin, will make them inſtantly fly back, and diſcharge a little cloud of duſt. This proceſs is beſt ſeen in a morning, when the ſun ſhines on the plant in july or auguſt: if the plant be large, numbers will be ſeen exploding at the ſame inſtant[a].

Mr. Miller is ſingular in aſſerting that the Parietaria officinalis of Linneus] grows naturally in Germany and Holland, but was not in England till the year 1727, when he introduced it. [He makes our plant to be the *P. judaica* of Linneus, and the *P. minor ocimi folio* of Caſpar Bauhin. In this opinion, ſays Mr. Curtis, there is the greateſt reaſon to ſuppoſe that Mr. Miller is deceived.—It frequently happens that the plant which is common in one country is ſuppoſed to be the common plant of other countries, without examination. I do not know that it is the caſe in this inſtance. The figures of Dodonæus and Matthiolus, from which thoſe of Ger. emac. and Parkinſon are copied, are much fuller of leaves than our plant, and the ſtem is repreſented with ſtiff hairs ſtanding out. The deſcription of Pollich agrees very well with our plant, except that I do not remember the leaves to be ſo large as he deſcribes them, namely two inches and a half; but then he includes the petiole, which is more than half an inch long.

Parietary, corrupted into Pellitory, is abſurdly called Pellitory of the wall, being found on walls or among rubbiſh. It is a native of moſt parts of Europe, except the moſt northerly; in Sweden it is not found,

[a] Linn. mant.

[a] Curtis.

but it is in Denmark. Mr. Curtis remarks, that the ſame degree of cold (about 31° of Fahrenheit's thermometer) which ſtripped the Mulberry of moſt of its leaves, deſtroyed the greateſt part of the herbage of this plant.—In the autumn of 1798, Fahrenheit's thermometer being at 46° (in the houſe) on October the 13th the leaves of Mulberry, Walnut and Aſh were completely fetched off by froſt, and the herbage of Balm of Gilead cut down to the ground.

Parietary promiſes little from its ſenſible qualities: it has no ſmell, and its taſte is ſimply herbaceous. Formerly it was accounted emollient, but not being mucilaginous, this effect ought rather to be aſcribed to the warm water. Its character as a diuretic is better known. Matthiolus tells us, that the expreſſed juice, ſweetened with ſugar, had a very powerful effect in this way: and Barbeirac informs us, that a decoction of this plant, and Uva urſi, was found of great uſe in clearing the urinary paſſages of viſcid mucus, and ſabulous concretions [a]. Mr. Sole, of Bath, has obſerved remarkably good effects from the juice of this herb in dropſical caſes, in which other diuretics had failed; he converts the juice into a thin ſyrup, and gives two table ſpoonfuls thrice a day [b].

Tournefort, in his hiſtory of plants about Paris, ſays that the ſyrup gives great relief in hydropic caſes.

Dr. Stokes ſays, he has been informed, that this herb, as well as *Nitraria*, contains a conſiderable quantity of nitre; and that in making an extract from it, the maſs has taken fire.

It is recommended by Bradley to be laid on corn in granaries, for the purpoſe of driving away the weevil.]

3. This differs from the former in having ſhorter ſtalks, and ſmaller oval leaves. The flowers are alſo leſs, and in ſmaller cluſters. In other reſpects they are the ſame.

[The little balls of flowers are on the branches, ſcarcely any on the ſtem. There are two male flowers, which are tubular, cylindrical, with the teeth of the mouth converging. The female flower between them is ovate [c].

According to Gærtner there are two hermaphrodite flowers and one female flower within a ſix-leaved involucre. The calyx when ripe is cloſed, looſely embracing and concealing the ſeed. Receptacle none, except a very ſmall tubercle at the baſe of the ſeed, by which it is connected with the bottom of the calyx, as by a pedicel. Seed ovate, narrowing upwards, compreſſed like a lens, ſmooth, ſhining, dark, having a little white umbilical papilla at the baſe.

Ray believes Parietaria minor Ocimi folio *Bauh. pin.* and Parietaria exigua of Tragus, to be nothing more than a variety of the preceding: but in his Supplement he ſeems to think them different [d].

Native of Switzerland, the South of France, Sicily, Germany about Goettingen, and of Paleſtine.

4. Boccone ſays, that this differs from that of Tragus, and from the common ſort of Matthiolus only in the leaves, which are much ſmaller, the form and ſize of Chickweed: but Tournefort ſays it is an annual plant, and the ſame with his *Par. luſitanica*, which he found in Portugal, near Lamego upon the Douro.

Ray informs us, that in a ſpecimen of the Portugueze plant ſhown him by Sherard, the leaves were ſhorter in proportion to their ſize and rounder than in the common ſort. He found the Sicilian plants in ſeveral parts of Sicily; but does not ſeem to have been aware that they were the ſame. Boccone ſays it is very common in that iſland.

In the Kew catalogue it is ſaid to be a native of Spain and Portugal, without any mention of Sicily; to have been introduced in 1771, by Monſ. Richard; and to flower in july.

5. This is a very branching plant, with ſmall leaves, much reſembling thoſe of the Nettle.—Found by Monſ. Thouin in the iſle of Bourbon [e].

6. Found by Tournefort in the iſland of Crete or Candia.

7. Found at the Cape of Good Hope by Thunberg.

8. Native of New Zealand.

9. Stem herbaceous, perennial, a foot and half high, manifold, ſlender. Leaves acute, quite entire, ſmall, oppoſite, having ſmaller ones mixed with them. Flowers axillary in whorls, in ſmall cluſters or balls, male and female together without any hermaphrodites. Seed roundiſh, incloſed within the converging calyx.

Native of China and Cochinchina. It attracts the worms that infeſt ſalted fiſh or fleſh; the natives hang the plant at the mouth of their caſks, and the inſects get into it of their own accord. It is alſo eſteemed by them to be emollient, refrigerant and diuretic.

10. This is an upright ſoft ſhrub, the height of a man. Root woody, branched, fibrous, rufeſcent. Stem woody, upright, round, the bark full of chinks, aſh-coloured. Branches and branchlets alternate, ſpreading, villoſe, pithy. Shoots red, very villoſe with hoary hairs. Leaves alternate, ſpreading, entire, nerved, three-nerved above the baſe, veined: nerves and veins prominent underneath, grooved above, ſomewhat wrinkled, the younger ones very much ſo, underneath villoſe ſoft, above bright green, ſcarcely paler beneath, from four to ſix inches long, and from two to four inches wide. Petioles cylindrical, one-ſtreaked, red, very villoſe, longer than half the leaf. Panicle terminating, erect, compoſed of ſimple ſpikes, leafy, hoary-villoſe, three inches long. Spikes axillary, erect, ſeſſile, ſolitary, bracted, villoſe. Flowers commonly three, cluſtered, from the axil of each bracte, ſeſſile, in the male yellow, in the female red herbaceous. Bracte linear-lanceolate, acute, villoſe, longer than the flowers, eſpecially in the female. According to L'Heritier, the male and female flowers are on different plants. What he calls males are imperfect hermaphrodites. In theſe, he ſays, the perianth is ſix-parted; in the female, ſix or ſeven-leaved, or one-leafed cloven into ſo many parts; the germ between two nectaries, which are two roundiſh-four-cornered bodies, very ſhortly acuminate, oppoſite by the ſide of the germ, and without obſerving accurately might be taken for germs [f]: (and probably are ſo, if we may conjecture from analogy.)

Native of the Canary iſlands, where it was found by Maſſon. Introduced in 1779. It flowers from february to may [g]. L'Heritier ſays, in autumn or early in ſpring; that the male flowered at Kew, and the female at Paris. He firſt made it an Urtica, but afterwards removed it into this genus.]

PROPAGATION AND CULTURE.

The common European Pellitories may be propagated in plenty from the ſeeds. If theſe be permitted to ſcatter they will fill the ground with young plants. They are difficult to collect, being thrown out of their covers as ſoon as ripe. Having little beauty, theſe plants are ſeldom cultivated.

[10. Tree Pellitory may be increaſed by cuttings, and muſt have the protection of the green-houſe: as muſt alſo the ſeventh. The firſt, fifth, eighth and ninth muſt be kept in the ſtove.

PARIETARIA. See *Dorſtenia*, *Melampyrum*, *Urtica*.

——— ZEYLANICA & MICROPHYLLA. See *Urtica*.

PARIETARIÆ AFFINIS. See *Theligonum*.

PARILIUM. See *Nyctanthes*.

PARINARI. See *Petrocarya*.]

PARIS.

Lin. gen. n. 500. *Reich. n.* 542. *Schreb. n.* 683. *Juſſ.* 42. Herba Paris. *Tournef. t.* 177.

Claſſ. 8. 4. Octandria Tetragynia.

Nat. order of *Sarmentaceæ. Aſparagi*, *Juſſ.*

GENERIC CHARACTER.

CAL. *Perianth* four-leaved, permanent: *leaflets* lanceolate, acute, the ſize of the corolla, ſpreading.

COR. *Petals* four, ſpreading, awl-ſhaped, (linear, *G.*) like the calyx, permanent.

STAM. *Filaments* eight, awl-ſhaped, below the anthers ſhort. *Anthers* long, faſtened on both ſides to the middle of the filaments.

[a] Woodville. [b] Curtis. [c] Linn. ſyſt. [d] Linn. ſuppl. [e] L'Heritier, ſtirp. nov. [f] Hort. kew. [g]

PIST. *Germ* superior, round-four-cornered, (or ſubglobular.) *Styles* four, ſpreading, ſhorter than the ſtamens. *Stigmas* ſimple.
PER. *Berry* globular-four-cornered, four-celled.
SEEDS ſeveral, incumbent in a double row.

ESSENTIAL CHARACTER.

Cal. four-leaved. *Pet.* four narrower. *Berry* four-celled.

SPECIES.

1. Paris quadrifolia. *Herb Paris, True-love* or *One-berry. Lin. ſpec.* 526. *ſyſt.* 381. *Reich.* 2. 221. *Fl. lapp. n.* 155. *ſuec. n.* 346. *hort. cliff.* 153. *Hudſ. angl.* 172. *Wither. arr. ed.* 3. 385. *Engl. bot. t.* 7. *Lightf. ſcot.* 209. *Relh. cant. n.* 311. *Sibth. oxon. n.* 389. *Hall. helv. n.* 1006. *Gmel. ſib.* 4. 176. *Willich illuſtr.* 35. *Neck. gallob.* 188. *Scop. carn. n.* 472. *Pollich pal. n.* 389. *Fl. dan. t.* 139. *Villars dauph.* 3. 526. *Allion. pedem. n.* 1025. *Krock. ſilef. n.* 615. *Thunb. jap.* 171. *Blackw. t.* 286. *Kniph. cent.* 12. *n.* 73. *Plenck, ic.* 311. *Regn. bot.*
Herba Paris. *Matth.* 1093. *Bauh. hiſt.* 3. 613. *Ger.* 328. 1. *emac.* 405. 1. *Park. theat.* 390. 1. *Dod. pempt.* 444. *Raii hiſt.* 670. *ſyn.* 264. *Petiv. brit. t.* 44. *f.* 8.
Solanum quadrifolium baccifèrum. *Baub. pin.* 167.
Solano congener non ramoſum tetraphyllum. *Mor. hiſt. ſ.* 13. *t.* 3. *f.* 6.
Aconitum ſalutiferum. *Tabern. hiſt.* 720.
A. pardalianches. *Fuchſ. hiſt.* 87.

DESCRIPTION, *&c.*

[Few plants are more readily diſtinguiſhed than this, by the proportion and regularity of all the parts. Stalk quite ſimple or unbranched, upright, ſmooth, round, naked. Leaves four, in a croſs, or a ſort of whorl, ſpreading, ſeſſile at the top of the ſtalk, ovate, quite entire, drawn to a point, ſmooth, nerved underneath, three or four inches long, and two wide. Peduncle ſingle, riſing from the middle of the four leaves, ſomewhat angular, about an inch in length, ſupporting one greeniſh flower, an inch in diameter. Calycine leaflets four, linear-lanceolate, acute, reflex. Petals alſo four, very narrow, reflex, a little ſhorter than the calyx. Stamens eight. Anthers in the middle of the filament. Styles four, three times ſhorter than the ſtamens[s]: hardly ſo long as the berry, purpliſh black[t]. Berry one, black, large, flatted at top, obſcurely four-grooved, ſmooth, juicy, and containing in each cell ſix or eight ſeeds. Root perennial, fleſhy.

The regular number in this plant is four, or ſome aliquot part or multiple of that number. There are however ſometimes only three leaves, and they are even ſaid to vary from one to ſeven. The calyx alſo has ſometimes three leaves.

The leaves and berries are ſaid to partake of the properties of Opium; and the juice of the latter to be uſeful in inflammations of the eyes. Linneus ſays the root will vomit as well as Ipecacuanha, given in a double quantity[u].

This is a ſuſpicious plant, which has nevertheleſs been uſed in medicine. Bergius recommends the herb for diſcuſſing buboes and other inflammatory tumours, in the whooping or convulſive cough, &c. Geſner experienced it to be an antidote to the poiſon of the Nux vomica. Having given a ſcruple of it to two dogs, he gave one a dram of the Paris, and it recovered; the other died. He alſo took a dram of the herb himſelf, without any effect except a dryneſs in the fauces, and ſome ſweat. Burghard on the contrary ſays, that cardialgia and vomiting enſues from the uſe of it; and Krocker was credibly informed, that a child died by eating the berries, and that another was recovered with difficulty. Geſner affirms that the berries are baneful to poultry. It ought therefore to be given with great caution. One ſcruple is given twice a day.

Herb Paris is a native of moſt countries of Europe, particularly the northern parts; and alſo of Japan. In Britain it is not uncommon, in woods, eſpecially thoſe which are thick, and on ſtrong ſoil. Gerarde ſays, it grows plentifully in Chalkney-wood, near Wakes Colne in Eſſex, in the parſonage orchard at Radwinter, and in Bocking-park by Braintree in the ſame county; in the wood near Robin Hood's well, near Nottingham; in the moor by Canterbury, called the Clapper; in Blackburne at Merton in Lancaſhire; in Dingley-wood, ſix miles from Preſton in Aunderneſſe; at Heſſet in Lancaſhire; and in Cotting-wood in the North of England, as that excellent, painful, and diligent phyſician Mr. Doctor Turner, of late memory, doth record in his Herbal.

Parkinſon, in 1640, ſays it was then loſt in the above places, "every one running thereunto, that is next him, and gathering it." He informs us that it was found in his time in Hinbury-wood, three miles from Maidſtone in Kent, in a wood called Harwarſh, near Pinnenden-heath, by Maidſtone, in Long-wood by Chiſelhurſt, and in the next called Iſeets-wood, and in a wood over againſt Boxly-abbey near Maidſtone.

Mr. Newton found it in the long Spring by Petſebogs at Chiſelhurſt; and Mr. Ray in Lampit-grove, at Notley, Eſſex.

Mr. Charles Miller diſcovered it in a little wood, not far from Hampſtead, and yet Mr. Curtis has not introduced this curious plant in his valuable Flora Londinenſis. Mr. Blackſtone, in Hanging-wood, near Harefield, Middleſex. Mr. Abbot at Hawnes, Renhold and Clapham, Park-wood in Bedfordſhire. In Kingſton, Everſden, and Wood-Ditton woods, Cambridgeſhire. In Love-lane near Derby, by Mr. Whately. At Selborne in Hampſhire by Mr. White. Ripton-wood in Huntingdonſhire by Mr. Woodward. Byfeing-wood, in Kent. In Hollinghall, Stocking and Okeley-wood in Leiceſterſhire, by Dr. Pulteney. Norfolk, by Mr. Woodward, but rare. In Brampton, Cranſley and Hardwick woods, and Whittleborough-foreſt, in Northamptonſhire, by Morton. In Aſply and Colwick woods, Nottinghamſhire, by Deering. In Headington-Wick-copſe, Oxfordſhire, by Dr. Sibthorp. In the wood near the Devil's Den near Cliſton upon Teme, woods on the ſides of Breedon-hill, and about Frankly, in Worceſterſhire. Near Gainford and in Raby-park, by Mr. Robſon. In Scotland, in a wood a mile to the ſouth of Newbottle, near Dalkeith, by Dr. Parſons. In the Den of Bethaick, four miles from Perth, by Mr. Lightfoot. In the wood of Methven, Perthſhire, by Mr. Millar. It flowers in may.]

PROPAGATION AND CULTURE.

This plant is with great difficulty preſerved in gardens. Take up the plants from the places where they grow wild, preſerving good balls of earth to their roots, and plant them in a ſhady moiſt border, where they may remain undiſturbed.

[PARIS. See *Trillium.*
PARITI. See *Hibiſcus.*
PARIVOA. See *Dimorpha.*]
PARKINSONIA. (*So named by Plumier, in memory of John Parkinſon, Apothecary, of London, author of* Paradiſus terreſtris, 1629, *and* Theatrum Botanicum, 1640.)

Lin. gen. n. 513. *Reich. n.* 556. *Schreb. n.* 699. *Plum.* 3. *Jacqu. amer.* 121. *Juſſ.* 347.

Claſſ. 10. 1. Decandria Monogynia.
Nat. order of *Lomentaceæ. Leguminoſæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed; at the baſe bell-ſhaped flattiſh, permanent: *border* five-parted: *ſegments* lanceolate-ovate, acute, coloured, reflex, almoſt equal, deciduous.
COR. *Petals* five, with claws, almoſt equal, ſpreading very much, ovate; the loweſt kidney-form; claw upright, very long.
STAM. *Filaments* ten, awl-ſhaped, villoſe below, declined. *Anthers* oblong, incumbent.
PIST. *Germ* round, long, declined. *Style* filiform, riſing, the length of the ſtamens. *Stigma* blunt.
PER. *Legume* very long, round, ſwelling over the ſeeds, (whence it is necklace-form) acuminate.
SEEDS ſeveral, one to each joint of the legume, oblong, ſubcylindric, blunt.

ESSENTIAL

[s] Lyons Mſs. in Relh. cant. [t] Withering. [u] Idem.

ESSENTIAL CHARACTER.

Cal. five-cleft. *Pet.* five, ovate; the lowest kidney-form. *Style* none. *Legume* necklace-form.

SPECIES.

Parkinsonia aculeata. *Prickly Parkinsonia.*
Lin. syst. 392. *Reich.* 2. 248. *hort. cliff.* 157. *t.* 13. *upf.* 99. *Swartz obf.* 155. *Jacqu. amer.* 121. *t.* 80. *pict.* 62. *t.* 119. *Brown. jam.* 222. *Plum. gen.* 25. *Walth. hort.* 6. *t.* 13.

DESCRIPTION, *&c.*

[This is a small tree, with a trunk ten or twelve feet high, unarmed, even: branches long, subdivided, flexuose, prickly, ſtrict. Prickles two oppoſite at the ſides of the petioles, one between them three times as long as the others, awl-ſhaped, upright. Leaves alternate, in fours from the ſame bud, pinnate, very long, linear. General petioles linear, thicker at the baſe, flat, ſomewhat convex, ſpreading, very ſmooth. Leaflets extremely ſmall, on very ſhort petioles, ovate, ſmooth. Racemes terminating and axillary, ſolitary, ſhorter than the leaves, erect, (eight to ten) many-flowered: flowers alternate, ſcattered, yellow, on long peduncles. Calyx five-leaved, inſerted into a bell-ſhaped receptacle. Four of the petals ovate, with ſhort claws; the fifth or uppermoſt as it were pedicelled, roundiſh, with blood-red ſtreaks at the baſe: all waved and curled. Filaments ſhorter by half than the petals, equal. Anthers purple. Style ſhort, awl-ſhaped, a little aſcending. Seeds brown ſmooth [a].

Jacquin deſcribes it as a very elegant tree, with the bark both of trunk and branches remaining a long time green and ſhining, but when the tree grows old, becoming browniſh and ſtreaked. The wood is white. The prickles are ſolitary, awl-ſhaped, ſubaxillary, acuminate, ſlightly recurved, four lines in length; on the older branches frequently by threes, the middle one very ſtrong and nine lines in length. Leaves ſhining, three, four, or five from the ſame axil, on a midrib a foot long, broad and flatted. Leaflets oblong, numerous. Racemes looſe, ſimple, ſmooth, containing about ten flowers; which ſmell very ſweet, and are yellow with the uppermoſt petal variegated at the baſe with ſcarlet ſpots. Legumes yelloviſh brown, containing from one to ſix ſhining ſeeds. Parkinſonia ſeems to be diſtinguiſhed from Poinciana merely by the equality of the calycine ſegments. Theſe two trees ſown very thick make moſt beautiful hedges. Parkinſonia flowers the firſt year from ſeed, and grows very faſt.—In Jamaica it is called *Jeruſalem Thorn*. It was firſt introduced there from the main, but now grows wild in many parts and in the other iſlands of the Weſt Indies, where it was originally cultivated for incloſures. It ſeldom riſes above eight feet in height, and is well ſupplied with ſtrong thorns on every part. The branches are flexile and ſmall, and the trunk ſeldom grows to any conſiderable thickneſs [b].

The French, in the Weſt Indies, call it *Genet epineux*. It flowers ſeveral times in the year, and at the ſame time bears ripe fruit [c]. Mr. Miller cultivated it here in 1739 [d].]

He gives it the height of twenty feet, which is nearly twice as much as authors of the beſt credit attribute to it. It bears, ſays he, long ſlender bunches of yellow flowers, hanging down like thoſe of Laburnum: they perfume the air to a conſiderable diſtance, for which reaſon the inhabitants of the Weſt Indies plant them about their houſes.

PROPAGATION AND CULTURE.

This plant is propagated by ſeeds, which ſhould be ſown in ſmall pots filled with light freſh earth early in the ſpring, and the pots muſt be plunged into a hot-bed of tanner's bark, where, in three weeks or a month's time, the plants will come up, when they ſhould be kept clear from weeds, and frequently refreſhed with a little water. In a little time theſe plants will be fit to tranſplant, which ſhould be done very carefully, ſo as not to injure their roots. They muſt be each planted into a ſeparate halfpenny pot filled with light freſh earth, and then plunged into the hot-bed again, obſerving to ſtir up the tan; and if it has loſt its heat, there ſhould be ſome freſh tan added to renew it again. Then ſhade the plants from the heat of the ſun, until they have taken new root; after which time they ſhould have freſh air admitted to them every day, in proportion to the warmth of the ſeaſon. With this management the plants will grow ſo faſt, as to fill the pots with their roots by the beginning of july, at which time they ſhould be ſhifted into pots a little larger than the former, and plunged again into the bark-bed to forward their taking new root; after which it will be the beſt way to inure the plants by degrees to bear the open air, that they may be hardened before winter; for if they are kept too warm in winter, the plants will decay before the next ſpring. The only method by which I have ſucceeded in keeping theſe plants through the winter, was by hardening them in july and auguſt to bear the open air; and in ſeptember I placed them on ſhelves in the dry ſtove, at the greateſt diſtance from the fire, ſo that they were in a very temperate warmth; and there they retained their leaves all the winter, and continued in health, when thoſe which were placed in a warmer ſituation, as alſo thoſe in the greenhouſe, were entirely deſtroyed, but theſe ſeldom ſurvived the ſecond winter.

[Jacquin obſerves, that the ſeeds continue fertile ſeveral years, and germinate readily in the European ſtoves; that the plants grow luxuriantly to three feet in height the firſt year, but ſeldom live through the winter, or if they do, they die without flowering the ſecond ſummer. I have not heard that Parkinſonia has ever flowered in Europe.]

PARNASSIA. (*From mount Parnaſſus, on which, according to Dioſcorides, a plant called* Gramen Parnaſſi *grew. Altered by Tournefort to* Parnaſſia.)
Lin. gen. n. 384. *Reich. n.* 415. *Schreb. n.* 523. *Tournef. t.* 127. *Juſſ.* 245. *Gærtn. t.* 60.
Claſſ. 5. 4. Pentandria Tetragynia.
Nat. order of *Capparides*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-parted: *ſegments* oblong, ſpreading, permanent.
COR. *Petals* five, roundiſh, ſtriated, concave, ſpreading. *Nectaries* five: *each* a concave, cordate ſcale, with thirteen rays along the edge gradually higher, on each of which ſits a globe: (or three-parted, with equal, globuliferous rays.)
STAM. *Filaments* five, awl-ſhaped. *Anthers* depreſſed, incumbent.
PIST. *Germ* ovate, large. *Style* none, but in its place a perforation. *Stigmas* four, obtuſe, permanent, greater in the fruit.
PER. *Capſule* ovate-four-cornered, one-celled, four-valved. *Receptacle* fourfold, growing to the valves.
SEEDS very numerous, oblong.
OBS. *The eſſential character is moſt eaſily collected from the nectary.*

ESSENTIAL CHARACTER.

Cal. five-parted. *Pet.* five. *Nect.* five, cordate, ciliate with globular apexes. *Capſ.* four-valved.

SPECIES.

1. Parnaſſia paluſtris. *Common Marſh Parnaſſia* or *Graſs of Parnaſſus.*
Lin. ſpec. 391. *ſyſt.* 299. *Reich.* 1. 749. *Willd.* 1516. *fl. lapp. n.* 108. *ſuec. n.* 368. *hort. cliff.* 113. *mat. med.* 90. *Hudſ. angl.* 131. *Wither. arr. ed.* 3. 319. *Engl. bot. t.* 82. *Lightf. ſcot.* 172. *Relh. cant. n.* 250. *Sibth. oxon. n.* 323. *Gærtn. fruct.* 1. 287. *Gmel. ſib.* 4. 91. *Hall. helv. n.* 832. *Pollich pal. n.* 316. *Fl. dan. t.* 584. *Hoffm. germ.* 111. *Roth. germ.* 1. 138. 2. 369. *Scop. carn. n.* 378. *Villars dauph.* 2. 548. *Krock. ſileſ. n.* 484. *Mill. illuſtr. Ludw. edit. t.* 110. *Kniph. cent.* 7. *n.* 70. *Plenck, ic. t.* 243. *Reliqu. Rudb. app. t.* 34.
P. paluſtris & vulgaris. *Tournef. inſt.* 246. *Raii ſyn.* 355.
Gramen parnaſſi. *Lob. obſ.* 330. 1. *Beſl. eyſt. æſt.* 8. *t.* 11. *f.* 3.—minus. *Ger.* 691. 2. *emac.* 840. 1.

[a] Swartz. [b] Browne. [c] Jacquin. [d] Hort. kew.

Raii hift. 1049.—vulgare. *Park. theat.* 429. 2.—albo ſimplici flore. *Baub. pin.* 309. *Lob. ic.* 603.
Gramen parnaſſium. *Dod. pempt.* 564. 3.—quibuſdam Hepaticus flos. *Baub. hiſt.* 3. 537. 2.
Hepatica alba. *Cord. hiſt.* 53.
Pyrola rotundifolia paluſtris. *Mor. hiſt.* 3. 505. *ſ.* 12. *t.* 10. *f.* 3.
β. P. pleno flore. *Mill. dict. n.* 2. *Jung. Lob. Raii hiſt. Hall. Linn. Ger. emac.* 840. *f.* 2. *Park. theat.* 429. *f.* 2.
Parnaſſia with a double flower.

DESCRIPTION, *&c.*

[Root perennial, ſmall, whitiſh, fibrous; putting forth ſeveral ſtems and leaves in tufts. Stems erect, unbranched, ſomewhat twiſted, having five ſharp corners, a ſpan high, ſlender, ſmooth, having only a ſingle embracing leaf below the middle, and a ſingle flower at the top. Root-leaves petioled, ovate, pointed, quite entire, bright green above, underneath cinereous, ſmooth, netted, nine lines long, ſix or ſeven lines wide. Petioles grooved above and an inch and half long. Corolla near an inch in diameter: petals a little ſcalloped at the edges, ſlightly emarginate, white with ſemitranſparent grayiſh veins. Nectaries green, the globules yellow, from ten to fifteen, generally thirteen. Stamens only half as long as the petals, at firſt not longer than the germ, but each in order becomes longer than the reſt, as it ſheds its pollen on the orifice of the germ, which cloſes as ſoon as all the anthers have ſhed their pollen[a]. Linneus alſo obſerves, that whilſt this plant is in flower, the germ is open at the top, that the ſtamens lay their anthers alternately upon the orifice, and having diſcharged their pollen, recede to the petals. The elegant nectaries, terminated by threads, each tipt with a little yellow pellucid ſphere, ſufficiently diſtinguiſh this plant. Capſule ovate-globular, terminated by the four reflex ſtigmas, obſoletely four-grooved, one-celled or incompletely four-celled, four-valved. Receptacles four, ſpongy, oblong, narrow. Seeds irregular like ſaw-duſt, with an oblong turgid nucleus in the middle, and ſurrounded with a membranaceous rim at the ſide, of a ruſſet colour[b].

Parnaſſia is a native of moſt parts of Europe, by the ſide of bogs and moors, and in wet meadows. In Britain, it is common in Scotland, Wales, the northern counties of England, Norfolk, Staffordſhire and Worceſterſhire.] It does not grow, ſays Mr. Miller, in the neighbourhood of London, any nearer than the other ſide of Watford, in the low meadows by Caſſioberry, where it is in pretty great plenty. [We may ſuppoſe that Mr. Miller is right, ſince ſo remarkable a plant could not well have eſcaped Mr. Curtis, and it is not found in Dr. Milne's indigenous botany. It grows however near Hareſield in Middleſex, according to Mr. Blackſtone; about Ongar in Eſſex; on Hinton, Teverſham, and Trumpington moors, and near Linton in Cambridgeſhire; on Stevington, Turvey and Amptehill bogs in Bedfordſhire; in peat-bogs on Bullington-green, and under Headington-wick copſe, in Oxfordſhire; near Buddon-wood in Leiceſterſhire; about Rowel and Thorp in Northamptonſhire; at Baſford Scottum, and Papplewick in Nottinghamſhire.—Old Gerarde notices its being found in the moor near Linton in Cambridgeſhire, at Heſſet in Suffolk, at a place named Drinkſtone, in Butcher's mead; plentifully in Lanſdall and Craven in Yorkſhire, at Doncaſter, and in Thornton-fields in the ſame county. Mr. Goodyer found it in the boggy ground below the red well of Wellingborough in Northamptonſhire; and Mr. William Broad obſerved it plentifully in the Caſtle-fields of Berwick upon Tweed[c]. Parkinſon alſo notices its growing at Linton in Cambridgeſhire, Heſſet and Drinkſtone in Suffolk, in the great field of Headington near Oxford, and on the other ſide of Oxford, in the paſture next to Botley, in the high way; and at the bottom of Barton-hills in Bedfordſhire. Merret found it with a double flower in Lancaſhire; and Mr. Wood about Edinburgh[d]. It flowers in July and auguſt.]

[a] Withering. Pollich. [b] Gærtner. [c] Ger. emac. [d] Ray's ſyn.

PROPAGATION AND CULTURE.

This plant may be taken up from the natural place of growth, with balls of earth to the roots, and planted in pots filled with pretty ſtrong, freſh undunged earth, and placed in a ſhady ſituation, where, if they are conſtantly watered in dry weather, they will thrive very well, and flower every ſummer; but if the plants are planted in the full ground, it ſhould be in a very moiſt ſhady border, otherwiſe they will not live; and theſe ſhould be as duly watered as thoſe in the pots in dry weather, to make them produce ſtrong flowers.

They may be propagated by parting their roots, which ſhould be done in march, before they put out new leaves; but the roots ſhould not be divided too ſmall, for that will prevent their flowering the following ſummer. Theſe roots ſhould always be planted in pretty ſtrong freſh earth, for they will not thrive in a light rich ſoil. In the ſpring they muſt be conſtantly watered, if the ſeaſon ſhould prove dry, otherwiſe they will not flower; nor ſhould they be parted oftener than every third year, to have them ſtrong. Theſe plants flower in july, and their ſeeds are ripe the latter end of auguſt.

PARONYCHIA. See [*Achyranthes*, *Aſplenium*, *Draba*,] *Illecebrum*, [*Saxifraga*.
PARONYCHIÆ FACIE. See *Houſtonia*.]
PARSLEY. See *Apium*.
———, [MACEDONIAN. See *Bubon*.
———, MOUNTAIN. See *Athamanta*.
——— PIERT. See *Aphanes*.
———, STONE. See *Athamanta*.
———, WILD. See *Cardioſpermum*.]
PARSNEP. See *Paſtinaca*.
———, [COW. See *Heracleum*.
PARSONSIA. See *Lythrum*.
PARTHENIASTRUM. See *Parthenium*.]

PARTHENIUM (*of Pliny*, παρθενιον *of Dioſcorides*; *ſo named from its ſuppoſed effect in medicine.*)

Lin. gen. n. 1058. *Reich. n.* 1154. *Schreb. n.* 1428. *Gærtn. t.* 168. *Juſſ.* 191. Partheniaſtrum. *Niſſ. act. gall.* 1711. *Dill. gen.* 13. *elth.* 225. Hyſterophorus. *Vaill. act. gall.* 1720. *f.* 4, 8, 34, 35, 42.

Claſſ. 21. 5. Monoecia Pentandria.
Nat. order of *Nucamentaceæ*. *Corymbifera*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth common* quite ſimple, five-leaved, ſpreading: *leaflets* roundiſh, flat, equal.
COR. *Compound* convex. *Corollets hermaphrodite* many in the diſk: *females* five in the ray, ſcarcely ſurpaſſing the others.
Proper of the Hermaphrodites one-petalled, tubular, erect, with the *mouth* five-cleft, the length of the calyx: of the *Females* one-petalled, tubular, ligulate, oblique, blunt, roundiſh, the ſame length with the other.
STAM. in the Hermaphrodites—*Filaments* five, capillary, the length of the corollet. *Anthers* as many, thickiſh, ſcarcely cohering.
PIST. of the Hermaphrodite, *Germ* below the proper receptacle, ſcarcely obſervable. *Style* capillary, generally ſhorter than the ſtamens. *Stigma* none: of the Female, *Germ* inferior, turbinate-cordate, compreſſed, large. *Style* filiform, the length of the corollet. *Stigmas* two, filiform, the length of the ſtyle, ſpreading a little.
PER. none. *Calyx* unchanged.
SEEDS in the *Hermaphrodites* abortive; in the *Females* ſolitary, turbinate-cordate, compreſſed, naked.
REC. ſcarcely any, flat. *Chaffs* ſeparate the florets, ſo that each female has two hermaphrodites behind.

ESSENTIAL CHARACTER.

MALE. *Cal.* common five-leaved. *Cor.* of the diſk one-petalled.
FEM. *Cor.* of the ray five; on each ſide two males, with one female between, ſuperior.

SPECIES.

1. Parthenium Hyſterophorus. *Cut-leaved Parthenium* or *Baſtard Feverfew.*
Lin. ſpec. 1402. *ſyſt.* 852. *Reich.* 4. 140. *hort. cliff.* 242. *vſf.* 285. *Brown. jam.* 340. *Niſſ. act.*

act. 1711. *p.* 423. *t.* 13. *f.* 2. (Partheniaſtrum.) *Pluk. phyt. t.* 45. *f.* 3. (Abſinthium).

Leaves compound-multifid.

2. Parthenium integrifolium. *Entire-leaved Parthenium. Lin. ſpec.* 1402. *fyſt.* 852. *hort. cliff.* 442. *Gærtn. fruct.* 2. 429. *Gron. virg.* 147. *Mill. illuſtr. Pluk. phyt. t.* 53. *f.* 5. & *t.* 219. *f.* 1. *Mor. blaſ.* 297. & *hiſt.* 3. 41. (Ptarmica). *Raii hiſt.* 344. *n.* 4. & 363. *n.* 3. (Pſeudocoſtus).

Partheniaſtrum helenii folio. *Dill. elth.* 302. *t.* 225. *f.* 292.

Leaves ovate ernate.

DESCRIPTIONS, &c.

1. This is an annual plant, growing wild in great plenty in the iſland of Jamaica, where it is called *Wild Wormwood*. [It thrives very luxuriantly about all the ſettlements in the low lands. It is obſerved to have much the ſame qualities with Feverfew; and may be uſed, like that, in reſolutive baths and infuſions[b]. It was cultivated in 1739, by Mr. Miller, and flowers here in july and auguſt[c].]

2. This is a perennial plant, which dies to the ground every autumn, and ſhoots up again the following ſpring. [Height three feet and more, with thick, round, fleſhy ſtems. Leaves half-embracing, ſinuſute, not hairy, ſomewhat paler underneath, reſembling thoſe of Inula Helenium, with frequent oblique veins or nerves: root-leaves larger and longer, on keeled petioles. The flowers grow in a corymb at the ends of the ſtem and branches: the heads are ſnow-white above, like thoſe of Gnaphalium, whitiſh green below, villoſe at firſt. The florets are white, and much larger than in the firſt ſpecies[a]. Receptacle conical, ſhort, very narrow, ſo that it is almoſt awl-ſhaped, covered with diſform chaffs: thoſe of the ray five, very much like the calycine leaflets, and alternating with them, roundiſh, concave, having within one female and two androgynous florets placed by the ſide of the female, and each covered in front by its own chaff, which is linear-acuminate; in the diſk the chaffs are very numerous, oblong, widening upwards, keeled, emarginate at the end, and ſcurfy-villoſe on the outſide. Seeds in the female florets obovate, remarkably acuminate at bottom, three-ſided and compreſſed, ſmooth, black, bald. The calycine leaflets are oblong, acuminate, a little longer than the flower, rugged on the outſide, within from the baſe to the middle poliſhed and whitiſh. Florets of the ray five or ten, with ovate, three-toothed petals. The large chaffs, ſeem by their ſhape, ſubſtance and ſituation to belong to the calyx[d].

Native of Virginia, cultivated about 1661, by Mr. Walker, as appears from Plukenet[e]; who ſays, that thirty years before (he publiſhed his Phytographia) he gathered a ſpecimen of this plant in a garden belonging to Mr. Walker, at Weſtminſter. Mr. Ray alſo (in 1686) ſays, that he cultivated it ſome years in his little garden at Cambridge, and that he had it from Walker, a gardener at London, whoſe ſon brought it, with other rare plants, from Virginia.] Mr. Miller had ſeeds of it from his good friend Dr. Thomas Dale, who ſent them from South Carolina: he ſays, that it grows alſo plentifully in ſeveral parts of the Spaniſh Weſt Indies. It flowers in july, but ſeldom produces good ſeeds in England.

PROPAGATION AND CULTURE.

1. The firſt may be propagated by ſowing the ſeeds on a hot-bed early in the ſpring; and when the plants come up, they ſhould be tranſplanted on another hot-bed, at about five or ſix inches diſtance, obſerving to water and ſhade them until they have taken new root; after which time they muſt have a pretty large ſhare of freſh air in warm weather, by raiſing the glaſſes of the hot-bed every day, and they muſt be duly watered every other day at leaſt. When the plants have grown ſo as to meet each other, they ſhould be carefully taken up, preſerving a ball of earth to their roots, and each planted into a ſeparate pot filled with light rich earth; and if they are plunged into a moderate hot-bed, it will greatly facilitate their taking freſh root; but where this conveniency is wanting, the plants ſhould be removed to a warm ſheltered ſituation, where they muſt be ſhaded from the ſun until they have taken new root; after which time they may be expoſed, with other hardy annual plants in a warm ſituation, where they will flower in july, and their ſeeds will ripen in ſeptember. But if the ſeaſon ſhould prove cold and wet, it will be proper to have a plant or two in ſhelter, either in the ſtove, or under tall frames, in order to have good ſeeds, if thoſe plants which are expoſed ſhould fail, whereby the ſpecies may be preſerved.

2. This may be propagated by parting the roots in autumn, and may be planted in the full ground, where it will abide the cold of our ordinary winters very well.

[PARTHENIUM. See *Achillea, Chryſanthemum, Iva, Matricaria.*

PARVU. See *Coſtrum.*

PASPALUM. (Πασπαλη or Παπαλη, *very fine meal or pollen: vel vulgaris & minima.*)

Lin. gen. n. 75. *Reich. n.* 81. *Schreb. n.* 107. *Gærtn. t.* 80. *Juſſ.* 29.

Claſſ. 3. 2. Triandria Digynia.

Nat. order of *Gramina, Gramineæ* or *Graſſes.*

GENERIC CHARACTER.

CAL. *Glume* one-flowered, two-valved, membranaceous: *valves* equal, orbicular, plano-concave: *inner* flatter, placed outwardly.

COR. two-valved, the ſize of the calyx: *valves* roundiſh, cartilaginous, outwardly convex, inflex at the baſe.

STAM. *Filaments* three, capillary, the length of the glume. *Anthers* ovate.

PIST. *Germ* roundiſh. *Styles* two, capillary, the length of the flower. *Stigmas* pencil-form, hairy, coloured.

PER. none. *Glumes* permanent, cloſed, growing to the ſeed.

SEED ſingle, roundiſh, compreſſed, convex on one ſide.

OBS. P. virgatum *has the outer valve of the calyx very ſhort. Gærtner ſays, that in his ſpecimens the valves are equal. In* P. ſtoloniferum *the corolla is ſhorter than the calyx.*

ESSENTIAL CHARACTER.

Cal. two-valved, orbicular. *Cor.* of the ſame ſize. *Stigmas* pencilled.

SPECIES.

1. Paſpalum diſſectum. *Cut Paſpalum.*
Lin. ſpec. 81. *fyſt.* 104.* *Reich.* 1. 151. *Willd.* 330. *Thunb. jap.* 45. *Kniph. cent.* 11. *n.* 74. *Pluk. mant. t.* 330. *f.* 2.
Panicum diſſectum. *Lin. ſpec. ed.* 1. 57.
Spikes alternate, rachis membranaceous, flowers alternate hairy at the tip.

2. Paſpalum ſcrobiculatum. *Dimpled Paſpalum.*
Lin. fyſt. 104. *Reich.* 1. 152. *Willd.* 330. *mant.* 29.
Spikes alternate, rachis membranaceous, flowers alternate, calyxes many-nerved dimpled or pitted on the outſide.

3. Paſpalum villoſum. *Villoſe Paſpalum.*
Lin. fyſt. 105. *Willd.* 331. *Thunb. jap.* 45. *t.* 8.
P. diſtichum. *Houtt. fyſt.* 12. *t.* 89. *f.* 4.
Spikes alternate directed one way with a hirſute rachis flowers in a double row, alternately directed one way.

4. Paſpalum virgatum. *Redlike Paſpalum.*
Lin. ſpec. 81. *fyſt.* 105. *Reich.* 1. 152. *Willd.* 331. *Gærtn. fruct.* 2. *p.* 1. *Jacqu. collect.* 1. 112. *Sloan. jam.* 1. 112. *t.* 72. *f.* 1.
Spikelets panicled alternate villoſe at the baſe, flowers in pairs.

5. Paſpalum paniculatum. *Panicled Paſpalum.*
Lin. ſpec. 81. *fyſt.* 105. *Reich.* 1. 152. *Willd.* 331. *Gærtn. fruct.* 2. *p.* 2. *Sloan. jam.* 1. 115. *n.* 33. *t.* 72. *f.* 2.
Spikes panicled verticillate aggregate.

6. Paſpalum ſtoloniferum. *Stoloniferous Paſpalum.*
Lin. ſpec. ed. Willd. 331. *Boſc. in Linn. tranſ.* 2. 83. *t.* 16.
P. racemoſum. *Jacqu. ic.* 2. 302. *collect. ſuppl.* 32.
Spikelets ſpiked, rachis waved, flowers alternate directed one way, ſtem knee-jointed, proſtrate at the baſe and ſtoloniferous.

7. Paſpalum

[b] Browne. [c] Hort. kew. [d] Dillenius. [e] Gartner. [a] Hort. kew.

7. Paſpalum repens. *Creeping Paſpalum.*
Lin. ſpec. ed. Willd. 332. *Berg. in act. helv.* 7. 129. *t.* 7.
Spikes panicled ſubverticillate, nodding, culm creeping.

8. Paſpalum hirſutum. *Shaggy Paſpalum.*
Lin. ſpec. ed. Willd. 332. *Retz. obſ.* 2. 7. *n.* 3.
Spikes alternate ſubbinate, rachis membranaceous, calyxes many-nerved even, leaves and pedicels hirſute.

9. Paſpalum Kora. *Smooth Paſpalum.*
Lin. ſpec. ed. Willd. 332.
P. orbiculare. *Forſk. prod.* n. 35 ?
Spikes alternate ſubbinate, rachis membranaceous, calyxes roundiſh five-nerved, culm and leaves ſmooth.

10. Paſpalum longiflorum. *Long-flowered Paſpalum.*
Lin. ſpec. ed. Willd. 332. *Retz. obſ.* 4. 15.
Spikes two ſeſſile upright, florets oval-oblong, culm aſcending branched.

11. Paſpalum diſtichum. *Two-ſpiked Paſpalum.*
Lin. ſpec. 82. *ſyſt.* 105. *Roleb.* 1. 152. *Willd.* 332. *amoen.* 5. 391. *Swartz obſ.* 35. *t.* 2. *f.* 1. *Sloan. jam.* 1. 111. *Gertn. fruct.* 2. *p.* 2.
Spikes two almoſt erect, one of them ſeſſile, florets oblong ſmooth, culm aſcending.

12. Paſpalum conjugatum. *Conjugate-ſpiked Paſpalum.*
Lin. ſpec. ed. Willd. 333. *Swartz prodr.* 21. *deſcr.* 133. *Berg. in act. helv.* 7. 129. *t.* 8.
Spikes two horizontal conjugate, ſpikelets ovate, culm erect, leaves involute.

13. Paſpalum vaginatum. *Sheathed Paſpalum.*
Lin. ſpec. ed. Willd. 333. *Swartz prodr.* 21. *deſcr.* 135.
Spikes two, ſpikelets bifarious acuminate, culm branched knee jointed, joints ſheathed.

14. Paſpalum filiforme. *Filiform Paſpalum.*
Lin. ſpec. ed. Willd. 333. *Swartz prodr.* 22. *deſcr.* 136.
Spike ſubſolitary linear-one-ranked, ſpikelets ovate compreſſed, culm and leaves filiform.

15. Paſpalum decumbens. *Proſtrate Paſpalum.*
Lin. ſpec. ed. Willd. 333. *Swartz prodr.* 22. *deſcr.* 138.
Spike ſingle directed one way, peduncles very long, ſpikelets alternate orbiculate-acuminate ſmooth, culm procumbent.

DESCRIPTIONS, *&c.*

Theſe Graſſes are all of foreign growth, none natives of Europe, but of the Eaſt or Weſt Indies, except two, one indigenous of China, the other of Japan.

1. This is a proſtrate annual graſs with the ſheaths of the leaves almoſt ſpathaceous. Spikes few, with the rachis dilated to the width of the ſpike itſelf, which is diſtich and directed one way. Flowers orbiculate. Leaves pubeſcent on both ſides: very hairy in Thunberg's ſpecimen. Inner glume of the calyx convex even; outer flat with a raiſed line.—Native of South America, and Japan [a].

2. Culms erect, hirſute at the baſe, a foot high and more. Sheaths of the leaves purple, ciliate at the edge, and covering the joints at the baſe, hirſute. Leaves even, with a longitudinal whitiſh line above. Spikes often reflex. Calyxes roundiſh, ovate, ſmooth, blunt, gibbous; the flatter valve puſhed in at the baſe, and impreſſed with a pair of dimples in the middle [b].
Native of the Eaſt Indies. Introduced in 1778, by Sir Joſeph Banks. It flowers from july to ſeptember, and is perennial [b].

3. Culm ſmooth, three feet high. Leaves ſomewhat rugged, ſmooth, ſtriated, ſhort. Spikes three or four. Calycine glumes equal, ovate, acute, villoſe, pale with three raiſed lines. It differs from *P. diſſectum* in having a hirſute rachis; and ovate, acute, villoſe flowers: from *P. virgatum* in being leſs, and in having the flowers alternate in a double row only.—Native of Japan near Nagaſaki [c].

4. This grows ſpontaneouſly in the Caribbee iſlands, where it is called by the French *Herbe à oiſeaux*. The root is thickly fibroſe, and perennial, and throws up ſeveral annual, erect ſtems, of about four feet high, and thicker than a quill at the baſe; round, gloſſy, and in part covered by the ſheaths of the leaves. The leaves are ſeated at the joints of the ſtems, and are ſmooth on both ſides, and hiſpid in a retroverted direction on the borders. They are about two feet and a half long, with a ſheath almoſt a foot long, and about an inch wide. The ſpikes are alternate, at the top of the ſtem, very ſpreading, ſhortly footſtalked, hairy at their origin, and about four inches long; and in number uncertain, from four to twelve. The ſhaft or midrib of the ſpike is flat-membranaceous, and ſmooth, green. The flowers are obverſely ovate, very compreſſed, and marked on each ſide by a longitudinal nerve. The glumes of the calyx are villoſe at their tips on the borders. The anthers are oblong, haſtated, and incumbent, and of a dingy yellow; the ſtigmas purpliſh: the ſeeds gloſſy and brownith [d]. Outer valve of the calyx very ſhort, with the edge hirſute.—Native of Jamaica [e]. Perennial.

5. This is an annual graſs, and more erect, with the panicle as it were in whorls, with very numerous, linear, filiform, very narrow ſpikelets, all directed one way: the flowers are digeſted in a double row, and are ſharpiſh [f]. Culm a foot high. Leaves nine inches long, ſheath rough. Panicle three inches long, purple or green.
Native of Jamaica, in clayey moiſt grounds [g]. Introduced in 1782, by Monſ. Thouin. It flowers here in july and auguſt [g].

6. Root perennial, fibroſe, whitiſh. Culm flexuoſe, ſmooth, cylindric, two feet high, ſolid, rooting at the knots: branches alternate. Leaves lanceolate, ſmooth, ſlightly ſtreaked, a little waved at the edge, often three inches long, and eight lines wide. Sheath a little ſhorter than its internode, ſtipuled and ruffet at the top. Each ſheath, beſides the part of the ſtem which belongs to it, incloſes the rudiment of another ſtem. Stipule very ſhort, ciliate, whitiſh. Spike ſimple, five or ſix inches long. Common peduncle or rachis alternate, membranaceous, ciliate at the edge, ſeven or eight lines long, and a line wide, bearing on its lower ſurface as far as eighteen flowers. Pedicel flatted, ſcarcely a line in length. Calyx ruſſet: valves oblong, ciliate at the point, very much waved on the ſides, principally at the baſe; the upper convex, the lower concave. Valves of the corolla equal, oval, membranous, uncoloured, a little ſhorter than the calyx: upper convex, lower concave. Filaments attached to the baſe of the germ, and twice as long as the corolla. Anthers elongated, twin, reddiſh. Germ oval, very ſmall and ſmooth. Styles the length of the corolla. Stigmas nearly the ſame length, white and very hairy. They iſſue from the flower and bend to each ſide at the time of fecundation. Seed covered by the corolla, and of the ſame ſize and colour with it: truncate at the top of the convex ſide, and a little grooved on the flat ſide: ſubſtance horny, ſemitranſparent. It differs from this genus only in having the corolla ſhorter than the calyx, and the filaments longer than the flower.
It is a native of Peru, whence it paſſed into Spain and France. It has been cultivated with ſucceſs at Paris. The ſeeds have been in part abortive, but as it runs at the root it may be eaſily increaſed. The height and abundance of its ſtems, the ſize of its leaves, and the ſucculence of all its parts render it a proper graſs for cultivation [h]. But theſe graſſes from hot countries never are found to anſwer in England.

7. This is very like the preceding, differing only in its creeping culm, rooting at the joints, narrower leaves, and a more ſlender panicle.—Native of Surinam. Perennial [i]. By the preceding Willdenow muſt ſurely mean the *paniculatum*.

8. Culms erect, leafy, hairy above. Leaves and ſheaths hairy all over, and bearded at the mouth, flat, nerved. Spikes almoſt erect, ſubſeſſile. Rachis narrower than in *P. ſcrobiculatum*. Flowers directed one way, alternate, ſmooth, on hairy pedicels, calyxes

[a] Linn. ſpec. & ſyſt. & Thunb. jap. [b] Linn. mant. [c] Hort. kew. [d] Thunberg. [e] Jacquin. [f] Linn. ſyſt. [g] Linn. ſpec. [h] Sloane. [i] Hort. kew. [k] Linn. tranſ. [l] Willdenow.

marked with from three to five nerves.—Native of China, whence it was ſent by Bladh.

Retzius affirms, that in the *P. diſſectum*, which he received from Tranquebar, the leaves were entirely ſmooth, as well as in the cultivated graſs: which contradicts what is ſaid above from Linneus and Thunberg.

9. This, according to Willdenow, differs from *P. diſſectum* in the ſmoothneſs of the leaves and flowers. Is not then the *P. diſſectum* of Retzius the ſame with this?—Native of the Eaſt Indies; and of the Society Iſles, if this be the ſame with P. orbiculare of Forſter, as Willdenow ſuſpects.

10. Culms filiform, ſlender. Leaves ſhort, acute, ſpreading at the baſe of the culm; and thence the ſheath extending almoſt to the baſe of the culm terminate in a very ſhort leaf. Spikes linear. Flowers alternate, pedicelled, preſſed cloſe. Rachis flat, ſomewhat flexuoſe. Calyxes oval, acute, flat, green, ſtriated, naked; valves equal. One valve of the corolla of the ſame form and ſize with the calyx; the other ſmaller. It has the appearance of *Panicum diſtachyon*, and aſſociates rather with this genus than with *Milium*.

Native of Malabar, on the borders of fields; ſent by Koenig[a]. It varies ſometimes with three ſpikes together[b].

11. Culm ſimple, decumbent towards the root. Leaves lanceolate, acute, flat, ſhort. Sheaths ſtriated, hairy at the baſe. Spikes almoſt four-cornered, one ſhortly pedicelled. Rachis flat, even. Florets approximating, alternate, ſubſeſſile, ovate, acute. Glumes both of calyx and corolla equal, ovate, ſtriated. Filaments longer. Anthers very dark blue. Stigmas pencilled, blue[c].

According to Linneus it is a foot high. Leaves involute-ſubulate. Spikes upright, approximating, directed one way; with alternate, acuminate flowers, all having three ſtamens.

Native of Jamaica, and other iſlands of the Weſt Indies, in moiſt meadows. Introduced in 1776, by John Fothergill, M. D. It is a biennial graſs, and flowers in july[d].

12. Height from one to two feet. Culm ſimple, compreſſed a little, ſmooth. Leaves linear-lanceolate, a ſpan long at moſt, quite entire, ſtriated, ſmooth, rolled in at the edge, ciliate at the baſe. Sheaths compreſſed, villoſe at the neck. Spikes two, ſometimes but ſeldom three, ſeſſile, equal, from three to five inches long, linear, yelloviſh. Rachis linear, compreſſed, ſmooth. Spikelets in pairs, directed one way, ſubſeſſile. Valves of the calyx equal; outer roundiſh, convex, with whitiſh hairs thinly ſet about the edge; inner flat or concave, pale green. Valves of the corolla a little leſs than thoſe of the calyx, more tender, whitiſh. Anthers whitiſh. Styles filiform. Stigmas villoſe, whitiſh.

P. diſticbum is decumbent: the leaves of that are ſhorter and flat; the ſpikes almoſt erect, ſhorter, ſomewhat quadrangular; the florets larger, oblong, acute; the gemitals blue, and the colour of the whole bright green.

P. conjugatum is common in the Weſt Indies in moiſtiſh meadows. The Engliſh there call it *Sourgraſs*, and cattle do not eat it.

13. This is a foot high. Roots numerous, filiform. Culm creeping, ſheathed at the joints. Sheaths diſtich, compreſſed, wide, ſtriated, ſmooth. Leaves lanceolate-linear, acute, ſpreading, hairy at the neck of the ſheath. Spikes ſpreading, an inch long, pedicelled. Rachis linear, ſubflexuoſe. Spikelets ovate, plano-convex, on very ſhort pedicels. Calycine glumes equal, ovate, acute, ſmooth. Corolla ſcarcely ſmaller. Anthers and ſtigmas purple. It is known by its branching culm, by its ſheaths and ſpikelets.

Native of Jamaica, in paſtures where the ſoil is clay.

14. This is a tufted graſs, two feet high. Culm upright, ſimple, ſomewhat compreſſed, ſheathed, ſtriated. Joints blackiſh. Leaves equalling the culm, half round, ſomewhat three-ſided, acute, ſtriated, ſmooth. Sheaths ſomewhat hairy at the neck of the leaves. Spike upright, ſcarcely wider than the culm, compreſſed, ſmooth, from two to three inches in length. Rachis linear, convex not flat, a little flexuoſe. Spikelets pedicelled, approximating, ſmooth, a little convex on the inner ſide. Calycine glumes ovate, ſmooth. Corolline of the ſame length and form with the outer ones. Anthers yellow. Stigmas pencilled, blueiſh.—In a more fertile ſoil, ſometimes it has three or four ſpikes, but the culm and leaves are always filiform, by which it is diſtinguiſhed from *P. diſſectum*, which is proſtrate and not ſcſpitoſe, the leaves linear, the florets oval and pubeſcent, and it grows in a dry calcareous ſoil.

P. filiforme is common in the Weſt Indies, in open hard fields.

15. This is a procumbent graſs ſcarcely a foot in length. Culm branched, divaricating, round, ſmooth. Leaves widiſh, lanceolate, pubeſcent on both ſides, with the edge ſubciliate. Sheaths the length of the leaves, even, villoſe at the neck. Peduncles from the ſheaths ſolitary, from four to ſix inches long, looſe, one-ſpiked. Spikes nodding, an inch long. Spikelets directed one way, on ſhort pedicels. Rachis membranaceous, linear, flat. Calycine glumes ovate, ſmooth. Corolline very like them. Anthers pale. Stigmas long, pencilled. This differs from its congeners, in its divaricating diffuſed culm, and ſolitary, axillary ſpike, on a long pedicel.

Native of Jamaica, on the weſtern ſide of the iſland, on the mountains, in a dry ſandy ſoil[e].

PASQUE-FLOWER. See *Anemone*.]

PASSERINA. (*So named from the form of the ſeed, like a bird's tongue.*)

Lin. gen. n. 489. *Reich. n.* 530. *Schreb. n.* 668. *Juſſ.* 77.

Claſſ. 8. 1. Octandria Monogynia.

Nat. order of *Vepretulæ*, *Thymelææ*, Juſſ.

GENERIC CHARACTER.

CAL. none.

COR. one-petalled, ſhrivelling. *Tube* cylindrical, ſlender, ventricoſe below the middle. *Border* four-cleft, ſpreading: *ſegments* concave, ovate, blunt.

STAM. *Filaments* eight, briſtle-ſhaped, the length of the border, placed upon the point of the tube. *Anthers* ſubovate, erect.

PIST. *Germ* ovate, within the tube of the corolla. *Style* filiform, ſpringing from the ſide of the very point of the germ, the ſame length with the tube of the corolla. *Stigma* capitate, hiſpid all over with villoſe hairs.

PER. coriaceous, ovate, one-celled.

SEED ſingle, ovate, acuminate at both ends, with the points oblique.

OBS. P. capitata *has flowers without a tube, and ſixteen ſtamens, the eight inner ones caſtrated.* P. uniflora *has eight ſtamens, beſides the rudiments of eight anthers at the bottom of the flower.*

ESSENTIAL CHARACTER.

Cal. none. *Cor.* four-cleft. *Stam.* placed on the tube. *Seed* one, corticate.

SPECIES.

1. Paſſerina filiformis. *Filiform Sparrow-wort.*
Lin. ſpec. 513. *Juſſ.* 374. *Reich.* 2. 197. *hort. diff.* 246. *t.* 11. *Berg. cap.* 130. *Thunb. prodr. cap.* 75.
Leaves linear convex, imbricate in four rows, (three-cornered, acute) branches tomentoſe, (flowers racemed. Th.)

2. Paſſerina hirſuta. *Shaggy Sparrow-wort.*
Lin. ſpec. 513. *Reich.* 2. 198.
Thymelæa tomentoſa, foliis ſedi minoris. *Bauh. pin.* 461. *Raii hiſt.* 1589.
Sanamunda 3. *Cluſ. hiſt.* 1. 89. *Bryn. cent. 1.* 19.
Seſamoides parvum Dalechampii. *Bauh. hiſt.* 1. 595.
Leaves fleſhy ſmooth on the outſide, ſtems tomentoſe.

[a] Retzius. [b] Willdenow. [c] Swartz. [d] Hort. kew. [e] Swartz.

[3. Passerina ericoides. *Heath-like Sparrow-wort.*
Lin. syst. 374. *Reich.* 2. 198. *mant.* 236. *Burm. prodr.* 12.
Leaves linear even subimbricate, corollas globular.
4. Passerina capitata. *Headed Sparrow-wort.*
Lin. spec. 513. *syst.* 374. *Reich.* 2. 198. *amoen.* 6. *afr.* 16. *Berg. cap.* 127. *Burm. afr.* 133. *t.* 48. *f.* 3.
Leaves linear smooth, heads peduncled tomentose.]
5. Passerina ciliata. *Ciliated Sparrow-wort.*
Lin. spec. 514. *syst.* 374. *Reich.* 2. 199. *hort. cliff.* 146. *Berg. cap.* 126. *Gron. orient.* 126. *Thunb. prodr. cap.* 75.
Thymelæa foliis chamælææ minoribus hirsutis. *Bauh. pin.* 463.
T. foliis oblongis acutis ad oras fimbriatis. *Burm. afr.* 129. *t.* 47. *f.* 2.
Sanamunda 1. *Clus. hist.* 1. 88.
Erica africana rusci folio. *Seba mus.* 2. 15. *t.* 12. *f.* 9.
Leaves lanceolate ciliate, branches naked, (flowers subsolitary.)
6. Passerina uniflora. *One-flowered Sparrow-wort.*
Lin. spec. 514. *syst.* 374. *Reich.* 2. 199. *Berg. cap.* 128. *Thunb. prodr. cap.* 75.
Thymelæa foliis triquetris cruciatim oppositis, flore sericeo. *Burm. afr.* 132. *t.* 48. *f.* 2.
T. ramosa, linearibus fol. angustis, flore solitario. *Burm. afr.* 131. *t.* 48. *f.* 1.
Leaves linear opposite (lanceolate even,) flowers terminating solitary, branches smooth.
[7. Passerina anthylloides.
Lin. syst. 374. *suppl.* 225. *Thunb. prodr. cap.* 76.
Leaves oblong villose, flowers in heads.
8. Passerina spicata. *Spiked Sparrow-wort.*
Lin. syst. 374. *suppl.* 226. *Thunb. prodr. cap.* 75.
Leaves ovate villose, flowers lateral sessile.
9. Passerina laxa. *Loose-branched Sparrow-wort.*
Lin. syst. 374. *suppl.* 226. *Thunb. prodr. cap.* 75.
Leaves ovate hairy, flowers in heads, branches loose.
10. Passerina grandiflora. *Great-flowered Sparrow-wort.*
Lin. syst. 374. *suppl.* 226. *Curt. magaz.* 292.
Very smooth, leaves oblong acute concave wrinkled on the outside, flowers terminating sessile solitary.
11. Passerina Gnidia.
Lin. syst. 374. *suppl.* 226.
Bankſia Gnidia. *Forst. gen. n.* 4. *act. upf.* 3. 173.
Two-stamened very smooth, leaves lanceolate acute.
12. Passerina pilosa. *Hairy Sparrow-wort.*
Lin. syst. 374. *suppl.* 226.
Bankſia tomentosa. *Forst. gen. n.* 4.—pilosa. *Act. upf.* 3. 174.
Two-stamened hairy, leaves linear blunt.
13. Passerina prostrata. *Prostrate Sparrow-wort.*
Lin. syst. 374. *suppl.* 227.
Bankſia prostrata. *Forst. gen. n.* 4. *Act. upf.* 3. 175.
Two-stamened hairy, leaves ovate.
14. Passerina cephalophora.
Thunb. prodr. cap. 75.
Leaves three-cornered in four rows, heads woolly.
15. Passerina linoides.
Thunb. prodr. cap. 75.
Leaves linear-lanceolate smooth three-ribbed, flowers terminating solitary.
16. Passerina nervosa.
Thunb. prodr. cap. 75.
Leaves lanceolate smooth three-ribbed, flowers in heads.
17. Passerina setosa.
Thunb. prodr. cap. 75.
Leaves lanceolate smooth five-nerved, flowers in heads bristly on the outside.
18. Passerina strictа.
Thunb. prodr. cap. 75.
Leaves ovate hirsute, flowers in heads, branches rigid.
19. Passerina pentandra.
Thunb. prodr. cap. 76.
Leaves ovate hirsute, spike ovate terminating.]

DESCRIPTIONS, *&c.*

1. This rises with a shrubby stalk five or six feet high, sending out branches the whole length, which, when young, grow erect, but as they advance in length, they incline towards a horizontal position; but more so, when the small shoots at the end are full of flowers and seed-vessels. The branches are covered with a white down like meal, and are closely beset with very narrow leaves in four rows, so that the young branches seem as if they were four-cornered. The flowers come out at the extremity of the young branches, from between the leaves on every side, they are small and white, so that they make no great appearance. The seed-vessels are small, and seem withered and dry. [The tube of the corolla is the length of the germ. The floral leaves have a wide membranaceous rim at the base, which is not the case in the rest [f].]

It is a native of the Cape of Good Hope, whence it was first brought to the gardens in Holland. [Mr. Miller cultivated it here in 1752. It flowers from june to august [g].]

2. This has shrubby stalks, which rise to a greater height than the former; the branches grow more diffused, and are covered with a mealy down. Leaves imbricate, short, thick, succulent, smooth and green on the outside, but downy on the inner. Flowers small and white, like those of the former, and appearing about the same time.

Native of Spain and Portugal, [Provence, Italy and the Levant [h]. Reichard remarks, that Gouan (*illustr.* 27. *t.* 17. *f.* 1.) refers Sanamunda 3. of Clusius to his Daphne dioica.

3. This has so entirely the appearance of an *Erica*, that at first sight no one would doubt of its being one. It has the stature of the first species. The branchlets are pubescent. The leaves short, (like those of *Erica*) ovate-oblong, fleshy, opposite, the floriferous one subcordate. Flowers sessile, on the uppermost branchlets, lateral. Seeds ovate, black, shining. Tube of the corolla globular, inflated, (like that of *Erica*) coloured, as the border.—Native of the Cape of Good Hope [i].

4. Leaves scattered. Heads terminating, globular. Peduncles tomentose, thickened. Flowers many, white, sessile without a tube. Stamens above the throat sixteen, the eight inner of which are castrated [k]. Stems shrubby, compound, with rod-like red branches. Leaves erect, acuminate. Common peduncles from the end of the branches, turbinate, tomentose [l].—Native of the Cape of Good Hope.]

5. This has a shrubby stalk, rising five or six feet high, sending out many branches which are naked to their ends, where they have oblong leaves, standing erect, and having hairy points. The flowers are small, white, and come out among the leaves at the end of the branches. [Linnæus remarks, that the flowers are purple, with the throat villose.

Native of the Cape of Good Hope, Spain and the Levant.] It flowers here in june, but no seeds are produced.

6. This has a shrubby stalk, seldom rising more than a foot high, dividing into many branches, which are slender, smooth, and spread out on every side. Leaves dark-green, having the appearance of those of the Fir-tree, but narrower. The flowers are larger than those of the former, and the upper part of the petals is spread open flat; they are of a purple colour, and appear about the same time as the former.

[There are eight stamens at the throat of the corolla, and eight rudiments of anthers lie concealed at the bottom [m].—Native of the Cape of Good Hope.

7. Flowers on the outside very hirsute, white; within, in the living plant yellow, in the dry plant black.

8. The flowering branches resemble a leafy spike.

9. This resembles *P. ericoides*, but differs by having the flowers in heads.—These were found at the Cape of Good Hope by Thunberg.

10. Branches one-flowered. Leaves opposite, subimbricate, blunt with a point, on the outside wrinkled as it were with the veins raised, within concave, very smooth. Stamens eight, above the tube. Stigma capitate, without the tube. It is easily distinguished by the large borders of the flowers, silky on the outside.

[f] Linn. syst. [g] Hort. kew. [h] Linn. spec. [i] Linn. mant. and syst. [k] Linn. syst. [l] Linn. amoen. [m] Linn. syst.

Native of Africa. Recently introduced, says Mr. Curtis, from the Cape. It flowered in 1794, at Meſſ. Lee and Kennedy's, and forms a ſmall neat ſhrub, like *Phylica ericoides*.

11. The leaves are more rigid, and very like thoſe of Gnidia.—Native of New Zealand, in the fiſſures of rocks, by the ſea coaſt, and at the tops of mountains.

12. Native of New Zealand.

13. Native of New Zealand, on dry mountains.

Theſe diandrous Paſſerinas have the ſmell of Syringa flowers, and are evergreen. They are not ſeparated from their natural genus, though the number of ſtamens be leſs. The *Struthiola* might have been referred to this genus, had it not been for the nectaries. *Daphne* alſo agrees with *Paſſerina**.

14 to 19. Natives of the Cape of Good Hope, where they were found by Thunberg.]

PROPAGATION AND CULTURE.

Theſe ſhrubs from the Cape of Good Hope may be increaſed by cuttings during the ſummer months, planted in a bed of loamy earth, and cloſely covered with a bell or hand-glaſs to exclude the air, ſhading them from the ſun, and refreſhing them now and then with water. They will take root in about two months, when they may be planted each in a ſmall pot filled with loamy earth; placing them in the ſhade till they have taken new root: then remove them into a ſheltered ſituation, there to remain till October, when they muſt be placed in the green-houſe, and treated as Myrtles.

Thoſe alſo which produce ſeeds, or when they can be procured, may alſo be propagated that way. Sow them in autumn, ſoon after they are ripe, in ſmall pots filled with light earth, plunged into an old bark-bed, under a common frame in winter. The plants will come up in the ſpring, and may be treated like the cuttings: but the ſeedling plants will grow more erect, and make a handſomer appearance.

2. The ſecond ſort will live abroad in common winters, in a dry ſoil and warm ſituation; but in hard froſts, the plants are frequently deſtroyed; one or two therefore ſhould be kept in pots, and ſheltered in winter.

PASSERINA. See *Gnidia*, *Lachnæa*, *Linum*, *Stellera*, and *Struthiola*.]

PASSIFLORA. (*Altered by Linnæus, from the old name* Flos Paſſionis, *which was given it at the firſt diſcovery by the Europeans, from a fancy that they ſaw all the inſtruments of our Saviour's paſſion in the flower.*)

Lin. gen. n. 1021. *Reich. n.* 1110. *Schreb. n.* 509. *Juſſ.* 397. Granadilla. *Tournef. t.* 124. *Dill. elth.* 137, 138. *Gærtn. t.* 60, 177, 180. Murucuia. *Tournef. t.* 125.

Claſs. 20. 4. Gynandria Pentandria. — Pentandria Trigynia. *Schreb. Trunk. &c.* Monadelphia Pentandria. *Swartz.*

Nat. order of *Cucurbitaceæ*.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, flat, coloured.

COR. *Petals* five, ſemilanceolate, ſtar, blunt, of the ſame ſize and form with the calyx.

Nectary a triple crown: the outer longer, encircling the ſtyle within the petals, more contracted above.

STAM. *Filaments* five, awl-ſhaped, faſtened to a column at the baſe of the germ, and united at bottom, ſpreading. *Anthers* incumbent, oblong, blunt.

PIST. *Germ* roundiſh, placed on the apex of a ſtraight, cylindrical column. *Styles* three, thicker above, ſpreading. *Stigmas* capitate.

PER. *Berry* fleſhy, ſubovate, one-celled, pedicelled.

SEEDS very many, ovate, arilled. *Receptacle* of the ſeeds triple, growing longitudinally to the rind of the pericarp.

OBS. *In* Granadilla *of Tournefort the nectary is compoſed of fibres in a ring.* Murucuia *of Tournefort conſiſts of a conical truncated membrane.* P. ſuberoſa *is apetalous.*

* Linn. ſuppl.

ESSENTIAL CHARACTER.

Styles three. *Cal.* five-leaved. *Pet.* five. *Nect.* a crown. *Berry* pedicelled.

SPECIES.

* *With undivided leaves.*

1. Paſſiflora ſerratifolia. *Notch-leaved Paſſion-flower.*
Lin. ſpec. 1355. *Juſſ.* 821. *Reich.* 4. 47. *hort. cliff.* 431. *amoen.* 1. 217. *f.* 1. *Jacqu. hort.* 1. 4. *t.* 10. *Mart. dec.* 4. *t.* 36. (Granadilla).
Leaves ovate ſerrate.

[2. Paſſiflora pallida. *Pale Paſſion-flower.*
Lin. ſpec. 1355. *Reich.* 4. 47. *amoen.* 1. 218. *f.* 2 *Lour. cochinch.* 527. *Plum. amer.* 74. *t.* 89. *Mer. hiſt.* 3. 7. *f.* 1. *t.* 2. *f.* 4. (Clematis).
Murucuja quinta. *Piſo braſ. l.* 4. *c.* 60. *p.* 248. *fig.*
Leaves ovate quite entire, petioles biglandular.]

3. Paſſiflora cuprea. *Copper-coloured Paſſion-flower.*
Lin. ſpec. 1355. *Reich.* 4. 47. *amoen.* 1. 219. *f.* 3. *Dill. elth.* 165. *t.* 138. *f.* 165. *Mart. dec.* 4. *t.* 37. *Cateſb. car.* 2. *t.* 93. (Granadilla).
Leaves ovate commonly quite entire, petioles equal.

[4. Paſſiflora tiliæfolia. *Lime-leaved Paſſion-flower.*
Lin. ſpec. 1355. *Reich.* 4. 48. *amoen.* 1. 219. *f.* 4. *Feuill. peruv.* 1. 720. *t.* 12. (Granadilla).
Leaves cordate quite entire, petioles equal.]

5. Paſſiflora maliformis. *Apple-fruited Paſſion-flower.*
Lin. ſpec. 1355. *Reich.* 4. 48. *amoen.* 1. 220. *f.* 5. *Plum. amer.* 67. *t.* 82. *Raii ſuppl.* 340. *n.* 9. (Clematis).
Leaves cordate-oblong quite entire, petioles biglandular, involucres quite entire.

6. Paſſiflora quadrangularis. *Square-ſtalked Paſſion-flower.*
Lin. ſpec. 1356. *Juſſ.* 821. *Reich.* 4. 48. *Jacqu. amer.* 231. *t.* 143. *pict.* 113. *t.* 218. *Swartz obſ.* 332. *Sowerby in Linn. tranſ.* 2. 21. *t.* 3. *f.* 2. *Brown. jam.* 327. *n.* 2.
Leaves oval ſubcordate ſmooth many-nerved, petioles glandular, ſtem membranaceous four-cornered, ſtipules oval-oblong.

[7. Paſſiflora alata. *Wing-ſtalked Paſſion-flower.*
Ait. hort. kew. 3. 306. *Curt. magaz.* 66. *Sowerby in Linn. tranſ.* 2. 23. *t.* 3. *f.* 6.
Leaves ovate ſubcordate even few-nerved, petioles glandular, ſtem membranaceous four-cornered, ſtipules lanceolate ſerrate.]

8. Paſſiflora laurifolia. *Laurel-leaved Paſſion-flower* or *Water Lemon.*
Lin. ſpec. 1356. *Juſſ.* 822. *Reich.* 4. 48. *amoen.* 1. 220. *f.* 6. *Jacqu. obſ.* 1. 35. *hort.* 2. *t.* 162. *amer. pict.* 113. *t.* 219. *Swartz obſ.* 333. *Sowerby in Linn. tranſ.* 2. *t.* 4. *f.* c. *Brown. jam.* 327. *n.* 3. *Pluk. phyt. t.* 211. *f.* 3. *Plum. amer.* 64. *t.* 80. *Raii ſuppl.* 341. *n.* 15. (Clematis).
Marquiaas. *Mer. ſurin. t.* 21.
Leaves ovate quite entire, petioles biglandular, involucres toothed.

9. Paſſiflora multiflora. *Many-flowered Paſſion-flower.*
Lin. ſpec. 1356. *Reich.* 4. 49. *amoen.* 1. 221. *f.* 7. *Plum. amer.* 75. *t.* 90. *Raii ſuppl.* 343. *n.* 22. (Clematis).
Leaves oblong quite entire, flowers in cluſters.

[10. Paſſiflora angulifolia. *Narrow-leaved Paſſion-flower.*
Swartz prodr. 97.
Leaves ſubcordate lanceolate entire, petioles biglandular, flowers ſolitary.

11. Paſſiflora adulterina.
Lin. ſyſt. 822. *ſuppl.* 408. *Smith ic. ined.* 1. *t.* 24.
Leaves oblong-oval entire, flowers tubular, calyxes three-leaved.

** *With two-lobed leaves.*

12. Paſſiflora perfoliata. *Perfoliate Paſſion-flower.*
Lin. ſpec. 1356. *Reich.* 4. 49. *amoen.* 1. 222. *f.* 8. *Swartz obſ.* 334. *Brown. jam.* 328. 10. *Sloan. jam.* 1. 230. *t.* 142. *f.* 3, 4. *Raii ſuppl.* 342. *n.* 20. (Flos paſſionis).
Leaves oblong tranſverſe embracing petioled dotted underneath, crown ſimple many-parted.

13. Paſſiflora rubra. *Red-fruited Paſſion-flower.*
Lin. ſpec. 1356. *Juſſ.* 822. *Reich.* 4. 50. *amoen.* 1. 222. *f.* 9. *Jacqu. collect.* 1. 136. *Swartz. obſ.* 336. *Plum. amer.* 68. *t.* 83. *Raii ſuppl.* 341. *n.* 17. (Clematis).

Leaves cordate, lobes acuminate subtomentose underneath, stem villose.

14. Paſſiflora normalis.
Lin. ſpec. 1357. *ſyſt.* 822. *Reich.* 4. 50. *amoen.* 5. 408. *Brown. jam.* 328. *n.* 11. *Gærtn. fruct.* 2. 479. (Granadilla).
Coanenepilli ſ. Contrajerva. *Hern. mex.* 301. *Raii hiſt.* 651.
Leaves emarginate at the baſe, lobes linear blunt divaricate, the middle one obſolete mucronate.

15. Paſſiflora Murucuja.
Lin. ſpec. 1357. *ſyſt.* 822. *Reich.* 4. 50. *amoen.* 1. 223. *f.* 10. *Swartz obſ.* 336. *Brown. jam.* 328. *n.* 12. *Plum. amer.* 72. *t.* 87. *Raii ſuppl.* 342. *n.* 19. (Clematis).
Leaves ovate undivided at the baſe, dotted underneath, nectary one-leafed.

16. Paſſiflora Veſpertilio. *Bat-winged Paſſion-flower.*
Lin. ſpec. 1357. *ſyſt.* 822. *Reich.* 4. 50. *amoen.* 1. 223. *f.* 11. *vir. cliff.* 91. *hort. cliff.* 431. *Dill. elth.* 164. *t.* 137. *f.* 164. (Granadilla).
Leaves rounded at the baſe and glandular, lobes acute divaricate dotted underneath.

[17. Paſſiflora lunata. *Creſcent-leaved Paſſion-flower.*
Smith ic. rar. 1. *t.* 1. *Sowerby in Linn. tranſ.* 2. 26. *t.* 5. *f.* c. *Mart. dec.* 1. 52. (Granadilla).
P. biſlora. *Cavan. diſſ.* 437. *t.* 288.
P. punctata. *Hort. augl.* 25. *Lin. ſyſt. deſcr. & mant.* 492.
Leaves dotted, at the baſe ſlightly cordate and having two glands, outer rays of the nectary club-ſhaped compreſſed obtuſe.]

18. Paſſiflora capſularis.
Lin. ſpec. 1357. *Reich.* 4. 51. *Plum. ſpec.* 6. *ic.* 138. *f.* 2. *Barr. obſ. præf.* 1. *titul. f.* 1. (Granadilla).
Leaves cordate oblong peticled.

*** *With three-lobed leaves.*

[19. Paſſiflora rotundifolia. *Round-leaved Paſſion-flower.*
Lin. ſpec. 1357. *ſyſt.* 822. *Reich.* 4. 51. *Jacqu. obſ.* 2. *t.* 46. *f.* 1. *Swartz obſ.* 337. *Plum. ſpec.* 6. *ic.* 138. *f.* 1. *Barr. obſ. præf.* 1. *titul. f.* 2. (Granadilla).
Leaves roundiſh three-lobed only at top, dotted underneath; nectary ſimple.

20. Paſſiflora oblongata.
Swartz prodr. 97.
Leaves elliptic, ſubtrilobate in front, dotted underneath, lobes ſharpiſh, the middle one ſhorter.

21. Paſſiflora punctata. *Dotted-leaved Paſſion-flower.*
Lin. ſpec. 1358. *ſyſt.* 822. (*non deſcr.*) *Reich.* 4. 51. *amoen.* 1. 224. *f.* 12. *Feuill. peruv.* 1. 718. *t.* 11.
Leaves oblong dotted underneath, the middle one ſmaller.]

22. Paſſiflora lutea. *Yellow Paſſion-flower.*
Lin. ſpec. 1358. *ſyſt.* 822. *Reich.* 4. 52. *amoen.* 1. 224. *f.* 13. *hort. cliff.* 431. *Gron. virg.* 112, 140. *Jacqu. ic. vol.* 2. *Mor. hiſt.* 1. 7. *f.* 1. *t.* 2. *f.* (Clematis). *Sloan. jam.* 1. 231. (Flos paſſionis).
Leaves cordate ſmooth, lobes ovate, petioles without glands.

[23. Paſſiflora parviflora. *Small-flowered Paſſion-flower.*
Swartz prodr. 97.
Leaves ſmooth, lobes ovate entire, the middle one more produced, petioles biglandular, ſtem herbaceous.

24. Paſſiflora glauca. *Glaucous-leaved Paſſion-flower.*
Ait. hort. kew. 3. 308.
Leaves cordate ſmooth, lobes ovate equal, petioles glandular, ſtipules ſemiovate.

25. Paſſiflora minima. *Dwarf Paſſion-flower.*
Lin. ſpec. 1359. *ſyſt.* 823. *Reich.* 4. 52. *amoen.* 1. 229. *f.* 18. *Jacqu. hort. t.* 20. *Swartz obſ.* 338. *Brown. jam.* 328. *n.* 5. *Pluk. phyt. t.* 210. *f.* 3. *Sowerby in Linn. tranſ.* 2. 27. *t.* 5. *f. f.*
Leaves ſmooth, lobes lanceolate quite entire, the middle one more produced, petioles biglandular, ſtem even ſuberous at bottom.

26. Paſſiflora heterophylla. *Narrow-leaved Paſſion-flower.*
Ait. hort. kew. 3. 309.
Leaves undivided linear oblong and three-lobed ſmooth quite entire, petioles biglandular.]

27. Paſſiflora ſuberoſa. *Cork-barked Paſſion-flower.*
Lin. ſpec. 1358. *ſyſt.* 823. *Reich.* 4. 52. *amoen.* 1. 226. *f.* 14. *Jacqu. hort.* 2. 77. *t.* 163. *Gærtn. fruct.* 2. 480. *Plum. amer.* 70. *t.* 84. *Raii ſuppl.* 339. *n.* 6. (Clematis). *Pluk. phyt. t.* 210. *f.* 4. (Paſſifloræ affinis).
β. *Plum. amer.* 70. *t.* 85. *Sloan. jam.* 1. 320.
Leaves ſubpeltate, lobes ovate entire, petioles biglandular, ſtem ſuberoſe.

28. Paſſiflora holoſericea. *Silky-leaved Paſſion-flower.*
Lin. ſpec. 1359. *ſyſt.* 823. *Reich.* 4. 53. *amoen.* 1. 226. *f.* 15. *hort. cliff.* 432. *Mart. dec.* 5. *t.* 51. (Granadilla).
Leaves with a reflex toothlet on each ſide at the baſe.

[29. Paſſiflora hirſuta. *Hairy Paſſion-flower.*
Lin. ſpec. 1359. *Reich.* 4. 53. *amoen.* 1. 227. *f.* 16. *Pluk. phyt. t.* 212. *f.* 1. *Plum. amer.* 74. *t.* 88. *f.* A. (Clematis). *Herm. par. t.* 176. (Flos paſſionis).
Leaves villoſe, the lower ſmooth above, lobes oblong quite entire, the middle one more produced, petioles biglandular.]

30. Paſſiflora fœtida. *Stinking Paſſion-flower.*
Lin. ſpec. 1359. *ſyſt.* 823. *Reich.* 4. 54. *amoen.* 1. 228. *f.* 17. *phil. bot.* 260. *hort. cliff.* 431. *Giſeck. ic. faſc.* 1. *t.* 20. *Gærtn. fruct.* 1. 289. *Brown. jam.* 327. 1. *Plum. amer.* 71. *t.* 86. (Clematis). *Herm. par. t.* 173. (Flos paſſionis).
β. *Pluk. phyt. t.* 104. *f.* 1.
Leaves cordate hairy, involucres capillary-multifid.

[31. Paſſiflora ciliata. *Ciliated Paſſion-flower.*
Ait. hort. kew. 3. 310. *Curt. magaz.* 288.
Leaves ſmooth ciliate-ſerrate, the middle one very long petioles not glandular.]

32. Paſſiflora incarnata. *Roſe-coloured Paſſion-flower.*
Lin. ſpec. 1360. *ſyſt.* 823. *Reich.* 4. 54. *amoen.* 1. 230. *hort. upſ.* 278. *cliff.* 432. *Jacqu. collect.* 1. 107. *Gron. virg.* 140. *Hern. mex. t.* 888.
Clematis trifolia, flore roſeo clavato. *Baub. pin.* 301. *Mor. hiſt.* 2. 6. *f.* 1. *t.* 1. *f.* 9.
Granadilla Hiſpanis, Flos paſſionis Italis. *Col. Raii hiſt.* 649.
Murucuia maliformis alia. *Maregr. braſ.* 71.
Baſſamina indica repens triphylla, ſ. folio haſtato. *Ambr. phyt.* 89. *t.* 90.
Marococ ſ. Clematis virginiana. *Park. parad.* 393. 10. *t.* 395. *f.* 7.
Leaves ſerrate equal, petioles biglandular.

[33. Paſſiflora aurantia. *Orange Paſſion-flower.*
Forſt. prodr. auſtral. n. 326.
Leaves three-lobed, lobes parabolical diſtant, the middle one more produced.

34. Paſſiflora mixta.
Lin. ſyſt. 823. *ſuppl.* 408. *Smith ic. ined.* 1. *t.* 25.
Leaves trifid ſerrate, flowers tubular, calyxes one-leafed.]

**** *With multifid leaves.*

35. Paſſiflora cœrulea. *Common or blue Paſſion-flower.*
Lin. ſpec. 1360. *ſyſt.* 823. *Reich.* 4. 55. *amoen.* 1. 231. *f.* 20. *hort. upſ.* 278. *cliff.* 432. *Laur. cochinch.* 527. *Sowerby in Linn. tranſ.* 2. 25. *t.* 4. *f. d. Mill. illuſtr. Knorr. del.* 1. *t.* P. *Kniph. cent.* 2. *n.* 50. *Curt. magaz. t.* 28. *Rob. ic.* (Clematis).
Granadilla polyphyllos, fructu ovato. *Tournef. inſt.* 241.
G. pentaphyllos, flore cœrulco magno. *Boerh. lugdb.* 1. 81. *Duham. arb.* 1. 272. *t.* 107.
G. indica ſcandens & ſempervirens, radice repente, foliis palmatis, &c. *Mich. flor.* 46.
Flos paſſionis major petaphyllus. *Sloan. jam.* 1. 229. *Raii ſuppl.* 339.
Leaves palmate quite entire.

[36. Paſſiflora ſerrata. *Serrate-leaved Paſſion-flower.*
Lin. ſpec. 1360. *Reich.* 4. 55. *amoen.* 1. 231. *f.* 21. *Plum. amer.* 62. *t.* 79. *Raii ſuppl.* 340. *n.* 14. (Clematis).
Granadilla polyphyllos fructu colocynthidis. *Tournef. inſt.* 241.
Leaves palmate ſerrate.

37. Paſſiflora pedata. *Curl-flowered Paſſion-flower.*
Lin. ſpec. 1360. *Reich.* 4. 55. *amoen.* 1. 233. *f.* 22.

f. 22. *Plum. amer.* 66. *t.* 81. *Raii suppl.* 341. *n.* 16. (Clematis).

Leaves pedate serrate.

DESCRIPTION, *&c.*

This beautiful genus is compoſed of climbing herbaceous plants, ſometimes woody, eſpecially at bottom. Leaves alternate, ſtipulaceous, ſimple; in a few undivided; in a few others multifid or palmate; but in the greater part lobed: lobes in ſome two, but in more three. In *P. heterophylla*[a], the lower leaves are undivided, and the upper ones pedate. The petiole in ſome ſpecies is naked, in others glandular on each ſide. The tendrils or claſpers by which the ſlender weak ſtems ſuſtain themſelves are axillary. The peduncles are alſo axillary, from one to three together, each ſuſtaining a ſingle flower, (except in *P. holoſericea*, in which they are many-flowered;) below the calyx they are commonly jointed; and have an involucre at the joint, which is frequently three-leaved or three-parted; the diviſions entire, or ſometimes, but rarely, cut or jagged; ſometimes however this involucre is very ſmall, or conſiſts only of one leaf, or is entirely wanting.—This genus, according to Juſſieu, is allied to the *Cucurbitaceæ* in habit, number of parts, lateral receptacles of the ſeed, and petaloid calyx: for he conſiders *Paſſiflora* as having no corolla, but a calyx divided into ten parts; five of which are exterior, and conſtitute the calyx of Tournefort and Linneus; the other five interior and petaloid, the petals of thoſe celebrated authors. This genus however differs from the plants of that natural order in the ſtipules of the leaves, the ſituation of the ſtamens and germs, the crown, the periſperm, and eſpecially in having hermaphrodite, not monoecous or androgynous flowers.

The crown, which Linneus calls the *nectarium*, conſtitutes great part of the beauty of the flower in many of the ſpecies. It theſe it conſiſts of an inner crown, ſpringing from the baſe of the petals or inner calycine ſegments and beneath them, coloured, many-parted, conſiſting of numerous filiform ſegments, radiating or erect: within this is another double crown, of the ſame ſhape, but ſhorter and more flatted, inſerted into the pitcher; the inmoſt frequently converges round the central column[b].

Mr. Sowerby, who has beſtowed much attention on this genus remarks, that the larger ſpecies, as far as he has ſeen, have conſtantly two rows of principal radiated nectaries; the ſmaller commonly but one, and but half the number of diviſions in the corolla, namely, only five, whereas the others have from ten to twelve: that the repoſitory for honey alſo differs much in different ſpecies, and is a part very diſtinct from the crown, which perhaps may ſerve as a conductor, or help to ſcreen or ſecure the nectareous juice: and laſtly, that there is another ſort, which ſerves as an *operculum* under various forms, ſometimes plaited, or plaited and fringed, beſides a kind of imperfect rays, in different ſituations and ſhapes[c].

The fruit is a fleſhy berry, differing in ſhape and ſize, but moſt frequently an oblong ſpheroid, ſometimes covered with a ſolid rind, ſmooth on the outſide (except in *P. rotundifolia*, which is hairy), one-celled, containing numerous, compreſſed ſeeds, covered with a membranaceous pulpy aril: the corcle or embryo is flat, ſurrounded by a thin fleſhy periſperm or albumen[d].

Gærtner remarks, that the ſurface of the albumen being *ſcrobiculate* or full of little pits or holes, the ſeed in this genus may readily be diſtinguiſhed by this mark; which occurs only in *Guajacum*, one ſpecies of *Ucaria*, and a few others beſides.

Juſſieu ſeparates *P. Murucuia* from this genus, as Tournefort had done, under the name of *Murucuia*; on account of the difference in the crown.

Linneus placed this genus in the claſs Gynandria, on account of the ſituation of the ſtamens at the baſe of the germ. Swartz removed it to Monadelphia, becauſe they are united at bottom. Schreber and Thunberg have ſunk it in the ocean of Pentandria.

[a] Plum. ſpec. 7. mſs. 2. t. 21. *Juſſ. gen.* [b] Juſſ. gen.
[c] Linn. tranſ. 2. 19. [d] Juſſ. gen.

1. This is a perennial ſhrubby ſpecies; the ſtems are round; the younger ones very ſlightly villoſe, and climbing very high: the ſtipules are linear and acuminate: the footſtalks of the leaves are furniſhed with two pair of glandules: the leaves are ovate, ſmooth, and ſlightly ſerrated round their whole outline: the peduncles are one-flowered and ſolitary: the calyx is outwardly green, inwardly whitiſh: the petals pale purple: the filaments of the nectary are deep purple at their baſe, from thence blueiſh, and at length pale: the anthers are yellow: the ſtigmas greeniſh. The flowers have an extremely agreeable odour[a].

Mr. Miller has wholly omitted this ſpecies in his deſcriptions, though he has inſerted it in his liſt of ſpecies.

Native of the Weſt Indies. Introduced in 1731, by William Houſtoun, M.D. It flowers from may to october[b].

2. Stem perennial, long, round, branching, climbing by ſolitary tendrils. Leaves ſmooth, oppoſite. Flowers pale, large, axillary, two together. Corolla five-petalled, flat, with a crown. Berry egg-ſhaped, ſmall[c].

Linneus obſerves, in the Amoenitates Academicæ, that the figure by Piſo and Marcgrave approaches to this ſpecies, and is cited as ſuch by Plumier; but that the deſcription which Ray has copied from Marcgrave differs from this in having cordate leaves, a large ſerrated involucrum, and ten petals: and that therefore the figure of Marcgrave relates to this ſpecies, but the deſcription to another.

Native of Braſil, the iſland of Dominica, and Cochinchina.]

3. This has ſlender three-cornered ſtalks, which ſend out tendrils at each joint, faſtening themſelves to any neighbouring ſupport by them, and climbing to the height of twelve or fourteen feet. Leaves about two inches long, and one inch wide, of a light green colour; on ſlender petioles, an inch in length, from which ariſe three longitudinal veins, one running through the middle of the leaf, the other two diverging to the ſides, but drawing towards each other again at the point. Flowers axillary, on ſlender peduncles, an inch long. Calyx compoſed of five oblong, narrow, purpliſh leaves; within which are five narrower petals of the ſame colour, turning back after they have been ſome time expanded. The column in the middle of the flower is very long and ſlender, ſupporting a round germ, from the baſe of which ſpread out five ſlender ſtamens. Fruit oval, about the ſize of a ſparrow's egg, changing to a purple colour when ripe; and filled with oblong ſeeds incloſed in a ſoft pulp.

[Linneus remarks, that the leaves are ovate, but the older ones ſubcordate; that the young ones are ſcarce apparently ſerrate; and that the glands on the petioles are hardly viſible.

According to Dillenius, the ſtem attained the height of three cubits in three years from the ſeed, with few branches. Leaves cloſe, rigid, ſmooth, deep green above, ſomewhat paler underneath. Petals of an obſolete purple colour, or ſuch as is ſeen on poliſhed copper, whence the trivial name. Crown very ſmall; rays ſhort, rigid, ſmooth, ſaffron-coloured, very dark violet and ſhining at the baſe, not ſpreading out but converging, and in the centre a cavity full of clear honey juice. Styles purple, green at the end. Filaments alſo purple. The flowers open in the evening, and laſt a day or two; but have no ſmell[d].]

It grows naturally in the Bahama iſlands, whence Mr. Cateſby ſent the ſeeds to England. [Cultivated by Mr. Miller about 1731.

4. With a perennial root, and a climbing ſtem of about a finger's thickneſs: the leaves cordate, acute, footſtalked, reticulated towards the baſe: the footſtalks deſtitute of glands: the flowers red: the nectaries red with a white ring: the involucres quite entire: the fruit globoſe, and variegated with red and yellow, and having a ſweet pulp.

[a] Jacquin. [b] Hort. kew. [c] Loureiro.
[d] Hort. elth.

Native

Native of South America, about Lima; found there by Feuillée [1].]

5. Stem thick, triangular, by ſlender tendrils thrown out at every joint riſing to the height of fifteen or twenty feet. At each joint is one leaf, ſix inches long, and four broad in the middle, of a lively green and thin texture, having a ſtrong midrib, whence ariſe ſeveral ſmall nerves, diverging to the ſides, and curving up towards the top. Petioles pretty long, having two ſmall glands in the middle. Two large ſtipules encompaſs the petioles, peduncles and tendrils at the baſe. Peduncles pretty long, having alſo two ſmall glands in the middle. The cover of the flower is compoſed of three ſoft velvety leaves, of a pale red, with ſome ſtripes of a lively red colour; the petals are white, and the rays are blue. The flowers being large make a fine appearance, but they are of ſhort duration; there is however a ſucceſſion on them for ſome time. Fruit roundiſh, the ſize of a large apple, yellow when ripe, having a thicker rind than any of the other ſorts; incloſing a ſweetiſh pulp, in which are lodged many oblong black ſeeds, of a browniſh colour, a little rough to the touch. It grows naturally in the Weſt Indies, where the inhabitants call it Granadilla. The fruit is ſerved up there in deſerts.

[Linneus ſays it is a native of Dominica and Tortuga. In the Kew catalogue it is ſaid to be a native of Dominica; and to have been cultivated by Mr. Miller in 1731.

6. Stem almoſt ſimple, thick, membranaceous at the four corners, ſomewhat hiſpid. Leaves petioled, five or ſix inches long, entire, ſomewhat rugged, but without any pubeſcence. Tendrils very long, axillary. Stipules in pairs, ovate, at the baſe of the petioles; on which there are ſix glands. Peduncles oppoſite to the petioles, thicker. Flowers very large, encompaſſed by a three-leaved involucre, the leaves of which are roundiſh, concave, entire, ſmooth, pale. Calyx five-leaved: the leaflets broad-lanceolate, membranaceous at the edge, thick in the middle, ſomewhat ſpongy, very white within. Petals of the ſame ſhape, but thinner, blunter, red within, white on the outſide. Crown five-fold: outer rays in a double row, longer than the petals, filiform, round, white and violet variegated; two inner alſo in a double row, very ſhort, erect; inmoſt flat near the column of the germ. Column ſtraight, cylindrical, variegated. Germ white. Styles purple. Stigmas black, bifid within. Fruit very large, oblong, fleſhy; the pulp purple [2].]

Mr. Miller ſays it has much the appearance of the preceding both in ſtalk and leaves; but the ſtalk has four angles, the leaves alſo of that are not hollowed at the baſe: the flower is much larger, though very like the other in colour; the fruit is near twice as large, and of a very agreeable flavour.

Jacquin remarks that the flowers are very ſweet as well as beautiful, reſembling in colour and ſtructure thoſe of *P. laurifolia*, but a little larger; that the fruit is ſhaped like an egg, ſhining, greeniſh yellow, larger than a gooſe's egg, ſmelling ſweet, having a ſoft ſpongy rind, a finger in thickneſs, brittle, whitiſh, inſipid: the pulp ſucculent, of a wateriſh colour, and ſweetiſh ſmell, and very pleaſant taſte, ſweet and gently acid, contained in a membrane or bag, which may be eaſily ſeparated from the rind.

Mr. Sowerby diſtinguiſhes this from the next ſpecies, with which it has been confounded. They are very much alike, as to general appearance, before they flower, excepting that the leaves in this have generally twice as many ſide veins. The flowering, even at a diſtance, will diſtinguiſh them pretty eaſily, the *quadrangularis* being rather compreſſed and never oblong, as that of the *alata* always is; the former being alſo deſtitute of awns. The glands on the petioles are ſaid to be ſix in this, but it is not conſtantly ſo; and there are ſometimes ſix in the *alata*. The peduncle affords a moſt certain diſtinction. The colour of the plant will not diſtinguiſh them.—He then proceeds to deſcribe the flower thus: Pedunele triangular. Involucre of three large concave oval leaves, ſerrate towards the baſe. Pedicel cylindrical, rather more ſlender at the inſertion into the concave baſe of the flower. Petals ten or twelve, the outer five or ſix thick and ſomewhat ſpongy, a little concave, broad, ending obtuſely and without awns, the inner five or ſix thinner and ſmaller. Principal rays (of the crown) in two rows cloſe to each other, alike, awl-ſhaped and ſtanding perpendicularly, or nearly at right angles with the petals, which they exceed in length. Imperfect rays, four or five rows of irregularly-ſituated protuberances, nearly conical, very ſmall, on an inclined plane. Imperfect operculum, or cover to the antinectary, horizontal, partly divided into rays, which by their tips reſt on a thickened part of the column ſupporting the fructification. This ſeems to be one part more than in any other Paſſiflora. Operculum or cover to the nectary horizontal, and flatiſh at the end, which is edged with two rows of little imperfect or irregular teeth, reſting on the column. Nectary round the concave baſe of the corolla, with a protuberant half partition on the ſide fartheſt from the column [3].

What are here called the petals, Juſſieu regards as the calyx. Linneus takes the middle way, naming the outer leaflets the calyx, and the inner more tender ones the corolla. Mr. Sowerby conſiders the involucre as the perianth. It ſuffices to mention the difference of opinion in a matter of too little conſequence to excite a controverſy. I only remark, that in doubtful caſes of little moment, it is far better to leave things as we find them, than to make changes which only ſerve to breed confuſion.

Native of Jamaica and other iſlands of the Weſt Indies, in woods [4]. Jacquin ſays he did not find it wild any where, but in gardens every where; to the ornament of which it contributes very much, by forming large and very cloſe arbours in a few months. It is attended however with this inconvenience, that theſe arbours ſerve to ſhelter venomous ſerpents, which lurk there to ſeize on little animals that come for the fruit, of which they are very fond.

The fruit is brought to table whole, and is much eſteemed; and the pulp taken out of the rind, with or without the ſeeds, firſt put into wine. The French call it *Granadille*; and Browne, the *Granadilla Vine*.

Jacquin has a variety, which he names *Paſſiflora fulcata*. It perfectly reſembles the *quadrangularis*, except in the ſize and form of the fruit, which is roundiſh, frequently larger than a child's head, and marked with a circular tranſverſe groove, deep enough to lay a finger in. It grows on Terra firma.

P. quadrangularis was cultivated by Mr. Miller in 1768, and flowers in our ſtoves in auguſt and ſeptember [5].

7. This is very like the preceding at firſt ſight; the open flower has alſo a general reſemblance: but the peduncle is cylindrical; the three diviſions of the involucre ſmall, lanceolate, with glandular ſerratures; the pedicel thickeſt at the inſertion into the convex baſe of the flower; the five or ſix outer petals oblong with an awn, the inner longer; the outer principal rays thinneſt and ſhorteſt; imperfect rays in a double row, below and diſtinct from them a ſingle row: no imperfect operculum; operculum partly horizontal and partly turning up to the column, then folding back down again and embracing the column, with which it is ſo connected that it appears inſeparable, but it is not joined to the column; nectary round the column, confined by the baſe of the flower—the column comes to the bottom of it, which is not the caſe in the *quadrangularis* [6].

If this ſpecies does not equal the *coerulea* in elegance, it exceeds it in magnificence, in brilliancy of colour, and in fragrance, the flowers being highly odoriferous [7].—It is a native of the Weſt Indies, and according to the Kew catalogue, was introduced in 1772, by Mr. William Malcolm. Mr. Curtis informs us, the nurſerymen report, that it was firſt raiſed

[1] Linn. amoen. [2] Swartz. [3] Linn. tranſ. [4] Swartz. [5] Hort. kew. [6] Sowerby in Linn. tranſ. [7] Curtis.

in this country, by a gentleman in Hertfordshire, from West Indian seeds.

8. Stem suffrutescent, with very divaricating, filiform branches. Leaves a little emarginate at the base, nerved and very smooth, on short petioles compressed a little, having two glands under the base of the leaf. Tendrils very long. Peduncles the length of the petioles. The three leaflets of the involucre are roundish, concave, with blunt glandular toothlets about the edge, and pale. The five leaflets of the calyx are broad-lanceolate, slightly membranaceous at the edge, horned with a point or awn, smooth, variegated on the inside with blood-red dots. Petals five, the length of the calyx, narrower, acuminate, with blood-red dots scattered over them. Crown triple; the outer rays half the length of the petals, the middle longer than the petals with toothed points, the inner shorter near the column, all variegated with red and violet. Column cylindrical, straight. Filaments variegated. Germ yellow. Styles variegated. Stigmas bifid, black above. Fruit ovate, watery [f].

Jacquin describes it as a woody plant, smooth all over; the younger branches round and green. Leaves some acute, others obtuse, shining, flat. Peduncles solitary. Flowers very handsome and odoriferous. Involucre close to the calyx; leaflets ovate, acute, greenish, either quite entire or having a few teeth. Calycine leaflets pale green on the outside, variegated pale and flesh-colour within. Petals rose-coloured within, pale without. Crown elegantly variegated transversely with white, purple and violet. Fruit three inches long, with a coriaceous, yellow, soft, tough rind, containing a watery, sweet, tasteful juice, having a peculiar fine smell. In the West Indies they suck this pleasant juice through a hole in the fruit. The French call it *Pommes de Liane*, and the English *Honeysuckle*. Browne says it is cultivated in many parts of America for the sake of its fruit, which is very delicate, and much esteemed by most palates; it is about the size of a hen's egg, and full of a very agreeable gelatinous pulp. He calls his fourth species *Water Lemon*, and informs us that it is a native of Jamaica, frequent in the woods, and supplying the wild hogs with a great part of their food in the season. Jacquin says it grows every where in the island of Martinico; Merian in Surinam; it is pretty general in the West Indies. Mr. Bentick introduced it here in 1690. It flowers in june and july [g].

Mr. Sowerby gives the following particulars to distinguish this species. Peduncle, the lower part cylindrical, becoming triangular at the insertion of the involucre, which consists of three large concave obovate leaves, serrate towards their extremities with large glands, ending in two or three simple serratures; pedicel almost conical, narrowing into the deep base of the flower; the six outer petals lanceolate with an awn, the inner smaller; principal rays in two sets, the outer shortest, spreading diagonally, base cylindrical, apex abrupt and irregular, flattish, the inner nearly upright, some a little clavated, others bluntly awl-shaped; imperfect rays in two or three rows irregularly situated; operculum a horizontal plane, touching the base of the column, which confines it by spreading a little over the edge; nectary below the base of the column, round the concave base of the flower.]

9. This has slender stalks, sending out many small branches, and climbing to the height of twenty-five or thirty feet; by age they become woody towards the bottom, and their joints are not far asunder. Leaves on short slender petioles, three inches and a half long, and two broad in the middle, rounded at the base, but terminating in a point at top, smooth, entire, and of a lively green colour. Flowers axillary, on long peduncles. Calycine leaves oblong, green on the outside, but whitish within. Petals oblong, white. Rays blueish purple, inclining to red at bottom. Column short and thick. Germ oval, swelling to the size of a pullet's egg, and changing to a pale yellow when ripe. The flowers have an agreeable odour, but seldom continue twenty hours open: there is a succession of them from june to september, and sometimes the fruit will ripen here.

It grows naturally at La Vera Cruz in New Spain, where it was found by Dr. Houstoun, who sent the seeds to England in 1731. [It had been before found by Plumier in the island of Dominica.

10. Native of Jamaica [h].

11. Stem angular, lanuginose all over. Tendrils simple, smooth. Leaves petioled, rolled back at the edge, sometimes toothletted, veined, smooth above, lanuginose underneath. Stipules in pairs, linear-lanceolate, toothed, sharp. Flowers solitary, peduncled, pendulous, purple. Peduncles round, smooth. Calyx (Involucre) three-leaved, smooth, deciduous, much shorter than the tube. Corolla tubular, as in *Gardenia Thunbergia*, permanent: tube the length of the finger, slightly angular, smooth; border ten-cleft, with the segments ovate, concave, mucronate below the tip, the five outer (calyx) thicker, the five inner (corolla) thinner and more coloured. Nectary (crown) in the throat, very short. Column the length of the tube. Berry ovate, spotted.

Native of New Granada; where it was found by Mutis [i].

12. Stem herbaceous, climbing and twining, three-cornered, subdivided, striated, pubescent. Leaves cordate, ovate, entire, besides the two lobes having a third between them extremely obscure, a very small bristle; they are nerved, smooth on both sides, glaucous underneath and pubescent: the younger ones very thin: at the base the leaves are lobate-cordate, embracing, with the lobes lying over each other, so that the stem is as it were perfoliate: lateral lobes emarginate, with a very short bristle. Petioles very short, curved inwards, round, without glands. Stipules awl-shaped, bent down, at the base of the petiole. Tendrils supraaxillary, very long. Peduncles axillary, solitary, shorter than the leaves. Flowers middle-sized, scarlet. Calyx bell-shaped, growing to the corolla: segments erect, linear, of the same colour with the corolla. Petals between the segments of the calyx, and double their length; lanceolate, from erect spreading. Nectary single, many-parted: segments erect, linear, fleshy, green, with blunt scarlet tips. Column long. Germ ovate. Berry roundish.

Native of Jamaica, in dry hedges near the coast, on the southern side of the island; flowering in the middle of summer [k].

Reichard supposes that this may be the *P. Maracuia* of Miller, *n.* 14.

13. Stem herbaceous, twining round, grooved, hirsute, red. Lobes of the leaves entire, nerved, somewhat hispid, soft. Petioles round, red, villose, without glands. Tendrils subaxillary. Flowers alternate, nodding, on solitary one-flowered peduncles. Calyx ovate at the base: leaflets membranaceous at the edge, white within, green without, villose. Petals whitish or pale flesh-colour. Crown triple: outer rays the length of the petals, multifid, pale red; middle one-leafed, very short, plaited: inner a fleshy white rim. Germ small, villose, green. Fruit spherical, marked with six lines, scarlet when ripe, hirsute; pulp whitish. Seeds black, tuberculed, shining, covered with a pulpy aril [l].

Native of the West Indies. Cultivated in 1748, by Mr. Miller [m]. It flowers in april and may [n].]

14. This has slender angular stalks, which rise twenty feet high, sending out many branches. The flowers and tendrils come out from the same joints. The former are of a pale colour and small. Fruit egg-shaped, ovate, purple, the size of small grapes.

[The lobes of the leaves divaricate at a right angle; and the petioles are without glands [o].

The berry is spherical, herbaceous-fleshy, marked with six streaks, hirsute, pale, hollow. Receptacles linear. Seeds numerous, but only three or four ripening, ovate, pointed at both ends, turgidly lenticular, transversely wrinkled, shining, having an umbilical cord growing close to it on one side, ferruginous. Aril

[f] Swartz. [g] Hort. kew. [h] Swartz. [i] Idem.
[k] Granadilla 10. edit. 5. [l] Hort. kew. [m] Linn. syst.

membranaceous, pedicelled, white, at the top pervious and toothletted. Outer cover cruftaceous, brittle. Albumen fleſhy, hard, ſnow-white [p].

Native of South America.] Mr. Miller ſays it was found by Dr. Houſtoun, growing naturally at La Vera Cruz.

[The root is much extolled by Hernandes, as a counterpoiſon and diuretic, for eaſing pain and creating appetite.

15. Stem herbaceous, grooved, ſmooth. Leaves ovate or oblong, two-horned, with an intermediate briſtle, three-nerved, veined, ſmooth, entire: dots on the back hollowed, pellucid. Petioles grooved, ſmooth, deſtitute of glands. Tendrils ſubaxillary, filiform, long. Flowers in pairs, axillary, ſcarlet, large. Peduncles longer than the petioles, having two very ſmall, filiform ſtipules in the middle. Petals almoſt upright, blunt, a little ſmaller than the calyx. Nectary one-leafed, tubular, growing to the petals and calyx, with a yellow crown at the throat. Column longer than the corolla, erect. Berry ovate, the ſize of a pigeon's egg, pedicelled [q].

According to Browne, it is of an oblong oval form, about the ſize of a large Olive, and fleſh-coloured when ripe. Both the ſyrup and decoction of the plant is much uſed in the leeward parts of Jamaica, where it is frequent; and it is ſaid to anſwer effectually all the purpoſes for which ſyrup of Poppies and liquid Laudanum are generally adminiſtered. The flowers are moſt in uſe: they are commonly infuſed in, or pounded, and mixed immediately with wine or ſpirits; and the compoſition generally thought a very effectual and eaſy narcotic. Browne names it *Bull-hoof* or *Dutchman's Laudanum*, which are probably the vulgar names of the country.

Native of the Weſt Indies.]

16. This has ſlender, ſtriated [roundiſh ſtalks, leſs than a ſtraw, and of the ſame thickneſs from top to bottom,] of a browniſh red colour, dividing into many ſlender branches. Leaves ſhaped like the wings of a bat when extended, about ſeven inches in length or rather breadth, from the baſe to the top not more than two inches and a half, [the upper ones ſmaller, the middle wider, and the lower narrower, ſmooth and ſomewhat ſhining, the colour in the upper ones pale, in the middle deeper, in the lower darker green, with two purple tubercles or glands towards the baſe, where they are connected with the petiole;] which is ſet half an inch from the baſe of the leaf, three nerves ſpringing from it, two extending each way to the narrow points of the leaf, the other riſing upright to the top, where is the greateſt length of the leaf. [Flowers on ſhort round peduncles from the axils of the middle and upper leaves, white and of a middle ſize,] about three inches in diameter when expanded: [calyx greeniſh on the outſide, whitiſh within: petals ſomewhat ſmaller, white: rays very long and white, twiſted in the middle; at the baſe of theſe others more ſlender, like hairs; next to them a ring of white plaited ſcales collected into a ſhort tube, from the middle of which ariſes the ſhort purple column, ſupporting the germ, which is green and of an oblong ſpheroidal form. The flowers are without ſcent, open in the evening or during the night, in the month of July, and finally cloſe about eight or nine o'clock in the morning.

Dr. Sherard received it from the Amſterdam garden, without any notice of its native place of growth [r]. It is however a native of the Weſt Indies.] Mr. Miller, who cultivated it about the ſame time, ſays that it was diſcovered by Mr. Robert Millar, growing naturally near Carthagena in New Spain.

17. [Stems ſeveral, above thirty feet high in a cultivated ſtate, roundiſh and woody at the baſe: in the upper part acutely angular, ſtriated, almoſt herbaceous, nearly ſmooth, alternately branched. Lobes of the leaves very remote, elongated, entire, obtuſe, terminated by a ſmall briſtle, ſimilar to one placed between them in the middle of the leaf, each marked by a ſeries of nectariferous dots between the larger veins; leaves veined, bright green and ſmooth above, underneath a little glaucous, permanent; on ſhort, roundiſh petioles, ſlightly downy, without glands. Stipules ſmall, ſemilanceolate, acute, entire, ſmooth. Tendrils axillary, ſimple, very long, ſmooth. Flowers axillary, two together, drooping, opening early in the day, and ſmelling like honey. Peduncles twice as long as the petioles, round, ſwelling at the top, ſlightly downy, each bearing a ſingle flower. Bractes three, ſmall, ſetaceous, below the joint, at a little diſtance from each other. Corolla flattiſh at the baſe, deeply divided into ten ſegments, whitiſh and ſmooth; ſegments oblong, ovate, obtuſe; the five outermoſt (calyx) thickeſt, externally green; the innermoſt (petals) narrower and ſhorter. External crown of the nectary conſiſting of about thirty yellow rays, a little ſhorter than the corolla: middle, of greeniſh capillary rays, much ſhorter: innermoſt, a ſingle, green, plaited, truncated membrane, cloſely covering the cell where the honey juice is lodged. Genitals as long as the corolla, ſmooth. Column cylindrical, thickiſh, white. Germ oval, ſlightly triangular [s].

Mr. Sowerby remarks that the flower is much ſmaller than in *quadrangularis*, *alata*, *laurifolia*, and *cærulea*; and is remarkably different in having but one row of principal rays, and that of a quadrangular form; with the operculum or cover of the nectary curiouſly plaited: but this is a common caſe with the ſtill ſmaller ones [t].

The deſcription of *P. punctata* in Linn. ſyſt. veg. belongs to this plant, as well as his obſervation in his Mantiſſa, p. 492. but the latter is ſo obſcure and erroneous, that it neither agrees with the plant, nor with the original manuſcript from which it was printed [u].

It was gathered at Vera Cruz by Dr. Houſtoun, who ſent ſeeds of it to Mr. Miller [x]. It was alſo found by Dr. Wright in Jamaica [y].]

18. Stalks ſlender, riſing to twenty feet high when ſupported, and dividing into many weak branches. Leaves four inches long and three broad, ending at their points in two horns, in ſome more acute than in others, ſeveral of them appearing as if cut a little hollow at the top, like thoſe of the Tulip-tree: they have three longitudinal veins, which join at the baſe of the leaf to the foot ſtalk, but the two outer diverge towards the borders of the leaf in the middle, drawing in again at the top; they are of a deep green on their upper ſide, but pale underneath, and ſtand on ſhort foot-ſtalks. Peduncles very ſlender, an inch and half long, purpliſh. Flowers, when expanded, not more than an inch and half in diameter, of a ſoft red colour, with little ſcent. Fruit ſmall, oval, when ripe purple.

Native of Jamaica; whence Dr. Houſtoun ſent the ſeeds to England.

[19. Stem ſuffrutеſcent at bottom, ſubdivided, angular, grooved. Leaves ſemiovate, three-nerved, veined, ſmooth on both ſides, marked behind longitudinally with pellucid dots: lobes terminated by very ſmall briſtles; the middle one a little larger than the others. Petioles ſhort, without glands. Tendrils filiform, very long. Stipules two, oppoſite, awl-ſhaped. Peduncles axillary, filiform, an inch long. Flowers nodding, pale green, rather large. Calycine ſegments ovate, acute, erect, concave, forming a goblet at the baſe. Petals ſemilanceolate, acute, erect, pale green. Crown ſimple; the ſegments awl-ſhaped, erect, converging, having tawny glands at the tip. Column longer than the corolla, round. Filaments awl-ſhaped, dilated. Germ roundiſh. Berry egg-ſhaped.—It is diſtinguiſhed from the other ſpecies by its rounded leaves ſlightly three-lobed at top only [z].

Jacquin obſerves, that the glandular dots on the under ſide of the leaf are ſix or ſeven in a longitudinal row along the inner ſide of the two lateral nerves; that the ſtipules are acuminate, ſhining, embracing, and reſembling bull's horns; that the peduncles are the ſame length with the leaves; that the flowers are middle-ſized and void of ſcent; that there is a three-leaved involucre; the leaflets ovate, concave, ſmall, firm,

[p] Gærtner. [q] Swartz. [r] Dillen. elth.
[s] Smith. [t] Linn. tranſ. [u] Smith. [x] Mant. dec. [y] Hort. kew. n. 9. [z] Swartz.

firm, ſhining, ſmooth, yelloviſh with a tinge of green; that the petals are white and twice as long as the calyx; the nectary multifid and yellow; that the berry is roundiſh, ſmall and juiceleſs; and that in moſt of the leaves the middle lobe is ſcarcely to be obſerved. He ſays it is very common in the woods about Carthagena in New Spain. Swartz found it in coppices on the ſouthern ſide of Jamaica; flowering at the beginning of the year. According to the Kew catalogue, it was introduced in 1786.

20. Native of the iſland of Jamaica[a].

21. This ſpecies was known to Linneus, who had never ſeen it, only by the deſcription of Feuillée. Cavanilles has given a figure of it from a plant which flowered in the royal garden at Paris[b]. It is a native of Peru.]

22. Root creeping, ſending up many weak ſtalks three or four feet high. Leaves ſhaped like thoſe of Ivy, and almoſt as large, but of a pale green and very thin conſiſtence. Peduncle ſlender, an inch and half long. Flowers dirty yellow, not larger than a ſixpence when expanded.

Native of Virginia and Jamaica. [Cultivated here in 1714. It flowers in may and june[c].

23. Native of Jamaica[d].

24. The whole plant is very ſmooth and even. Leaves glaucous underneath, undotted. Petioles furniſhed with two or four glands below the middle. Stipules acute, quite entire, more than half an inch in length. Calycine leaflets lanceolate, green underneath, whitiſh above, a little more than an inch in length. Petals lanceolate, blunt, white, the length of the calyx. Nectary ſhorter by half than the petals: rays violet, white at the tip. Flowers ſweet.

Native of Cayenne. Introduced in 1779, by Meſſ. Kennedy and Lee[e].

25. Stem twining, ſimple, becoming corky at the baſe with age, round, ſmooth. Leaves ſubpeltate, ſubcordate: lateral lobes almoſt horizontal; all acute, nerved, ſmooth on both ſides. Petioles ſhort, round, reflex, ſmooth. Glands two oppoſite, ſmall, ſeſſile, concave, brown, in the middle of the petioles. Stipules two, oppoſite, awl-ſhaped, by the ſide of the petioles. Tendrils long, between the petioles. Peduncles axillary, ſolitary, longer than the petioles, looſe, one-flowered. Flowers ſmall, whitiſh. Calyx none, except the flattiſh baſe of the corolla. Petals five, lanceolate, reflex at the tips. Nectary four-fold: inmoſt, a membranaceous rim, entire, brown, at the baſe of the column: inner one-leafed, plaited, crenate, duſky purple: outer ciliated with capillary erect hairs, black with yellow tips: outmoſt with cilias twice as long as the others, reflex, very dark purple, yellow from the middle to the tip. Column longer than the corolla. Germ roundiſh. Berry ſmall, blue, egg-ſhaped.

It is nearly allied to *P. ſuberoſa*; but differs in the lobes of the leaves being narrow and divaricated: the ſtem herbaceous, becoming like cork only when old; and the flowers ſmaller[f].

Mr. Sowerby remarks, that though this has its name from its ſmallneſs, there are others nearly if not quite as ſmall, and not well diſtinguiſhed; that ſeveral of them have no involucre, though there is a joint on the peduncle, or as he has it, between the peduncle and pedicel; and that they have but five petals, conſequently nothing that ſerves as a calyx.

He thus deſcribes the flower of this ſpecies: Peduncle cylindrical. Pedicel alſo cylindrical, curved a little, thickeſt at the flat baſe of the flower. Petals lanceolate, turned back. Principal rays cylindrical, ſpreading, curved back. Imperfect rays moſtly clubbed, ſometimes bifid. Operculum plaited and fringed at the edge. Nectary as in *lunata*, except that at the ridge of the protuberating bank are ſome ſmall, regular roundiſh glands or imperfect rays[g].

Native of Curaſſao[h], and Jamaica[i]. Introduced in 1690 by Mr. Bentick. It flowers in july[k].

26. Native of the Weſt Indies. Introduced about 1773. It flowers from june to ſeptember[l].]

27. This riſes with a weak ſtalk to the height of twenty feet. As the ſtalks grow old, they have a thick fungous bark like that of the Cork-tree, which cracks and ſplits. The ſmaller branches are covered with a ſmooth bark. Leaves ſmooth, on very ſhort petioles. The middle lobe is much longer than the lateral ones, ſo that the whole leaf is halbert-ſhaped. The flowers are ſmall, of a greeniſh yellow colour. Fruit egg-ſhaped, dark purple when ripe.

[Stem perennial. Flowers axillary, in pairs, white, apetalous. Leaves in the young plants peltate, but ſcarcely ſo when farther advanced; always ſhining, very ſmooth. Petioles without glands[m].

The fruit is thus deſcribed by Gærtner. Berry elliptic (an oblong ſpheroid, or ſhaped like an olive) very ſmooth, dark blue, filled with a watery pulp. Seeds twelve, obovate, mucronate at both ends, full of little pits, having an umbilical cord faſtened to it at one edge, ſhining, blackiſh. Acil membranaceous-pulpy, tranſparent, not peduncled, with the mouth obliquely truncated, toothleſs. Shell of the ſeed cruſtaceous, brittle. Albumen ſnow-white, full of pits like the ſhell. Embryo almoſt the length of the albumen.

Jacquin remarks that Plumier's figures do not agree with this plant.

Native of the Weſt Indies. Cultivated in 1759 by Mr. Miller. It flowers from june to ſeptember[n].]

28. The ſtalks riſe twenty feet high, dividing into many ſlender branches, covered with a ſoft hairy down. Leaves ſhaped like the point of a halbert, three inches long, and an inch and half wide at the baſe, light green, ſoft and ſilky to the touch, ſtanding obliquely to the footſtalks. Flowers not half ſo large as thoſe of the common or blue Paſſion-flower. Petals white. Rays purple with a mixture of yellow. Fruit ſmall, roundiſh, yellow when ripe. [The petioles have two oppoſite glands. Leaves ovate, tomentoſe on both ſides: lateral lobes ſhort; with an obſolete gland underneath behind the ſinus of the lobe[o].]

It was diſcovered by Dr. Houſtoun, growing naturally at La Vera Cruz: [and therefore was introduced before 1733, in which year he died. It flowers moſt part of the ſummer[p].

29. Native of the Weſt Indies. Introduced in 1778, by Mr. Gilbert Alexander. It flowers in ſeptember[q].]

30. Root annual, [or rather biennial.] The ſtalks riſe five or ſix feet high, when ſupported; they are channelled and hairy. The middle lobe of the leaf is three inches long, and one and a half broad; the two ſide-lobes are ſhort but broad; they are covered with ſhort brown hairs. Flowers on ſtrong hairy peduncles, two inches long. Calyx compoſed of ſlender hairy filaments, wrought like a net, longer than the petals, and turning up round them. They are white, and of ſhort duration. Fruit roundiſh-ovate, about the ſize of a golden Pippin, of a yelloviſh green colour, incloſed in the netted calyx. The whole plant has a diſagreeable ſcent when touched.

[The ſtipules are ciliary. The petioles have viſcid hairs but no glands. The involucre, (which Mr. Miller calls the calyx) reſembles that of *Nigella damaſcena*[r].

Berry oblong-ſpheroidal, pedicelled, villoſe, marked with three lines of a deeper colour longitudinally, green on the outſide, within ſilky white, membranaceous. Rind thin. Cavity empty, inflated. Seeds numerous, but ſcarcely twelve ripening in Europe, oblong-ſpheroidal, peduncled, hanging down from three lines in the ſhell of the berry. They are præmorſe and three-toothed at the top, in other parts compreſſed a little, pitted, of a dark cheſtnut colour. Covers three; the outmoſt pulpy, but becoming dry; the middle cruſtaceous, hard, brittle, deeply pitted; the inner membranaceous, white. Albumen ovate-oblong, truncated above, pitted and almoſt like a ſieve from the impreſſions of the middle coat: fleſhy, white. Embryo ſhorter by half than the albumen, milk-white. Cotyledons cordate-orbiculate, leafy,

[a] Swartz. [b] Smith ic. rar. [c] Hort. kew. [d] Swartz. [e] Hort. kew. [f] Swartz. [g] Linn. tranſ. [h] Linn. [i] Swartz. [k] Hort. kew. [l] Idem.

[m] Linn. ſpec. & ſyſt. [n] Hort. kew. [o] Linn. ſyſt. [p] Hort. kew. [q] Idem. [r] Linn. ſyſt.

very thin. Radicle ſhort, thicker outwards, centrifugal [t].]

It grows naturally in moſt of the iſlands of the Weſt Indies, where the Britiſh inhabitants call it *Love in a Miſt* [which is one vulgar name of *Nigella damaſcena*, that it reſembles in the involucre. It was cultivated by Mr. Miller in 1731; and flowers in july and auguſt.

31. Native of Jamaica. Cultivated in 1783, by Mrs. Norman [u]. It runs to a great height, and has dark-green gloſſy leaves; the involucrum is compoſed of three leaves divided into capillary ſegments, each terminating in a viſcid globule: the pillar ſupporting the germen is bright purple with darker ſpots: the petals are greeniſh on the outſide, and red within. The crown conſiſts of four rows of radii [x], which are varied with white and purple. The leaves of this ſpecies vary occaſionally, and Mr. Curtis ſuſpects it to be a variety of *P. fœtida*.]

32. Root perennial. Stalks annual, ſlender, riſing four or five feet high. At each joint one leaf, on a ſhort foot-ſtalk, having moſtly three oblong lobes, but the two ſide ones are ſometimes divided part of their length into two narrow ſegments, and thus becoming five-lobed; they are thin, of a light green, and ſlightly ſerrate. The flowers are produced from the joints of the ſtalk, at the foot-ſtalks of the leaves, on long ſlender peduncles, in ſucceſſion as the ſtalks advance in height during the ſummer months. Calycine leaflets oblong, blunt, pale green. Petals white, with a double circle of purple rays, the rays of the lower circle longeſt. The flowers have an agreeable ſcent, but are of ſhort duration, opening in the morning, and fading away in the evening. Fruit as large as a middling Apple, changing to a pale orange colour when ripe; incloſing many oblong rough ſeeds, lying in a ſweetiſh pulp.

It grows naturally in Virginia and other parts of North America, and was the firſt known in Europe of all the ſpecies, but was not very common in the Engliſh gardens till of late years.

[It was cultivated here in 1629, according to Parkinſon [y], who has given a good figure and deſcription of it, with a copy of the Jeſuite's ſophiſticated figure to contraſt with his own, and a copious abuſe of their attempts to deceive mankind.

33. Native of New Caledonia [z].

34. Stem angular, ſmooth. Leaves petioled, ſmooth on both ſides, veined underneath; lobes equal, divaricated, acute. Stipules in pairs, creſcent-ſhaped, embracing, acute at the top, toothed. Flowers ſolitary, peduncled, nodding, red; on round, pubeſcent peduncles. Calyx (or involucre) tubular, pubeſcent, three or five-cleft at the top, one-third of the length of the corolla. Corolla alſo tubular, the whole of it very ſoftly pubeſcent before it expands. Tube the length of the finger, round, pubeſcent. Border ten-cleft: ſegments ovate; the five outer (calyx) pubeſcent at the back, terminated by a filiform pubeſcent point below the tip; the five inner (petals) ſmooth, with a very ſmall point. Nectary very ſhort, in the throat. Column the length of the tube. Berry obovate, ſmooth.—Native of New Granada, whence it was ſent by Mutis.

Dr. Smith collects from this ſpecies and *P. adulterina*, that the flower of *Paſſiflora* is ten-petalled; and that what Linneus calls the involucre is the calyx. Juſſieu on the contrary calls the whole the calyx, and aſſerts the Paſſiflora to have no corolla. In moſt of the ſpecies the involucre cannot properly be regarded as a perianth, and even in this ſpecies it is permanent, and in the fruiting ſtate at a conſiderable diſtance from the fruit.]

35. This riſes in a few years to a great height with proper ſupport. It may be trained up more than forty feet high. The ſtalks will grow almoſt as large as a man's arm, and are covered with a purpliſh bark, but do not become very woody. The ſhoots often grow to the length of twelve or fifteen feet in one ſummer, and being very ſlender muſt be ſupported, otherwiſe they will hang to the ground, intermix with each other, and appear very unſightly. At each joint is one leaf compoſed of five ſmooth entire lobes; the middle one, which is longeſt, almoſt four inches long, and one inch broad in the middle, the others are gradually ſhorter, and the two outer lobes are frequently divided on their outer ſide into two ſmaller ones. Their foot-ſtalks are near two inches long, and have two embracing ſtipules at their baſe; and from the ſame point iſſues a long claſper or tendril. The flowers come out at the ſame joint with the leaves, on peduncles almoſt three inches long. The outer cover (or involucre) is compoſed of three concave ovate leaves, of a paler green than the proper leaves of the plant, and are little more than half the length of the calyx; the leaflets of which are oblong, blunt, pale green: the petals are nearly of the ſame ſhape and ſize, and ſtand alternately between them. Column about an inch long. Germ oval. Styles purpliſh, near an inch long. Rays of the crown in two circles; the inner, which is the ſhorteſt, inclines towards the column; the outer, which is near half the length of the petals, ſpreads open flat upon them, and is purple at bottom, but blue on the outſide. The flowers have a faint ſcent, and continue but one day. Fruit egg-ſhaped, the ſize and ſhape of the Mogul Plum, and when ripe, of the ſame yellow colour, incloſing a ſweetiſh diſagreeable pulp, in which are lodged oblong ſeeds.

[Linneus remarks, that the petioles have two glands on them, and the ſtipules are creſcent-ſhaped [a].

Peduncle cylindrical, ſwelling a little at the baſe. Pedicel alſo cylindrical, thickening at each end. The outer five or ſix petals (or calycine leaflets) a little fleſhy, oblong, rather obtuſe; inner narrower and thinner, about the ſame length. Principal rays of the crown in two rows horizontal, thread-like, a little pointed, nearly alike, under each other. Imperfect rays in one regular row, with roundiſh heads, on little footſtalks ſtanding erect on an horizontal elevated plane at the baſe of the principal rays: within theſe imperfect rays are a very different ſet, entire at the inſertion, divided into threads about half way down, and inclining againſt the column. On the under ſide is a protuberance, which catches the margin of the operculum; and that ſpreads from the column under the aforeſaid rays. Nectary round the baſe of the column, with a thick protuberance round the ſide of the lower part of the flower, on which reſts the operculum and which almoſt divides it into two cells [b].]

There is a variety of this with much narrower lobes, divided almoſt to the bottom. The flowers come later in the ſummer; the petals are narrower, and of a purer white.

There is a variety alſo of the *fœtida*, (n. 30.) if it is not a diſtinct ſpecies, with hairy narrower lobes. The whole leaf is ſhaped more like the point of a halbert, and the upper ones having very ſmall indentures, approach to ſimple leaves without lobes. The flowers are alſo ſmaller, but of the ſame form, and the roots are of a ſhorter duration.

The blue Paſſion-flower grows naturally in Brazil. Being hardy enough to thrive in the open air, it is now become the moſt common ſpecies in England, [though it was introduced long after the *incarnata*. It was cultivated in 1699, by the Dutcheſs of Beaufort [c].

36. Stems woody. At each knot, about half a foot diſtant, a ſingle leaf, nearly the ſize of the hand extended, ſmooth, divided into ſeven lobes, which widen towards the end, acuminate, reaching almoſt to the petiole, which is four or five inches in length. A tendril and a flower come out from the ſame point with the leaf. Peduncle two inches long. The flower is incloſed in an involucre, and together are larger than a hen's egg. The involucre opens into three equal whitiſh leaves, dotted on the inſide, and ſtreaked with

[t] Gærtner. [u] Hort. kew.
[x] Mr. C. probably means by this that the crown is marked by four circles alternately purple and white.
[y] Hort. kew. [z] Forſter.
[a] Syſt. [b] Sowerby in Linn. tranſ. [c] Hort. kew.

a few purple veins. The lower half of the flower when expanded reſembles a cup with a pentagon rim, white on the inſide, hairy at bottom; the hairs very ſhort, with a little red gland at top: it is furrounded with a double fringe, the threads of which are a line in thickneſs, tender and pointed, almoſt ſquare and contiguous: the outer row an inch and half long, the inner an inch; all white towar ls the end, thence violet to the middle, the lower part pale; adorned with five bands; ſtanding right up: the inner row is a little more depreſſed, but has the ſame colour and conſiſtence with the outer. The corolla is compoſed of ten violet-coloured petals in two rows, five in each, the inner much narrower than the outer, all an inch and half long, with a ſmall point at the end verging outwards. In the centre of the cup is a ſort of baſe, of a cylindrical form, from three to four lines in thickneſs, excavated with a little trench, and furrounded by many very ſhort hairs of a ruſſet colour. * On this is placed the column, which is white, ſmall, perfectly round, eight or nine lines in height, and a line and half in diameter. Fruit the ſize of an Orange, round, poliſhed, like that of Coloquintida, except that next the peduncle it is drawn out like a Pear. It is filled with a white mucilaginous pulp, containing many ſeeds, a little larger than grains of wheat, oval, a little compreſſed, pointed at one end, hardiſh, ſhining, hairy.—Native of the iſland of Martinique.

37. Stems angular. Leaves pedate; a petiole two or three inches long, being divided into three others ſhorter and more ſlender, the middle ſuſtaining one leaf only larger than the reſt, the two others forked, the leaflet next the middle one of the ſame form but ſmaller, the outer ſtill ſmaller, cut to the baſe, but the ſegment next the petiole reſembling rather an earlet than a leaflet: each taken ſeparately is ſomewhat like a bay-leaf: they are all toothletted, ſmooth, ſhining, bright green, paler underneath: the middle leaflet is four inches long, and almoſt two wide; the leaſt is not more than an inch in length, and half an inch in width. The flowers are a little larger than thoſe of the preceding. The rays of the crown are very cloſe, deep red with two or three white rings, very ſlender at the end and violet; they are twiſted ſo as to reſemble the ſerpents about Meduſa's head. The five inner parts of the corolla are entirely blue; the five outer pale green within with abundance of little red dots, on the outſide clear green. The three leaves of the involucre are hollowed out like the bowl of a ſpoon, fringed all round, deep green, with many ribs underneath. Fruit the ſize and form of a middling Apple: rind regular and ſmooth, of a ſhining green colour, with ſtill brighter dots.

Native of the iſland of Dominica [b], and other iſlands of the Weſt Indies. Introduced in 1781, by Mr. Francis Maſſon [c].

The following diſtinctions, however incomplete, may aſſiſt in diſcriminating the ſpecies. The Stem is round in n. 2. 8. 9. 13. 16. 25. 32. 36. Angular in n. 11. 14. 15. 17. 19. 34. 37. Triangular in n. 3. 5. 12. Quadrangular in n. 6. The Leaves in moſt of the ſpecies are alternate: in n. 2. they are oppoſite. They vary in form: in n. 19. they are roundiſh: in many, the leaves or leaflets are ovate, as in n. 1. 2. 3. 8. 12. 15. 23. 28.: oblong in n. 9. 18. 21. 29.: oblong-oval in n. 11.: cordate in n. 4. 5. 6. 7. 12. 13. 18. 22. 24. 25. 30.: creſcent-ſhaped in n. 16. 17.: palmate five-lobed in n. 35.: palmate ſeven-lobed in n. 36.: pedate in n. 37.: in general the leaves or lobes are entire on the edge, but in n. 1. 36. 37. they are ſerrate. The Petioles in many ſpecies have a pair of glands on them, as in n. 2. 3. 5. 7. 8. 23. 25. 26. 28. 29. 32. 35.: in n. 3. they are ſcarcely viſible: in n. 24. there are ſometimes two, and ſometimes four glands: n. 6. has ſix glands: in n. 4. 12. 13. 14. 15. 16. 17. 19. 22. the petiole is naked: and in n. 16. 17. the leaves themſelves are glandular near the baſe.

The Flowers in moſt of the ſpecies are ſolitary, or come out ſingly from the axil of a leaf: but in n. 2. 15. 17. 27. they come out two together; and in n. 9. ſeveral together. Their colours are various. Pale in n. 2. 14. 19. 27. White in n. 16. 30. White and pale red in n. 13. 32. White and blue in n. 9. 24. White red and blue in n. 5. 6. 7. 8. White green and yellow in n. 17. White purple and yellow in n. 25. 28. White purple and blue in n. 36. Red in n. 18. 34. Scarlet in n. 12. 15. Red green and blue in n. 37. Purple in n. 3. 11. Yellow in n. 22. Theſe colours take in the rays, and as uſual are by no means certain. The Crown, which conſtitutes great part of the ſingular beauty of this flower in many ſpecies, is ſingle in n. 12. 19. double in n. 32. 35. triple in n. 3. 8. 13. 16. 17. quadruple in n. 25. and quintuple in n. 6. 7. In n. 16. it is very long; and in n. 11. 34. it is very ſhort. N. 30. is diſtinguiſhed from all the reſt by its capillary-multifid involucre, reſembling that of Devil-in-a-buſh.

The Fruit in moſt of the ſpecies is egg-ſhaped, more or leſs prolonged. It is obovate in n. 34.: ſpherical in n. 13. 14.: roundiſh in n. 5. 12. 28. 32. 36. 37. It is of various colours: purple in n. 3. 12. 14. 18. 27.: fleſh-coloured in n. 15.: ſcarlet in n. 18.: pale orange in n. 32.: yellow in n. 5. 8. 9. 28. 35.: greeniſh yellow in n. 6. 30. 36.: green in n. 37.: blue in n. 25.: ſpotted in n. 11.

Theſe beautiful plants were unknown till the diſcovery of America. They are found in various parts both of the Continent, chiefly of South America, and of the Iſlands. N. 35. is found in Brazil: n. 24. in Cayenne: n. 3. in the Bahama iſlands: n. 22. and 32. in Virginia.]

PROPAGATION AND CULTURE.

All the perennial ſorts which are natives of the hot parts of America, require a ſtove to preſerve them here, without which they will not thrive; for although ſome of the ſorts will live in the open air during the warm months in ſummer, yet they make but little progreſs; nor will the plants produce many flowers, unleſs the pots in which they are planted are plunged into the tan-bed of the ſtove, and their branches are trained againſt an eſpalier. The beſt way to have them in perfection, is to make a border of earth at the back of the tan-bed, which may be ſeparated by planks to prevent the earth from mixing with the tan; and when the plants are ſtrong enough, they ſhould be turned out of the pots, and planted in this border; adjoining to which, ſhould be a trellis erected to the top of the ſtove; againſt this the ſtalks muſt be trained, and as they advance they will form a hedge to hide the wall of the ſtove, and their leaves continuing green all the year, together with their flowers, which will be plentifully intermixed in ſummer, will have a very agreeable effect.

As there will be only a plank partition between the earth and the tan, the earth will be kept warm by the tan-bed, which will be of great ſervice to the roots of the plants. This border ſhould not be leſs than two feet broad and three deep, which is the uſual depth of the pit for tan; ſo that where theſe borders are intended, the pits ſhould not be leſs than eight feet and a half or nine feet and a half broad, that the bark-bed, excluſive of the border, may be ſix and a half or ſeven feet wide. If the border is fenced off with ſtrong ſhip planks, they will laſt ſome years, eſpecially if they are well painted over with a compoſition of melted pitch, brick-duſt and oil, which will preſerve them ſound a long time; and the earth ſhould be taken out carefully from between the roots of the plants, at leaſt once a year, putting in freſh; with this mangement, I have ſeen theſe plants in great perfection. But where there has not been this conveniency, I have turned the plants out of the pots, and planted them into the tan-bed when it was half rotten, into which they have rooted exceedingly, and have thriven for two or three years as well as could be deſired, but when their roots extended to a great diſtance in the tan-bed, they have been injured by renewing the bark; and when it has fermented pretty violently, the roots have been ſcalded, and the plants have been killed, ſo that the other method is more eligible.

Theſe plants are propagated by ſeeds, which ſhould be ſown upon a good hot-bed in the ſpring, and when the

[b] Plumier. [c] Hort. kew.

the plants are fit to remove, they ſhould be each planted in a ſmall pot filled with good kitchen-garden earth, and plunged into a bed of tanner's bark, obſerving to ſhade them from the ſun till they have taken new root; then they muſt be treated like other tender plants from the ſame countries. When they are too high to remain under the glaſſes of the hot-bed, they ſhould be turned out of the pots and planted in the ſtove, in the manner before mentioned.

As theſe plants do not often perfect their ſeeds here, they may be propagated by laying down their branches, which, if done in april, they will put out roots by the middle of auguſt, when they may be ſeparated from the old plants, and either planted in pots to get ſtrength, or into the border of the ſtove, where they are to remain.

Some of theſe ſorts may alſo be propagated by cuttings; theſe ſhould be planted into pots about the middle or latter end of march, and plunged into a moderate hot-bed, obſerving to ſcreen them from the ſun, and refreſh them with water gently, as often as the earth may require it; and in about two months or ten weeks, they will put out roots, and may then be treated as the ſeedling plants.

22. The Yellow Paſſion-flower may be propagated by its creeping roots, parted in april, and planted where they are to remain. This will live in a warm border, if treated as directed for n. 32. It lived many years in a ſouth-weſt border in the Cheſſea garden, but in the year 1740 all the plants were killed by the froſt.

30. Is propagated by ſeeds, ſown upon a hot-bed early in the ſpring. When the plants are fit to be removed, tranſplant each into a ſmall pot filled with light kitchen-garden earth; plunge them into a hot-bed again, and ſhade them from the ſun till they have taken new root. Shift them into larger pots as the roots increaſe; and when the plants are too tall to remain in the hot-bed, remove them into an airy glaſs-caſe; admitting air in warm weather but ſcreening them from cold. In this ſituation the plants will flower in july, and the ſeeds ripen in autumn.

32. This ſort is uſually propagated by ſeeds which are brought from America, for the ſeeds do not often ripen in England; though I have ſometimes had ſeveral fruit perfectly ripe on plants, which were plunged in a tan-bed under a deep frame; but thoſe plants which are expoſed to the open air, do not produce fruit here. The ſeeds ſhould be ſown upon a moderate hot-bed, which will bring up the plants much ſooner than when they are ſown in the open air, ſo that they will have more time to get ſtrength before winter.

When the plants are come up two or three inches high, they ſhould be carefully taken up, and each planted in a ſeparate ſmall pot filled with good kitchen-garden earth, and plunged into a moderate hot-bed to forward their taking new root; after which they ſhould be gradually inured to bear the open air, to which they ſhould be expoſed in ſummer, but in the autumn they muſt be placed under a garden-frame to ſcreen them from the froſt, but they ſhould have the free air at all times in mild weather. The ſpring following ſome of theſe plants may be turned out of the pots, and planted in a warm border, where, if they are covered with tanner's bark every winter to keep out the froſt, they will live ſeveral years, their ſtalks decaying in the autumn, and new ones ariſing in the ſpring, which in warm ſeaſons will flower very well. If thoſe plants which are continued in pots are plunged into a tan-bed, ſome of them may produce fruit; and, if the ſtalks of theſe are laid down in the beginning of june, into pots of earth plunged near them, they will take root by the end of auguſt.

35. The common or blue Paſſion-flower may alſo be propagated by ſeeds, which ſhould be ſown in the ſame manner as thoſe of the thirty-ſecond ſort, and the plants treated in the ſame way till the following ſpring, when they ſhould be turned out of the pots, and planted againſt a good aſpected wall, where they may have height for their ſhoots to extend, otherwiſe they will hang about and entangle with each other, ſo as to make but an indifferent appearance; but where buildings are to be covered, this plant is very proper for the purpoſe. After they have taken good root in their new quarters, the only care they will require, is to train their ſhoots up againſt the wall, as they extend in length, to prevent their hanging about, and if the winter proves ſevere, the ſurface of the ground about their roots ſhould be covered with mulch to keep the froſt from penetrating the ground; and if the ſtalks and branches are covered with mats, peas-haulm, ſtraw, or any ſuch light covering, it will protect them in winter againſt ſevere froſts; but this covering muſt be taken off in mild weather, otherwiſe it will cauſe the branches to grow mouldy, which will be more injurious to them than the cold. In the ſpring the plants ſhould be trimmed, when all the ſmall weak ſhoots ſhould be entirely cut off, and the ſtrong ones ſhortened to about four or five feet long, which will cauſe them to put out ſtrong ſhoots for flowering the following year.

This plant is alſo propagated by laying down the branches, which in one year will be well rooted, may be taken off from the old plants, and tranſplanted where they are deſigned to remain. The cuttings of this will alſo take root, if they are planted in a loamy ſoil not too ſtiff, in the ſpring, before they begin to ſhoot. If theſe are covered with bell or hand-glaſſes to exclude the air, they will ſucceed much better than when they are otherwiſe treated; but when the cuttings put out ſhoots, the air ſhould be admitted to them, otherwiſe they will draw up weak and ſpoil, and they muſt be afterwards treated as the layers. Thoſe plants which are propagated by layers or cuttings, do not produce fruit ſo plentifully as the ſeedling plants; and I have found the plants which have been propagated two or three times, either by layers or cuttings, ſeldom produce fruit, which is common to many other plants.

If in very ſevere winters the ſtalks of theſe plants are killed to the ground, the roots often put out new ſtalks the following ſummer, therefore they ſhould not be diſturbed; and where there is mulch laid on the ground about their roots, there will be little danger of their being killed, although all the ſtalks ſhould be deſtroyed.

PASSIFLORÆ AFFINIS and PASSION-FLOWER. See *Paſſiflora*.

PASTINACA. (A paſcendo, *on account of the nouriſhing quality of the roots. Or, according to Turnebus, becauſe they reſemble the* paſtinum, *the tool uſed in digging vineyards.* Paſtinando loco. *Linn.*)

Lin. gen. n. 362. *Reich. n.* 392. *Schreb. n.* 494. *Tournef. t.* 170. *Juſſ.* 219. *Gærtn. t.* 21.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ* or *Umbelliferæ*.

GENERIC CHARACTER.

CAL. *Umbel univerſal* manifold, flat: *partial* manifold. *Involucre univerſal* none: *partial* none. *Perianth proper* obſolete.

COR. *univerſal* uniform. *Florets* all fertile. *Proper* of five lanceolate involute entire petals.

STAM. *Filaments* five capillary. *Anthers* roundiſh.

PIST. *Germ* inferior. *Styles* two, reflex. *Stigmas* blunt.

PER. none. *Fruit* compreſſed flat, elliptic, bipartile.

SEEDS two, elliptic, girt round the edge, almoſt flat on both ſides.

ESSENTIAL CHARACTER.

Fruit elliptic, compreſſed flat. *Petals* involute, entire.

SPECIES.

[1. Paſtinaca lucida. *Shining-leaved Parſnep.*

Lin. ſyſt. 290. *Reich.* 1. 719. *Willd.* 1465. *mant.* 58. *Jacqu. hort. t.* 199. *Gouan illuſtr.* 19. *t.* 11, 12. *Retz. obſ. 5. p.* 3.

P. foliis quaſi libanotidis latifoliæ. *Beerh. lugdb.* 1. 67.

Root-leaves ſimple cordate lobate ſhining acutely crenate: ſtem-leaves ternate and pinnate, branch-leaves ſimple wedge-ſhaped, Gouan.]

2. Paſtinaca ſativa. *Common Parſnep.*

Lin. ſpec. 376. *Reich.* 1. 719. *Willd.* 1466. *hort. diſſ.* 105. *upſ.* 66. *fl. ſuec. n.* 259. *mat. med.* 84. *Gærtn. fruct.* 1. 87. *t.* 21. *f.* 5. *Huſſ. angl.* 125. *Wither. arr. ed.* 3. 309. *Hall. helv. n.* 803. *Pollich pal. n.* 303. *Allion. pedem. n.* 1290. *Scop. carn. n.* 233. *Villars dauph.* 2. 637. *Huſſm. germ.*

germ. 106. *Krock. ſiles. n.* 474. *Retz. obſ.* 5. *p.* 3. *Plenck, ic. t.* 227. *Knipb. cent.* 6. *n.* 70.

α. P. ſylveſtris. *Wild Parſnep.*
Mill. dict. n. 1. *Wither. arr. var.* 1. *Relh. cant. n.* 237. *Sibth. oxon. n.* 311. *Neck. gallob.* 151.
P. ſylv. latifolia. *Bauh. pin.* 155. *Dod. pempt.* 680. 2. *Ger. emac.* 1025. 2. *Park. theat.* 944. *n.* 2. *Raii hiſt.* 409. *ſyn.* 206. *Riv. pent. t.* 6. *Mor. hiſt.* 3. 314. *ſ.* 9. *t.* 16. *f.* 2.
P. germanica ſylv. quibuſdam Elaphoboſcum. *Bauh. hiſt.* 3. 149.
Spondylium. *Ger.* 856. *fig.*

β. P. ſativa. *Garden Parſnep.*
Mill. dict. n. 2.
P. ſat. latifolia. *Bauh. pin.* 155. *Blackw. t.* 379. *Fuchſ.* 751. *Matth.* 747. *Dod. pempt.* 680. 1. *Lob. obſ.* 407. 2. *ic.* 1. 709. 2. *Bauh. hiſt.* 3. 150. *Raii hiſt.* 410. *Ger.* 870. 1. 2. *emac.* 1025. 1. *Park. theat.* 944. 1. *Mor. umb. t.* 1. *f.* 26. 26. *hiſt.* 3. 314. *ſ.* 9. *t.* 16. *f.* 1.

Leaves ſimply pinnate.

3. Paſtinaca Opopanax. *Rough Parſnep.*
Lin. ſpec. 376. *fl. ſ.* 290. *Reich.* 1. 719. *Willd.* 1466. *mant.* 357. *hort. cliff.* 105. *mat. med.* 84. *Woodv. med. bot.* 309. *t.* 113. *Gouan illuſtr.* 19. *t.* 13, 14. *Allion. pedem. n.* 1289. *Retz. obſ.* 5. *p.* 3. *Plenck, ic. t.* 228.
Panax coſtinum. *Bauh. pin.* 156.
P. herculeum majus. *Ger. emac.* 1003. *Raii hiſt.* 410.
P. heracleum. *Mor. hiſt.* 3. 315. *ſ.* 9. *t.* 17. *f.* 2.
Selinum Opopanax. *Crantz. umb.* 63.

Leaves pinnate and bipinnate, leaflets gaſhed at the baſe in front.

DESCRIPTIONS, *&c.*

[1. Root biennial, thick, milky. Stem ſtiff, rugged, grooved and angular, branched from the bottom, almoſt the height of a man, when cut yielding a fetid, rue like, whitiſh, tenacious gum. Branches numerous, panicled. Root-leaves cordate, of different ſizes, ſeldom lobed, netted-ſcabrous, acutely crenate; petiole angular above. The firſt (or lower ſtem-leaves) ternate, with the lateral leaflets ſeſſile and obliquely ovate, the end leaflet petioled, cordate, three-lobed or five-lobed. The ſecond (or upper ſtem-leaves) quinate (or pinnate with two pairs of lobes and an odd one), but very like the others; the leaflets three inches long, with ſharp notches terminating in a white point, but ſometimes obliterated. Nerves of the terminating leaflet always oppoſite, but in the lateral leaflets ſcattered. The uppermoſt leaves are quite ſimple, cordate-ovate, lobed, like thoſe of the Fig. All the branch-leaves wedge-ſhaped, quite entire from the baſe to the middle; thence to the tip acutely-crenate, an inch long, on a petiole of the ſame length. Umbels very numerous, commonly with ten rays; the principal one terminating the ſtem: at the baſe of this are two, three or four branches, whence the top of the ſtalk becomes as it were proliferous. Seed ſuborbiculate, about three lines in diameter [a].

According to Linnæus, the ſtem is ſmooth and even, a foot and half high and more. Leaves cordate, ſometimes lobed, ſtiffiſh, wrinkled, ſhining, acutely notched or ſerrate. Petals yellow, entire, acute, bent in. Seeds compreſſed, orbiculate [b].

Native of the South of Europe. Introduced in 1771, by Monſ. Richard. It flowers in june and july [c].

2. The Wild Parſnep has a biennial, ſimple, whitiſh root, putting forth ſome large fibres from the ſide. Stem ſingle, three or four feet high, erect, rigid, angular, pubeſcent, hollow, branched. Leaves alternate, ſmaller than thoſe of the garden Parſnep and of a darker green; in open ſituations pubeſcent, eſpecially the root-leaves. Flowering-branches come out from the axils of the leaves from top to bottom, ſupporting umbels which are ſmaller than that which terminates the ſtem. Flowers ſmall, yellow, with inflex regular petals. There is no involucre either general or partial [d]. Dr. Withering ſays, that there is ſometimes an involucel of one leaf. He adds, that the ſtem is membranaceous at the corners, that the rays of the umbel are from ſix to twelve; thoſe of the umbellets ſhort and numerous. Mr. Relhan remarks, that the petioles are pubeſcent; the leaflets very ſoft, ſerrate, and frequently three-lobed; the univerſal umbel conſiſting of ten rays or more; the partial of twenty and upwards.

Gærtner obſerves that there are ſometimes a few leaflets under the univerſal umbel. He deſcribes the ſeeds as middle-ſized, elliptic or obovate, ſlightly emarginate above, leafy-compreſſed, pale ſtraw-coloured, in the freſh ſeeds mixed with purple: back very ſlightly convex, with three capillary ſtreaks in the middle, and another more raiſed near the edge: rim narrow, thin: belly flat, with two ferruginous bowed long fillets, but not reſembling *Ferrum equinum*, as in *Sphondylium*, but at the baſe converging inwards and acuminate.

Wild Parſnep is native of moſt parts of Europe, on the borders of ploughed fields and on the banks of hedges, chiefly in a calcareous or marly ſoil. It flowers from the end of june through auguſt.]

β. Garden Parſnep has ſmooth leaves, of a light or yellowiſh green colour, in which it differs from the wild plant; the ſtalks alſo riſe higher, and are deeper channelled; the peduncles are much longer, and the flowers of a deeper yellow colour.

[Retzius remarks, that it has pinnate and ſubpinnate leaves with ear-like appendages; but this, I preſume, applies both to the wild and garden plant. He adds, that α, that is, the wild Parſnep, is ſmooth; and β, that is, the garden Parſnep, hairy. Which is directly contrary to what Mr. Miller affirms. The truth is, that the wild plant is ſometimes ſmooth, but more often hairy; and the garden plant ſometimes hairy, but generally ſmooth.

The roots are ſweeter than Carrots, and are much eaten by thoſe who abſtain from animal food in Lent, or eat ſalt-fiſh on faſt-days: they are highly nutritious. In the north of Ireland they are brewed, inſtead of malt, with hops, and fermented with yeaſt. The liquor thus obtained is agreeable. Hogs are fond of theſe roots, and quickly grow fat with them [e].

Old Gerarde ſays, "there is a good and pleaſant "food or bread made of the roots of Parſneps, as "my friend maſter Plat hath ſet forth in his book "of experiments."

It is aſſerted, ſays Ray, by ſome of our writers, that the roots, when old, bring on delirium and madneſs, and hence are called *Madneps*.

Parkinſon, after informing us that the ſeed ripens the ſecond year after ſowing, adds; "if they do "flower the firſt year, the countrey people call them "madde Neepes."

Allione obſerves, that although the old roots of the *wild* Parſnep be hot and acrimonious, yet we are not to attribute to them the bad effects which ſome affirm them to have.

The ſeeds contain an eſſential oil, and will often cure intermittent fevers [f]. The ſeeds uſed in medicine ſhould be thoſe of the wild plant] but the druggiſts commonly ſell the ſeed of the garden kind for it, which they may purchaſe at an eaſy price when it is too old to grow.

[Villars ſays that they have two remarkable varieties of the Wild Parſnep in Dauphiné; one with an angular branched ſtem approaching very near to the Garden Parſnep; the other with a ſimple round ſtem, very ſlightly ſtriated, and receding ſo far from the cultivated plant, that it ſeems to be a diſtinct ſpecies.

3. Root perennial, as thick as the human arm, yellow, branched; the branches an inch or an inch and half in thickneſs, a foot and half in length, tubercled, with a corky bark. Stem from three feet to the height of a man, the thickneſs of a finger, ſtriated, covered at the baſe with ſcariofe membranaceous ſcales, like the Ferns; in other parts very ſmooth and ſhining; angular at top, eſpecially at the branches. Primary (or root) leaves quite ſimple, cordate, acutely crenate; the others ternate or quinate, with the end

[a] Gouan. [b] Mant. [c] Hort. kew. [d] Ray hiſt. [e] Withering. [f] Idem.

leaflet always cordate and very large; the lateral ones obliquely cordate, with the upper lobe ſhorter. The loweſt ſtem-leaves more compound, conſidered as a whole triangular, two feet long, bipinnate, having five pinnules on each ſide; the loweſt pinna pinnate, commonly with five leaflets, the end one cordate, the reſt ſeſſile and obliquely cordate: the leaflets are an inch to two inches long; the other pinnules are firſt ternate, then ſimple. The other ſtem-leaves decreaſe, and are firſt quinate, next ternate, and at the branches ſimple. Petiole of the root-leaves from the ſheath to the firſt pinna flattiſh above and thence angular-keeled; on the contrary that of the branch-leaves is furrowed. Sheaths wide ſtriated, in the root-leaves very ſtrigoſe; in the ſtem-leaves ſmooth. All the leaflets are hairy, eſpecially at the back. At the flowering-branches there are ſpathaceous ſheaths, which are naked or deſtitute of leaves. The umbelliferous branches are very ſmooth; firſt alternate, erect, then two, three, or four together in a ſort of whorl, two or three inches long, with one or two ſpathaceous leaflets towards the middle or at the top. The univerſal umbels have uſually ſeven or eight rays, an inch long, of a yellowiſh green colour. Involucres with from four to ſix leaflets, ſcarcely more than a line in length: the involucels have as many. Fruits flat, with the rim thicker, three or four lines in diameter, and a little longer. The involucres and involucels are frequently permanent. Juice yellow, bearing no marks of a reſinous or aromatic principle [x].]

This juice flows out where either the leaf or ſtalk is broken. They are both very rough; the former dark green, the latter ſeven or eight feet high. The ſtalks divide towards the top into many horizontal branches, each terminated by a large umbel of yellow flowers. They appear in july.

[Native of the South of Europe, South of France, Italy and Sicily. Cultivated in 1731 by Mr. Miller [y].

This plant commonly ripens its ſeeds with us, and its juice manifeſts ſome of the qualities diſcovered in the officinal Opopanax: but it is only in the warmer regions of the Eaſt, where this plant is alſo a native, that the juice concretes into this gum-reſin. It is obtained by means of inciſions made at the bottom of the ſtalk: and is imported from Turkey and the Eaſt Indies ſometimes in little round drops or tears, but more commonly in irregular lumps, of a reddiſh yellow colour, ſpecked with white on the outſide; internally paler, and frequently variegated with large white pieces.

This gum-reſin has a ſtrong diſagreeable ſmell, and a bitter, acrid, ſomewhat nauſeous taſte. It readily forms a milky liquor with water by rubbing; and this on ſtanding depoſits a portion of reſinous matter, and becomes yellowiſh: to rectified ſpirit it yields a gold-coloured tincture, which taſtes and ſmells ſtrongly of the drug. Water diſtilled from it is impregnated with its ſmell, but no eſſential oil is obtained on committing moderate quantities to the operation.

Opopanax has been long eſteemed for its attenuating, deobſtruent and aperient virtues; but as it is commonly preſcribed in combination with other medicines, theſe qualities are by no means aſcertained, nor do its ſenſible qualities indicate it to be a medicine of much power. Dr. Cullen claſſes it with the anti-ſpaſmodics; it is however leſs fetid than galbanum, though more ſo than ammoniacum. It has commonly been given in hypochondriacal affections, viſceral obſtructions, menſtrual ſuppreſſions, and aſthmas, eſpecially when connected with a phlegmatic habit of body. In the London Pharmacopœia it is directed in the *pillulæ e gummi* [z].]

PROPAGATION AND CULTURE.

2. The Parſnep is cultivated in kitchen-gardens, the roots being large, ſweet, and accounted very nouriſhing. It is propagated by ſeeds, which ſhould be ſown in february or march, in a rich mellow ſoil, well dug, that their roots may run downwards, the greateſt excellency being the length and bigneſs of the roots. Theſe may be ſown alone, or with Carrots, as is practiſed by the kitchen-gardeners near London; ſome of whom alſo mix Leeks, Onions, and Lettuce, with their Parſneps; but this I think very wrong, for it is not poſſible, that ſo many different ſorts can thrive well together, except they are allowed a conſiderable diſtance; and if ſo, it will be equally the ſame to ſow the different ſorts ſeparate. However, Carrots and Parſneps may be ſown together very well, eſpecially where the Carrots are deſigned to be drawn off very young; becauſe the Parſneps generally ſpread moſt towards the end of the ſummer, when the early Carrots are gone.

When the plants are come up, hoe them out to ten or twelve inches aſunder, cutting up all the weeds. This muſt be repeated three or four times, according as you find the weeds grow; but in the latter part of ſummer, when the plants cover the ground, they will prevent the growth of weeds.

When the leaves begin to decay, the roots may be dug up for uſe. Before this they are ſeldom well taſted; nor are they good for much in the ſpring, after they are ſhot out again. To preſerve them for this ſeaſon, dig them up the beginning of february, and bury them in ſand in a dry place, where they will remain good until the middle of april or later.

To ſave ſeeds make choice of ſome of the longeſt, ſtraighteſt and largeſt roots, and plant them two feet aſunder, where they are defended from ſtrong ſouth and ſouth-weſt winds, for the ſtems grow to a great height; keep them clear from weeds, and if the ſeaſon ſhould prove dry, water them twice a week. At the end of auguſt or the beginning of ſeptember, the ſeeds will be ripe: then carefully cut off the umbels, and ſpread them upon a coarſe cloth for two or three days to dry; after which, beat off the ſeeds and put them up for uſe. Never truſt to the ſeeds that are more than a year old, for they will ſeldom grow beyond that age.

The leaves are dangerous to handle, eſpecially in a morning, while the dew remains upon them. I have known gardeners, when they have been drawing up Carrots from among Parſneps, when their leaves were wet with dew, and have turned the ſleeves of their ſhirts up to their ſhoulders, have their arms covered with large bliſters, full of a ſcalding liquor, which have proved very troubleſome for ſeveral days.

[To cultivate Parſneps for the farmer ſow the ſeed in autumn, ſoon after it is ripe; by which means the plants will come on early the following ſpring, and will get ſtrong before the weeds can grow ſo as to injure them. The young plants never materially ſuffer through the ſeverity of the ſeaſons.

The beſt ſoil for them is a rich deep loam; next to this is ſand, or they will thrive well in a black gritty ſoil; but will never pay for cultivating in ſtone braſh, gravel or clay ſoils; and they are always the largeſt where the ſtaple is deepeſt. If the ſoil be proper, they do not require much manure. A very good crop has been obtained for three ſucceſſive years without any. Forty cart-loads of ſand laid on an acre of very ſtiff loam, and ploughed in, has anſwered very well.

Sow the ſeed in drills eighteen inches diſtant, that the plants may be horſe or hand-hoed: they will be more luxuriant if they have a ſecond hoeing, and are carefully earthed ſo as not to cover the leaves.

If land cannot be got in proper condition to receive the ſeed in autumn, ſow a plat in the garden or the corner of a field, and tranſplant thence at the end of april or early in may. The plants muſt be carefully drawn, and the land that is to receive them well pulverized by harrowing and rolling. When it is thus in order, open a furrow ſix or eight inches deep, and lay the plants in it regularly at the diſtance of ten inches or a foot, taking care not to let the root be bent, and that the plant ſtand upright after the earth is cloſed about it, which ſhould be done immediately by perſons following the planter with a hoe, and who muſt be attentive not to cover the leaves. Open another furrow eighteen inches diſtant from the laſt, plant it as before, and ſo proceed till the field is completely cropped. When any weeds appear, hoe the ground, and earth the plants.

[x] Gouan. [y] Hort. kew. [z] Woodville.

Dibbling in Parſneps is a bad method, as the ground thereby becomes ſo bound as not eaſily to admit the lateral fibres, with which the root of this plant abounds, to fix or work in the earth, on which account the roots never attain their proper ſize.

With attention to the ſoil, the ſeaſon for ſowing, cleaning and earthing the plants, and raiſing the ſeed from the largeſt and beſt Parſneps, there is no doubt but the crop would anſwer much better than a crop of Carrots. They are equal to them if not ſuperior in fatting pigs; for they make the fleſh whiter, and the animals eat them with more ſatisfaction. Clean waſhed and ſliced among bran, horſes eat them greedily, and thrive with them; nor do they heat horſes, or like Corn fill them with diſorders*.

In France, and our iſlands adjoining to it, Parſneps are held in high eſteem both for cattle and ſwine. In Brittany this crop is ſaid to be little inferior in value to Wheat. Milch cows fed with it in winter give as much and as good milk, and yield butter as well-flavoured, with Parſneps, as with Graſs in may or june*.

t. 3. The two other ſpecies may be propagated from ſeeds, and are hardy enough to bear the open air in our climate.

PASTINACA. See *Daucus, Echinophora, Heracleum.*

——— SECACUL. See *Tordylium.*]

PASTURE.

Paſture ground is of two ſorts: the one is low meadow land, which is often overflowed, and the other is upland, which lies high and dry. The firſt of theſe will produce a much greater quantity of hay than the latter, and will not require manuring or dreſſing ſo often; but then the hay produced on the upland is much preferable to the other, as is alſo the meat which is fed in the upland more valued than that which is fatted in rich meadows; though the latter will make the fatter and larger cattle, as is ſeen by thoſe which are brought from the low rich lands in Lincolnſhire. But where people are nice in their meat, they will give a much larger price for ſuch as has been fed on the downs, or in ſhort upland Paſture, than for the other, which is much larger. Beſides this, dry Paſtures have an advantage over the meadows, that they may be fed all the winter, and are not ſo ſubject to poach in wet weather; nor will there be ſo many bad weeds produced, which are great advantages, and do, in a great meaſure, recompenſe for the ſmallneſs of the crop.

I have already mentioned the advantages of meadow land, or ſuch as is capable of being overflowed with water, and given directions for draining and improving low Paſture land; therefore ſhall not repeat what is there ſaid, but juſt mention ſome methods for improving upland Paſture.

The firſt improvement of upland Paſture is, by fencing it, and dividing it into ſmall fields of four, five, ſix, eight, or ten acres each, planting timber-trees in the hedge rows, which will ſcreen the Graſs from the drying pinching winds of march, which prevent the Graſs from growing in large open lands; ſo that if april prove a cold dry month, the land produces very little hay; whereas in the ſheltered fields the Graſs will begin to grow early in march, and will ſoon after cover the ground, and prevent the ſun from parching the roots of the Graſs, whereby it will keep growing, ſo as to afford a tolerable crop, if the ſpring ſhould prove dry. But in fencing land, it muſt be obſerved not to make the incloſures too ſmall, eſpecially where the hedge rows are planted with trees; becauſe when the trees are advanced to a conſiderable height, they will ſpread over the land; and, where they are cloſe, will render the Graſs ſour; ſo that inſtead of being an advantage, it will greatly injure the Paſture.

The next improvement of upland Paſture is, to make the turf good, where, either from the badneſs of the ſoil, or want of proper care, the Graſs has been deſtroyed by ruſhes, buſhes, or mole-hills. Where the ſurface of the land is clayey and cold, it may be improved by paring it off, and burning it: but if it is a hot ſandy land, then chalk, lime, marle, or clay, are very proper manures to lay upon it; but this ſhould be laid in pretty good quantities, otherwiſe it will be of little ſervice to the land.

If the ground is over-run with buſhes or ruſhes, it will be of great advantage to grub them up towards the latter part of the ſummer, and after they are dried to burn them, and ſpread the aſhes over the ground juſt before the autumnal rains; at which time the ſurface of the land ſhould be levelled, and ſown with Graſs-ſeed, which, if done early in the autumn, will come up in a ſhort time, and make good Graſs the following ſpring. So alſo, where the land is full of mole-hills, theſe ſhould be pared off, and either burnt for the aſhes, or ſpread immediately on the ground, where they are pared off, obſerving to ſow the bare patches with Graſs-ſeed, juſt as the autumnal rains begin.

There are ſome Paſture lands which are full of ant-hills, which are not only diſagreeable to the ſight, but where they are in any quantity, the Graſs cannot be mowed; therefore the turf which grows over them ſhould be divided with an inſtrument into three parts, and pared off each way; then the middle or core of the hills ſhould be dug out and ſpread over the ground, leaving the holes open all the winter to deſtroy the ants, and in the ſpring the turf may be laid down again, and after the roots of the Graſs are ſettled again in the ground, it ſhould be rolled to ſettle the ſurface, and make it even. If this is properly managed, it will be a great improvement to ſuch land.

Where the land has been thus managed, it will be of great ſervice to roll the turf in the months of february and march, with a heavy wood roller, always obſerving to do it in moiſt weather, that the roller may make an impreſſion: this will render the ſurface level, and make it much eaſier to mow the Graſs, than when the ground lies in hills; and will alſo cauſe the turf to thicken, ſo as to have what the people uſually term a good bottom. The Graſs likewiſe will be the ſweeter for this huſbandry, and it will be a great help to deſtroy bad weeds.

Another improvement of upland Paſture is the feeding them every other year; for where this is not practiſed, the land muſt be manured at leaſt every third year; and where a farmer has much arable land, he will not care to part with his manure to the Paſture. Therefore every farmer ſhould endeavour to proportion his Paſture to his arable land, eſpecially where manure is ſcarce, otherwiſe he will ſoon find his error; for the Paſture is the foundation of all the profit, which may ariſe from the arable land.

Whenever the upland Paſtures are mended by manure, there ſhould be a regard had to the nature of the ſoil, and a proper ſort of manure applied: as for inſtance, all hot ſandy lands ſhould have a cool manure; neats dung and ſwines dung are very proper for ſuch lands, as alſo marle and clay; but for cold lands, horſe dung, aſhes, or ſand, and other warm manures, are proper. And when theſe are applied, it ſhould be done in autumn, before the rains have ſoaked the ground, and rendered it too ſoft to cart on; and it ſhould be carefully ſpread, breaking all the clods as ſmall as poſſible, and early in the ſpring harrowed with buſhes, to let it down to the roots of the Graſs. When the manure is laid on at this ſeaſon, the rains in winter will waſh down the ſalts, ſo that the following ſpring the Graſs will receive the advantage of it.

There ſhould alſo be great care taken to deſtroy weeds in the Paſture, every ſpring and autumn; for where this is not practiſed, the weeds will ripen their ſeeds, which will ſpread over the ground, and thereby fill it with ſuch a crop of weeds as will ſoon over-bear the Graſs, and render it very weak, if not deſtroy it; and it will be very difficult to root them out, after they have got poſſeſſion; eſpecially Ragwort, Hawkweed, Dandelion, and ſuch other weeds as have down adhering to their ſeeds.

Theſe upland Paſtures ſeldom degenerate the Graſs which is ſown on them, if the land is tolerably good; whereas the low meadows, which are overflowed in winter, in a few years turn to a harſh ruſhy Graſs, but

* Hazard, in Bath papers, vol. 4. p. 244.

* Bath papers, 4. 287.

the upland will continue a fine ſweet Graſs for many years without renewing.

There is no part of huſbandry, of which the farmers are in general more ignorant, than that of the Paſture; moſt of them ſuppoſe, that when the old Paſture is ploughed up, it can never be brought to have a good ſward again; ſo their common method of managing their land after ploughing, and getting two or three crops of Corn is, to ſow with their crop of Barley, ſome Graſs-ſeeds as they call them; that is, either the red Clover, which they intend to ſtand two years after the Corn is taken off the ground, or Ray-graſs mixed with Trefoil; but as all theſe are at moſt but biennial plants, whoſe roots decay ſoon after their ſeeds are perfected, ſo the ground having no crop upon it, is again ploughed for Corn; and this is the conſtant round which the lands are employed in, by the better ſort of farmers: for I never have met with one of them, who had the leaſt notion of laying down their land to Graſs for any longer continuance; therefore the ſeeds which they uſually ſow, are the beſt adapted for this purpoſe.

But whatever may have been the practice, *I hope* to ſhow, that it is poſſible to lay down land, which has been in tillage, with Graſs, in ſuch manner as that the ſward ſhall be as good, if not better, than any natural Graſs, and of as long duration. But this is never to be expected, in the common method of ſowing a crop of Corn with the Graſs-ſeeds; for wherever this has been practiſed, if the Corn has ſucceeded well, the Graſs has been very poor and weak; ſo that if the land has not been very good, the Graſs has ſcarcely been worth ſtanding; for the following year it has produced but little hay, and the year after the crop is worth little, either to mow or feed. Nor can it be expected it ſhould be otherwiſe, for the ground cannot nouriſh two crops, and if there were no deficiency in the land, yet the Corn being the firſt, and moſt vigorous of growth, will keep the Graſs from making any conſiderable progreſs; ſo that the plants will be extremely weak and but very thin, many of them which came up in the ſpring being deſtroyed by the Corn; for wherever there are roots of Corn, it cannot be expected there ſhould be any Graſs. Therefore the Graſs muſt be thin, and, if the land is not in good heart to ſupply the Graſs with nouriſhment, that the roots may branch out after the Corn is gone, there cannot be any conſiderable crop of Clover; and as the roots are biennial, many of the ſtrongeſt plants will periſh ſoon after they are cut; and the weak plants, which had made but little progreſs before, will be the principal part of the crop for the ſucceeding year, which is many times not worth ſtanding.

Therefore, when ground is laid down for Graſs, there ſhould be no crop of any kind ſown with the ſeeds; and the land ſhould be well ploughed, and cleaned from weeds; otherwiſe the weeds will come up the firſt, and grow ſo ſtrong, as to overbear the Graſs, and if they are not pulled up, will entirely ſpoil it. The beſt ſeaſon to ſow the Graſs-ſeeds upon dry land is about the middle of auguſt, if there is an appearance of rain; for the ground being then warm, if there happen ſome good ſhowers of rain after the ſeed is ſown, the Graſs will ſoon make its appearance, and get ſufficient rooting in the ground before winter, ſo will not be in danger of having the roots turned out of the ground by the froſt, eſpecially if the ground is well rolled before the froſt comes on, which will preſs it down, and fix the earth cloſe to the roots. Where this has not been practiſed, the froſt has often looſened the ground ſo much, as to let in the air to the roots of the Graſs, and done it great damage; and this has been brought as an objection to the autumnal ſowing of Graſs; but it will be found to have no weight, if the above direction is practiſed; nor is there any hazard in ſowing the Graſs at this ſeaſon, but that of dry weather after the ſeeds are ſown; for if the Graſs comes up well, and the ground is well rolled in the middle or end of october, and repeated the beginning of march, the ſward will be cloſely joined at bottom, and a good crop of hay may be expected the ſame ſummer. In very open, expoſed, cold lands, it is proper to ſow the ſeeds earlier than is here mentioned, that the Graſs may have time to get good rooting, before the cold ſeaſon comes on to ſtop its growth; for in ſuch ſituations, vegetation is over early in the autumn, ſo the Graſs being weak, may be deſtroyed by froſt: but if the ſeeds are ſown in the beginning of auguſt, and a few ſhowers follow ſoon after to bring up the Graſs, it will ſucceed much better than any which is ſown in the ſpring, as I have ſeveral years experienced, on ſome places as much expoſed as moſt in England. But where the ground cannot be prepared for ſowing at that ſeaſon, it may be performed the middle or latter end of march, according to the ſeaſon's being early or late; for in backward ſprings and in cold land, I have often ſowed the Graſs in the middle of april with ſucceſs; but there is danger in ſowing late of dry weather, and eſpecially if the land is light and dry; for I have ſeen many times the whole ſurface of the ground removed by ſtrong winds at that ſeaſon, ſo that the ſeeds have been driven in heaps to one ſide of the field. Therefore whenever the ſeeds are ſown late in the ſpring, it will be proper to roll the ground well ſoon after the ſeeds are ſown, to ſettle the ſurface, and prevent its being removed.

The ſorts of ſeeds which are the beſt for this purpoſe, are the beſt ſort of upland Hay-ſeeds, taken from the cleaneſt Paſtures, where there are no bad weeds; if this ſeed is ſifted to clean it from rubbiſh, three, or at moſt four buſhels, will be ſufficient to ſow an acre of land. The other ſort is the Trifolium pratenſe album, which is commonly known by the names of White Dutch Clover, or White Honeyſuckle Graſs. Eight pounds of this ſeed will be enough for one acre of land. The Graſs-ſeed ſhould be ſown firſt, and then the Dutch Clover-ſeed may be afterward ſown; but they ſhould not be mixed together, becauſe the Clover-ſeeds being the heavieſt, will fall to the bottom, and conſequently the ground will be unequally ſown with them.

After the ſeeds are ſown, the ground ſhould be lightly harrowed to bury the ſeeds; but this ſhould be performed with a ſhort-toothed harrow, otherwiſe the ſeeds will be buried too deep. Two or three days after ſowing, if the ſurface of the ground is dry, it ſhould be rolled with a Barley roller to break the clods and ſmooth the ground, which will ſettle it, and prevent the ſeeds from being removed by the wind.

When the ſeeds are come up, if the land ſhould produce many weeds, theſe ſhould be drawn out before they grow ſo tall as to overbear the Graſs; for where this has been neglected, the weeds have taken ſuch poſſeſſion of the ground, as to keep down the Graſs and ſtarve it; and when theſe weeds have been ſuffered to remain until they have ſhed their ſeeds, the land has been ſo plentifully ſtocked with them, as entirely to deſtroy the Graſs; therefore it is one of the principal parts of huſbandry, never to ſuffer weeds to grow on the land.

If the ground is rolled two or three times at proper diſtances after the Graſs is up, it will preſs down the Graſs, and cauſe it to make a thicker bottom; for as the Dutch Clover will put out roots from every joint of the branches which are near the ground, ſo by preſſing down the ſtalks, the roots will mat ſo cloſely together, as to form a ſward ſo thick as to cover the whole ſurface of the ground, and form a green carpet, which will better reſiſt the drought. For if we do but examine the common Paſtures in ſummer (in moſt of which there are patches of this White Honeyſuckle Graſs growing naturally) we ſhall find theſe patches to be the only verdure remaining in the fields. And this the farmers in general acknowledge, is the ſweeteſt feed for all ſorts of cattle, yet never had any notion of propagating it by ſeeds till of late years. Nor has this been long practiſed in England; for till within a few years, that ſome curious perſons imported the ſeed from Brabant, where it had been long cultivated, there were not any of the ſeeds ſaved in England; though now there are ſeveral perſons who ſave the ſeeds here, which ſucceed full as well as any of the foreign ſeeds which are imported.

As this White Clover is an abiding plant, ſo it is certainly

certainly the very beſt ſort to ſow where Paſtures are laid down to remain; for as the Hay-ſeeds which are taken from the beſt Paſtures, will be compoſed of various ſorts of Graſs, ſome of which may be but annual and others biennial, ſo when thoſe go off, there will be many and large patches of ground left bare and naked, if there is not a ſufficient quantity of the White Clover to ſpread over and cover the land. Therefore a good ſward can never be expected where this is not ſown; for in moſt of the natural Paſtures, we find this plant makes no ſmall ſhare of the ſward; and it is equally good for wet and dry land, growing naturally upon gravel and clay in moſt parts of England; which is a plain indication how eaſily this plant may be cultivated to great advantage, in moſt ſorts of land throughout this kingdom.

The true cauſe why the land which is in tillage is not brought to a good turf again, in the uſual method of huſbandry is, from the farmers not diſtinguiſhing which Graſſes are annual, from thoſe which are perennial; if annual or biennial Graſſes are ſown, theſe will of courſe ſoon decay; ſo that unleſs where ſome of their ſeeds may have ripened and fallen, nothing can be expected on the land but what will naturally come up. This, together with the covetous method of laying down the ground with a crop of Corn, has occaſioned the general failure of increaſing the Paſture in many parts of England, where it is now much more valuable than any arable land.

After the ground has been ſown in the manner before directed, and brought to a good ſward, the way to preſerve it good is, by conſtantly rolling the ground with a heavy roller, every ſpring and autumn, as has been before directed. This piece of huſbandry is rarely practiſed by farmers, but thoſe who do, find their account in it, for it is of great benefit to the Graſs. Another thing ſhould alſo be carefully performed, which is, to cut up Docks, Dandelion, Knapweed, and all ſuch bad weeds, by their roots, every ſpring and autumn; this will increaſe the quantity of good Graſs, and preſerve the Paſtures in beauty.

Dreſſing theſe Paſtures every third year, is alſo a good piece of huſbandry, for otherwiſe it cannot be expected the ground ſhould continue to produce good crops. Beſides this, it will be proper to mow one ſeaſon, and feed the next; but where the ground is every year mown, it muſt be conſtantly dreſſed, as moſt of the Graſs grounds near London, otherwiſe the ground will be ſoon exhauſted.

Of late years there has been an emulation, eſpecially among gentlemen, to improve their Paſtures, by ſowing ſeveral ſorts of Graſs-ſeeds; and there have been ſome perſons of little ſkill in theſe matters, who have impoſed on many ignorant people, by ſelling them ſeeds of ſome foreign Graſs, recommending them for ſome particular quality, but when tried have proved of little worth, whereby they have loſt a ſeaſon or two, and have had their work to begin again. Therefore I would adviſe every perſon, not to truſt too much upon the faith of ſuch practitioners, who, upon ſlight experiments, have ventured to recommend without judgment; for of all the ſorts of Graſs-ſeeds which have been brought from America (of which I have, at various times, ſown more than a hundred different ſpecies) I have found none equal to the common Poa Graſs, which grows naturally in England, either for duration or verdure; therefore that, and about ſix or ſeven other ſorts, are the beſt worth cultivating; but the trouble of collecting theſe in quantity is ſo great, as to deter moſt people from attempting it; and in the purchaſing of Hay-ſeeds, there is generally more ſeeds of weeds than Graſs, which will fill the ground; therefore for ſome years paſt, I have recommended and ſown only the White Dutch Clover-ſeeds, and have waited for the natural Graſs coming up amongſt it, and have generally ſucceeded better this way than by ſowing Hay-ſeed with it; for if the Paſture is duly weeded, rolled, and dreſſed, all bad weeds may be deſtroyed, and a fine durable turf obtained: whereas the Burnet, and many other plants, which have been extolled as a good winter food, being of ſhort duration, are very improper for improving land; nor are there two better plants yet known for the purpoſe of fodder, than the Lucern and Saintfoin; for where theſe are properly ſown upon right ſoils and duly cultivated, they will produce a much greater quantity of food, than can be procured from the ſame quantity of land, ſown with any other abiding plant: therefore I wiſh thoſe who are curious to have much fodder for their cattle, to apply themſelves to the culture of theſe, and not engage in uncertain experiments.

[The following directions for laying down land to Graſs are given by Mr. Stillingfleet. Plough the land in march as deep as the nature of the ſoil will admit. Harrow when the weeds are about flowering, namely, ſome time in may, or ſooner, if it be a forward ſpring. Plough about ten days after harrowing. Harrow when the weeds are come up again. If any dung or compoſt be prepared for the land, let it be laid on. Plough at this time, and plough it in a moderate depth immediately, ſo that the teeth of the harrow after rolling may reach it. Roll the land down every day as it is ploughed with a light roller, and obſerve not to ſpread the dung long before it is ploughed in. Harrow well when the weeds come up that are produced by the dung, ſo as to bring the dung up and mix it with the ſoil; obſerving not to harrow more at once than can be ploughed in one day. Plough it up after the harrows the ſame depth as before, and follow the plough with a roller. The land will now be under the proper preparation for the ſeeds, which may be ſown after the firſt ſoaking rain from the end of auguſt to the end of ſeptember, in the following manner. Plough the land about the ſame depth as before. Harrow it once in a place, and ſow the ſeeds after the harrow. Then with a hurdle buſhed with black-thorn-buſhes harrow the ſeeds in. When the plants appear, roll the land with a light roller, and not before, except the weather prove very dry, in which caſe it will be neceſſary to roll it with a very light roller after the buſh-harrow. A light dreſſing of good manure laid on with the firſt froſt, will be of great uſe in preſerving the Graſs the firſt ſeaſon, and encouraging its growth afterwards. And a light roller uſed after every froſt will be of great ſervice the firſt winter.

In Yorkſhire they have three ways of ſowing Graſs-ſeeds: 1ſt, in auguſt; 2dly with Barley, which is moſt uſed; 3dly, upon Wheat, in march. The firſt way is the beſt; and the ſecond is better than the laſt.

The quantity ſown is ten buſhels to the acre, four pounds of hop-trefoil (Medicago lupulina, Black Nonefuch) or White Clover, and ſome add two pounds of Ray-graſs.

After the crop is cut, ſuffer no cattle to enter, till next hay-harveſt, when the Graſs may be either cut or fed. But there is danger from the cattle in the laſt way. The farmers generally mow the firſt crop for the ſake of ſeeds, becauſe that affords more than the ſucceeding ones. If ſown with Barley, roll as ſoon as the Barley is off the ground. Lay on dung after the firſt crop of Graſs is mowed.

The following is a liſt of Herbs of Paſture, or of ſuch plants as are commonly found growing among Graſs, whether uſeful or injurious, with obſervations; diſpoſed alphabetically according to their botanical names: with references from their common Engliſh ones.

Achillea Millefolium. *Common Yarrow* or *Milfoil.* Common on all ſoils. Perennial. Flowering from june to auguſt. The white and purple flowers differ only in colour. The roots creep prodigiouſly, eſpecially where rubbiſh or dung has been laid. It has been generally execrated as a weed, but ſheep and ſometimes cattle will eat it; and Dr. Anderſon has recommended it for cultivation on poor lands. In a dry ſummer, animals eat this and many other plants in the following liſt, which they leave untouched when there is plenty of Graſs. Perhaps ſome of them act medicinally, and ought not therefore to be rejected in mowing and paſture grounds.—Milfoil is reputed an excellent vulnerary and ſtyptic, good in hæmorrhages and dyſenteries, and the ſcab in ſheep.

Achillea Ptarmica. *Sneezewort.* Chiefly in moiſt meadows, or among buſhes on the ſides of paſtures, or

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on the banks of ditches or in moiſt woods, and ſometimes on the balks of corn fields. It is hardly common enough among Graſs to be conſidered as making a part of Paſture herbage. It is perennial and creeps. Flowers in july and auguſt. In ſpring the young ſhoots are put into ſalads, to correct their coldneſs. The roots being hot and biting are uſed in the tooth-ach; whence it has the name of Baſtard Pellitory. From the form of the leaf it is called Gooſe-tongue. The leaves dried and powdered provoke ſneezing, whence its common name. With double flowers it is common in old gardens, under the name of double Ptarmica or Batchelor's buttons. The flowers are white.

ADDER'S TONGUE. See *Ophioglossum*.

AGRIMONIA EUPATORIA. *Common Agrimony*. Chiefly on the borders of Paſtures, but ſometimes in the body of them. Perennial. Flowers yellow, appearing in june and july. Dyes yellow. Dreſſes leather. Good in the jaundice and all obſtructions.

AJUGA REPTANS. *Common Bugle, Middle Conſound, Sicklewort*, or *Herb Carpenter*. Frequent in moiſt meadows and woods. Perennial, increaſing greatly by the ſide ſhoots. Flowers blue; in may and june. Vulnerary, cooling and aſtringent.

ALCHEMILLA VULGARIS. *Common Ladies Mantle*, or *Bear's-foot*. In high paſtures, not very common in the ſouth of England; it ſpreads greatly in the ſoil it likes. Vulnerary and aſtringent. Horſes, ſheep and goats eat it; but kine are not fond of it. Flowers ſmall and herbaceous, appearing from june to auguſt.

ALLIUM VINEALE. *Crow Garlick*. Frequent, and giving butter an inſufferably ſtrong taſte. Perennial, bulbous, flowering in june.

ALLIUM URSINUM. *Wild Garlick* or *Ramſons*. Woods and hedges; ſometimes in meadows, giving alſo a ſtrong flavour to milk and butter. Flowering in may.

ALSINE MEDIA. *Common Chickweed*. Wild almoſt every where: but not ſo common in paſtures as in gardens and arable land. Annual.

ANEMONE NEMOROSA. *Wood Anemone*. Moſt common in woods and hedges, but ſometimes in paſtures. Perennial: flowering from march to may. Acrid: according to Linneus, cattle (or ſheep) brought from open to woody paſtures, and eating this plant, are affected with the bloody flux, or make bloody urine.

ANEMONE PULSATILLA. *Paſque-flower*. Only on high paſtures or downs, and not common. Flowers purple and handſome. Acrid, but ſeems not to be eaten by ſheep.

ANONIS. See *Ononis*.

ANTHEMIS NOBILIS. *Common* or *Sweet Chamomile*. Perennial, trailing; on dry commons; flowering in july and auguſt. The flowers are generally known as an excellent medicine, and the ſingle wild flowers are far ſuperior to the double ones which are found in the ſhops.

ANTHYLLIS VULNERARIA. *Common Ladies-finger*, or *Kidney-Vetch*. In dry paſtures, chiefly in a calcareous ſoil. It is perennial; and in its natural ſtate dry and rather aſtringent. It remains to be ſeen, whether it would prove ſucculent and productive enough in a good ſoil to render it worth cultivation. Mr. Young ſays, it abounds in the beſt meadows of the Pyrenees: but it will probably never rival *Lotus Corniculata*, with which it has been confounded. The flowers are yellow, and the whole plant has a whitiſh appearance.

ANTIRRHINUM LINARIA. *Common Toadflax, Wild Flax, Flax-weed, Butter and Eggs*. Chiefly in barren paſtures. Perennial; creeping very much. It flowers from june to auguſt. Abounds in an acrid oil. Recommended in the dropſy, but moſt approved as a cataplaſm, with lard, in the piles. The juice, with milk, is a poiſon to flies. Flowers pale yellow, with an orange palate.

APHANES ARVENSIS. *Parſley-piert*. A little annual plant, with inconſiderable herbaceous flowers, growing in dry paſtures and on fallow fields, flowering from may to auguſt.

ARCHANGEL. See *Lamium*.

ARSMART. See *Polygonum*.

ASTRAGALUS GLYCYPHYLLUS. *Wild Liquorice* or *Liquorice Vetch*. Paſtures, eſpecially in a calcareous ſoil, but more common in hedges. A large plant, ſweet with a mixture of bitterneſs: on the latter account ſeemingly leſs agreeable to cattle than moſt of the leguminous plants. Flowers greeniſh yellow, appearing in june and july. Dr. Anderſon treats largely of *Lotus corniculata* or Bird's-foot Trefoil under this name.

ASTRAGALUS HYPOGLOTTIS. *Purple mountain Milk-Vetch*. Aſtrag. arenarius of Britiſh writers. A ſmall perennial plant, with elegant purple flowers, large for the ſize of the plant, found in ſandy and chalky paſtures, flowering from may to july.

BASIL. See *Clinopodium*.

BEDSTRAW. See *Galium*.

BELL-FLOWER. See *Campanula*.

BELLIS PERENNIS. *Perennial* or *common Daiſy*. In Yorkſhire *Dog-Daiſies* and *Bairn-worts*. A well known weed in moſt paſtures, that ſeems not to be eaten by any quadrupeds.

BETONICA OFFICINALIS. *Wood Betony*. The growth of woods, as the Engliſh name implies; but found alſo in paſtures, chiefly ſuch as are overrun with buſhes. Mr. Marſhall ſays it is a common article of herbage in the graſs-lands of Yorkſhire, in every ſoil and ſituation from the marſh to the mountains. In other parts of the iſland it is a certain indication of the land having been in wood.

BISTORTA. See *Polygonum*.

BLUE-BOTTLE. See *Centaurea*.

BRAKES. See *Pteris*.

BUGLE and BUGULA. See *Ajuga*.

BUNIUM BULBOCASTANUM. *Earth-nut, Pig-nut, Kipper-nut, Hawk-nut, Jur-nut* or *Yer-nut, Earth Cheſtnut, Ground-nut*. On heaths, commons and dry paſtures, chiefly among buſhes, in a gravelly or ſandy ſoil; flowering in may and june. The tuberous root is coveted by ſwine, and ſometimes eaten by children.

BURNET. See *Poterium* and *Sanguiſorba*.

BUTTER-BUR. See *Tuſſilago*.

BUTTER-CUPS. See *Ranunculus*.

CALTHA PALUSTRIS. *Marſh Marygold. Meadow-Boot*. Wet meadows, and by the ſides of wet ditches and ſtreams; adorning them in march and april, with its large bright yellow flowers. Cattle do not eat it, unleſs compelled by extreme hunger, and Boerhaave affirms that it is dangerous to them.

CAMMOCK. See *Ononis*.

CAMOMILE. See *Anthemis*.

CAMPANULA ROTUNDIFOLIA. *Round-leaved* or *common Bell-flower*. Common on heaths and other waſtes, in dry hilly ſituations. Flowers blue, varying to white, appearing from june to ſeptember. The root-leaves, which alone are round, are ſeldom ſeen, being hid in the graſs, and dropping off as the flower-ſtem advances. This plant, in the body of a paſture, indicates dryneſs, approaching to barrenneſs.

Campanula Rapunculus, or Rampions, is found in England, but rarely.

CAMPANULA GLOMERATA. *Small* or *cluſtered Bell-flower*, or *Little Canterbury Bells*, grows in hilly dry paſtures, particularly in a calcareous ſoil, flowering from june to ſeptember. Corolla blue, varying to purple and white.

CAMPION. See *Cucubalus* and *Lychnis*.

CARAWAYS. See *Carum*.

CARDAMINE PRATENSIS. *Common Ladies Smock, Cuckow-flower*: ſaid to be called *Canterbury Bells* in Norfolk; but ſurely this muſt be a miſtake, the flowers not having the moſt diſtant reſemblance to the bell ſhape. General in moiſt meadows, and by the ſides of ditches and ſtreams, flowering with the firſt appearance of the cuckow. Warm and antiſcorbutic. Recommended in hyſteric and epileptic caſes. Sheep eat it, at leaſt when firſt turned into a meadow or marſh; and it is probably wholeſome for them.

CARDUUS. *Thiſtle*. Moſt of the Thiſtles infeſt arable land; and being biennial, except the Way-Thiſtle, (for which ſee *Serratula*) might eaſily be extirpated, by not ſuffering them to ſeed. Some of this genus however are paſture weeds: as—

CARDUUS PALUSTRIS. *Marſh Thiſtle*, in Yorkſhire *Red Thiſtle*. In marſhes, wet meadows, boggy woods, and wet parts of heaths and commons. Five or ſix feet, and in woods ten or twelve feet high.

CARDUUS PRATENSIS. *Huds. Meadow Thiſtle*. In wet meadows.

CARDUUS ERIOPHORUS. *Woolly-headed Thiſtle*. The handſomeſt of all our Thiſtles. Eaſily known by its large woolly heads. In dry paſtures, by road ſides and in waſte places.

CARDUUS ACAULIS. *Dwarf Carline Thiſtle*. One of the moſt pernicious weeds in dry paſtures; ſpreading cloſe to the ground a foot in diameter, ſuffering no plant to grow near it, and pricking the noſes of the cattle. It flowers in july, and is ſaid to be perennial.

There are other ſpecies of Thiſtle found in paſtures, but they are rare and not noxious.

CARDUUS ARVENSIS. See *Serratula*.

——— STELLATUS. See *Centaurea*.

CAREX. *Sedge*. Species very numerous. Reſemble Graſſes, but are of a much harſher texture, the ſtem commonly three-cornered, and the leaves toothed like a ſaw along the edge. They grow moſtly in wet ſwampy grounds, or by the ſides of ditches and ſtreams: ſome however affect hilly paſtures and heaths, and may be diſtinguiſhed from the Graſſes, not only by their fructification, but by their blueneſs. In the ſens they are mown for a coarſe fodder. In meadows, draining and coal-aſhes will deſtroy them.

CARLINA VULGARIS. *Common Carline-Thiſtle*. Biennial; in dry paſtures. Indicates barrenneſs. Said to be a good remedy in hyſterical caſes. It is about a foot high, and flowers from june to ſeptember.

CARROT. See *Daucus*.

CARUM CARUI. *Common Caraway*. In rich meadows, but not common. Biennial. Flowering in may and june.

CATMINT. See *Nepeta*.

CENTAUREA NIGRA. *Black Centaury* or *Knap-weed*, variouſly pronounced *Knop-weed*, *Knob-weed*; alſo *Horſe-knops*, from *Knob* or *Nob*, a head. In Scotland *Horſe-Knot*. Other provincial names are *Cock-heads*, *Hard-heads*, *Hard-irons*, *Bulward* and *Matfellon*. It is a bad perennial weed, harſh and ſtubborn, not eaten either in graſs or in hay, increaſing much by the root, and not eaſily extirpated.

A larger ſort, called *Great Knapweed* or *Knobweed*, in Yorkſhire *Great Horſe-knobs*, *Centaurea Scabioſa*, occurs in meadows, but more commonly in arable fields and their borders, and by road ſides. It is perennial, and flowers in july and auguſt.

CENTAUREA CALCITRAPA. *Star-thiſtle*. In dry barren paſtures, and by way ſides. Annual, very ſpreading, prickly. Flowers red, appearing in auguſt. Very bitter, and ſaid to be uſed by brewers, when Hops are dear.

CERASTIUM. *Mouſe-ear*. Several ſpecies are found among Graſs, but they are ſmall annual plants, reſembling Chick-weed, of little value or detriment. *C. arvenſe* is found not only in arable fields, as the name implies, but in ſandy paſtures.

CHÆROPHYLLUM SYLVESTRE. *Wild Cicely*, *Cow-weed*, *Common Cow-Parſley*. Very common in paſtures, orchards and under hedges, flowering in may. Not unlike Hemlock, confounded with it by the country people, under the name of *Homlockes* when green, and *Keckſies* or *Kexes* when dry; but it is a ſmaller plant than Hemlock, of a paler green, and the ſtalk is not ſpotted. Rabbets and cows are fond of it when young. Linneus ſays that it indicates a luxuriant ſoil, and that the flowers may be uſed to dye wool both green and yellow.

CHÆROPHYLLUM TEMULUM. *Rough Cow-Parſley*, is diſtinguiſhed from the preceding by the roughneſs, deep purple colour and ſwelled joints of the ſtem, it alſo flowers a month or ſix weeks later, and is more confined to hedges. The ſtem being generally ſpotted with purple, this is more frequently miſtaken for Hemlock than the other.

CHEESE-RENNING. See *Galium*.

CHICKWEED. See *Alſine*.

CHLORA PERFOLIATA. *Yellow Centaury*, or *Perfoliate Yellow-wort*. *Gentiana perfoliata*. An annual plant, in paſtures, on chalky and limeſtone ſoils; flowering from june through the autumn. The plant glaucous, with gold-coloured flowers. Haller affirms, that it is more bitter than purple Centaury, *Gentiana Centaurium*.

CHRYSANTHEMUM LEUCANTHEMUM. *Common Ox-eye*, *Great Daiſy*, *Moon-flower*, *Maudlin-wort*. Very common in dry paſtures, flowering from may to july. Flowers large, the diſk yellow and the ray white. Perennial, ſomewhat creeping, and increaſing much by ſeed.

CICHORIUM INTYBUS. *Wild Succory*, *Cichory* or *Chicory*. Frequent among graſs on the borders of fields, flowering from july to ſeptember. In its wild ſtate hard, dry and juiceleſs, but very ſucculent as improved for cultivation.

CINQUEFOIL. See *Potentilla*.

CISTUS HELIANTHEMUM. *Dwarf Ciſtus* or *Little Sun-flower*. Dry paſtures, generally in calcareous ſoils. Perennial. Flowering from june to auguſt. It is a trailing plant, with handſome yellow flowers.

CLARY. See *Salvia*.

CLINOPODIUM VULGARE. *Wild Baſil*. In chalk and limeſtone paſtures, but more frequently in the hedges. Perennial. June. Flowers purple. Smell ſlightly aromatic, not unpleaſant.

CLOVER. See *Trifolium*.

COCK'S-COMB. See *Rhinanthus*.

COLCHICUM AUTUMNALE. *Common Meadow Saffron*, *Naked Ladies*. Orchards and meadows. Root bulbous, poiſonous or at leaſt highly acrimonious. An infuſion in vinegar, made into a ſyrup with ſugar or honey, is a uſeful pectoral and diuretic. It is leſs nauſeous than Squill, though more ſedative. No cattle eat this plant. The flowers, which reſemble thoſe of the purple Crocus, appear in autumn, and the leaves in ſpring.

COLT'S-FOOT. See *Tuſſilago*.

CONIUM MACULATUM. *Common Hemlock*. Rather by hedge and way ſides, among rubbiſh, and on dung-hills, than in paſtures. A biennial plant, known by its large ſpotted ſtalk, from four to ſix feet high, by the dark ſhining green colour of its large bottom leaves, and particularly by their diſagreeable ſmell when bruiſed. In its dry ſtate, it is the principal of the *Keckſies*.

This plant is poiſonous when imprudently uſed; but one of our beſt medicines in ſmall doſes, in ulcers, tumours, &c. From fifteen to twenty grains of the powdered leaves may be taken twice or thrice a day in chronic rheumatiſms.

CONYZA SQUARROSA. *Great Fleabane* or *Ploughman's Spikenard*. A biennial plant from two to three feet in height; found in dry hilly paſtures, by hedge-ſides and in woods; flowering from july to october.

CORN-SALAD. See *Valeriana*.

COW-PARSNEP. See *Heracleum*.

COW-WEED. See *Chærophyllum*.

COW-WHEAT. See *Melampyrum*.

COWSLIPS. See *Primula*.

CREPIS. Several ſpecies of this genus occur in paſtures, chiefly ſuch as are dry; they have yellow flowers, and are confounded with the Hawkweeds, &c. under the common name of *Gelds* or *Goulds* by the country people. They have nearly the ſame qualities with *Dandelion*, and rather do good than harm.

CROWFOOT. See *Ranunculus*.

CUCKOW-FLOWER. See *Cardamine*.

CUCUBALUS BEHEN. *Bladder Campion*, *Spattling Poppy*, *White Corn Campion*, *White Bottle*. In dry paſtures, but more common in corn fields. Perennial, ſmooth, flowers white, appearing in june, july and auguſt. Known by its inflated calyx, commonly veined like a net with green or brownish purple.

CUDWEED. See *Gnaphalium*.

DAISY. See *Bellis*.

DANDELION. See *Leontodon*.

DAUCUS CAROTA. *Wild Carrot*, *Bird's neſt*. *Bee's-neſt*. Common in paſtures, on balks and headlands. Biennial. June to auguſt. Seeds a powerful diuretic: an infuſion of them gives relief in the ſtone and gravel.

DEVIL'S-BIT. See *Scabioſa*.

DIANTHUS ARMERIA. *Deptford Pink.* A pretty little plant among graſs, but chiefly in buſhy places and woods.

DIANTHUS PROLIFER. *Proliferous Pink.* In ſandy paſtures, but not common.

DIANTHUS DELTOIDES. *Maiden Pink.* Paſtures and heaths, on a light ſoil, not uncommon.

DIGITALIS PURPUREA. *Purple Fox-glove.* Sandy and gravelly ſoils, in gravel-pits, in and about woods, and in waſte places, ſeldom in the body of a paſture.

DOCK. See *Rumex.*

DROPWORT. See *Spiræa.*

ELECAMPANE. See *Inula.*

ERICA VULGARIS. *Common Heath.* General on dry paſtures, called heaths from the prevalence of this ſhrub. Extirpated by paring and burning.

ERIGERON ACRE. *Blue Erigeron* or *Flea-bane.* In dry ſandy and chalky paſtures, and on walls, but not very common. July to ſeptember.

ERIOPHORUM VAGINATUM. *Mountain* or *ſingle-ſpiked Cotton-graſs.*—E. anguſtifolium. *Narrow-leaved Cotton-graſs.*—*Hare's-tail Raſh. Moſs-crops.* Moors and boggy ground, which are often white with theſe plants in june and july; they flower in april and may. Early in ſpring, before the graſſes are ſufficiently grown, ſheep crop the leaves.

EUPHRASIA OFFICINALIS. *Common Eye-bright.* A ſmall annual plant, common on heaths and commons. In paſtures indicating ſterility. It flowers from july to ſeptember.

FERN. See *Pteris.*

FICARIA. See *Ranunculus.*

FLAG. See *Iris.*

FLEABANE. See *Inula.*

FOX-GLOVE. See *Digitalis.*

GALANTHUS NIVALIS. *Snow-drop. Fair Maids of February.* This, with ſeveral other bulbous plants, is often found in orchards, and paſtures that may once have been orchards.

GALIUM. Several ſpecies of Galium or *Bedſtraw* occur in paſtures.

G. paluſtre. *White Ladies Bedſtraw.* In moiſt meadows, and on the banks of rivers and ditches; flowering in july.

G. uliginoſum. *Marſh Ladies Bedſtraw.* On wet heaths, bogs, low meadows, and by river ſides; flowering in july and auguſt.

G. verum. *Yellow Ladies Bedſtraw. Cheeſe-renning.* Common in paſtures, and by the ſides of fields and roads in a dry ſoil; flowering from june to ſeptember, flouriſhing in the moſt unremitting drought. Flowers yellow; thoſe of the two former white. Suppoſed to curdle milk. The flowering ſtems dye a good yellow. The roots dye a brighter red than Madder.

G. erectum. *Upright Ladies Bedſtraw.* Meadows and moiſt paſtures. Flowers white.

G. Mollugo. *Great Ladies Bedſtraw.* Common in hedges and among buſhes, flowering from june to auguſt. Flowers white.

G. Aparine. *Cleavers* or *Gooſe-graſs*, keeps to hedges and cultivated grounds.

GARLICK. See *Allium.*

GENTIANA PNEUMONANTHE. *Marſh Gentian* or *Calathian Violet.* In wet meadows and marſhes, and the boggy parts of heaths, chiefly in the north of England.

G. Centaurium. *Leſſer Centaury.* Dry paſtures. A ſmall annual plant with purple flowers, appearing from june to auguſt. Extremely bitter, and the baſis of the Portland powder. A tincture of it is a good medicine to weak ſtomachs. A decoction of the whole plant deſtroys lice, and cures the itch.

G. Amarella and campeſtris. *Autumnal* and *Field Gentian.* Both ſmall annual plants in dry paſtures, with purple flowers.

GERANIUM CICUTARIUM. *Hemlock Crane's-bill.* In ſandy paſtures. Annual.

G. moſchatum. *Muſk Crane's-bill.* Dry paſtures.

G. phæum. *Spotted Crane's-bill.* In high paſtures.

G. ſylvaticum. *Wood Crane's-bill.* High paſtures, among buſhes and in woods.

G. pratenſe. *Meadow Crane's-bill.* In moiſt meadows.

G. pyrenaicum, molle, rotundifolium, columbinum, diſſectum. Moſtly in dry paſtures. Annual.

GNAPHALIUM or *Cudweed*; ſeveral ſorts in dry paſtures; G. germanicum moſt common. G. uliginoſum, where water has ſtood in winter.

GOAT'S-BEARD. See *Tragopegon.*

HAREBELLS. See *Hyacinthus.*

HAWKWEED. See *Hieracium.*

HEATH. See *Erica.*

HEDYSARUM ONOBRYCHIS. *Saint-foin.* On hilly paſtures and open downs, particularly in a calcareous ſoil, flowering in june and july.

HEMLOCK. See *Conium.*

HERACLEUM SPHONDYLIUM. *Common Cow-Parſnep, Meadow Parſnep, Madnep*; in Norfolk *Hogweed*, by which name Knot-graſs (Polygonum aviculare) is known in ſome other counties. Paſtures, orchards, hedges, woods, in moiſt and fertile ſoils. Biennial. Flowering from may to july. Swine and rabbets are fond of the leaves; kine, goats and ſheep will alſo eat them. Kine are even ſaid to be very fond of this plant when cut young.

HIERACIUM. *Hawkweed.* Several plants which have compound yellow flowers, but not of this genus, are confounded under the name of Hawkweed. One ſpecies, *H. Pilioſella* or *Mouſe-ear*, is very common in dry paſtures, flowering from may to ſeptember. It has a perennial creeping root; the barren ſtalks or runners are procumbent, and the flowering ſtalks are from four to ſeven inches high, having one flower at top of a pale yellow or brimſtone colour; the ſtalk and leaves have long hairs.

H. paludoſum, *Marſh Hawkweed*, occurs in wet meadows, but is not common in England. See *Crepis* and *Hypochæris.*

HIPPOCREPIS COMOSA. *Tufted Horſe-ſhoe Vetch.* On chalk downs, flowering from april to july. It is a perennial, trailing, ſmooth, elegant, with abundance of yellow pea flowers, and remarkable pods, the parts of which are curved like a horſe-ſhoe.

HYACINTHUS NON SCRIPTUS. *Common Hyacinth* or *Harebells.* Common in woods, coppices, and hedge-rows of paſtures, adorning them with its ſpikes of pendant blue flowers in the ſpring. The freſh roots are poiſonous.

HYOSERIS MINIMA. *Small Swine's Succory.* Paſtures in a ſandy ſoil. Annual, not very common.

HYPERICUM PERFORATUM. *Common* or *perforated St. John's-wort.* Woods, thickets, banks, and hedges, but not in the body of paſtures, except ſuch as are buſhy. Perennial, two feet high, with handſome yellow flowers, appearing from july to ſeptember. Known by the ſmall black glands ſprinkled over the plant, and the numerous holes which appear on the leaves when held up to the light. The flowers are uſed by the common people to make an ointment, but no regard is paid to it by the faculty.

Other ſpecies are found in hedges: as—

H. Androſæmum, or *Tutſan St. John's-wort.* H. hirſutum or *hairy St. John's-wort.* H. montanum, or *Mountain St. John's-wort*: and H. quadrangulare, *Square-ſtalked St. John's-wort* or *St. Peter's-wort.*

Two ſmaller ſorts are found in dry paſtures and heaths, but chiefly among buſhes.

H. humifuſum, *Trailing St. John's-wort*; and H. pulchrum, *Upright St. John's-wort.*

HYPOCHÆRIS RADICATA. *Long-rooted Hypochæris* or *Hawkweed.* Common in dry paſtures, on banks and heaths, and very conſpicuous with its yellow flowers in the early part of ſummer. Stems from one to two feet high; but in barren ſoils not more than five or ſix inches. The length of the root, which is the thickneſs of the little finger, diſtinguiſhes this plant from *Leontodon autumnale* and other plants which bear ſome reſemblance to it in the flowers.

H. glabra and maculata are found in dry paſtures, but not common.

JASIONE MONTANA. *Hairy Sheep's Scabious, Scabious Sheep's-bit. Rampions with ſcabious like heads.* Common on dry ſandy grounds, heaths and hilly paſtures, flowering from june to auguſt. Annual. Flowers blue

blue in a head. The whole plant is milky, and ſometimes eaten by ſheep.

INULA HELENIUM. *Elecampane.* One of the largeſt of our herbaceous plants, being from three to five feet high, with large yellow flowers. In moiſt meadows and hedges. The root is a good pectoral. A decoction of it cures ſheep of the ſcab, hence its name *Scab-wort*; in ſome counties it is called *Horſe-heal*, probably from its reputed virtues in curing the cutaneous diſeaſes of horſes.

INULA DYSENTERICA. *Common* or *middle Fleabane.* Moiſt meadows, watery places, by the ſides of ditches and ſtreams, flowering from july to october, often overrunning large tracts of land, and generally left untouched by animals. Stem from one to two feet high. Flowers yellow rayed. Linneus named it *dyſenterica*, from the Ruſſian ſoldiers having been cured of the dyſentery by it; the ſmoke of it is ſaid to chaſe away fleas and other inſects, hence our Engliſh name.

Inula uliginoſa. *Small dwarf* or *marſh Fleabane.* Common where water has ſtagnated in winter, by road ſides, on the banks of ponds, &c. in a ſtiffiſh ſoil. This has the ſame qualities with the preceding, and is given to horſes for the botts. Both ſorts flower from auguſt to october.

IRIS PSEUDACORUS. *Common yellow* or *water Iris*, or *Flower-de-luce, Yellow Flag, Water Flag, Skeggs* or *Lugs.* Marſhy meadows and fens, by the ſides of ſtreams, pools and ditches; flowering in june and july.

Iris fœtidiſſima. *Stinking Iris, Gladwin* or *Gladdon*, in hedges only.

JUNCUS. *Ruſh. Seaves* in Yorkſhire. There are ſeveral ſorts of Ruſhes in paſtures. The moſt common are Juncus conglomeratus or *round-headed Ruſh*; J. effuſus or *common ſoft Ruſh*; and J. tenax or *common hard Ruſh.* In wet meadows and marſhes; always indicating a ſoil that holds wet. They are uſed, particularly the ſecond, for making ſmall baſkets and toys, and the wicks for watch-lights. For the method of deſtroying them in paſtures, ſee *Juncus effuſus.*

Other ſorts are common on boggy grounds, and J. campeſtris on dry paſtures and heaths, but theſe are all ſmaller plants, and are not found on good ground.

KIDNEY-VETCH. See *Anthyllis.*

KNAPWEED. See *Centaurea.*

KNOT-GRASS. See *Polygonum.*

LADIES BEDSTRAW. See *Galium.*

——— FINGER. See *Anthyllis.*

——— MANTLE. See *Alchemilla.*

——— SMOCK. See *Cardamine.*

LAMB'S LETTUCE. See *Valeriana.*

LAMIUM ALBUM. *White Archangel* or *Dead-Nettle:* and purpureum or *purple Archangel* or *Dead-Nettle* are ſometimes found in ſoul meadows, but more commonly in hedges, and by way ſides.

LAPATHUM. See *Rumex.*

LATHYRUS NISSOLIA. *Crimſon Graſs-Vetch.* In mowing graſs; the leaves ſo like thoſe of Graſs as to be overlooked, till it ſhows the beautiful crimſon pea flowers. It grows alſo among buſhes and in woods.

LATHYRUS PRATENSIS. *Common yellow* or *Meadow Vetchling, Tare everlaſting.* Meadows and paſtures, woods, thickets and hedges; flowering from june to auguſt. Perennial, creeping. Flowers yellow, of the pea ſhape, ſeveral together. It ſeems worth cultivating with Graſs ſeeds.

Other ſpecies are found in hedges and woods, but not very common.

LEONTODON TARAXACUM. *Common Dandelion.* Common in meadows every where; flowering from april to ſeptember, and later in mild weather. Early in the ſpring the leaves are no bad ingredient in ſalads. The French eat them blanched, and alſo the roots. Its diuretic effects have given it a vulgar name well known. The expreſſed juice has been given to the quantity of four ounces, three or four times a day, in obſtructions of the bowels. Swine devour the plant greedily; Linneus ſays that ſheep and kine are not fond of it, and that horſes refuſe it. The Gloceſterſhire dairymen, according to Mr. Marſhall, obſerve, that cows have an averſion to the bitter graſſes, as they call Dandelion and the Hawkweeds; but that ſheep are particularly partial to them, eating the very flowers.

LEPIDIUM LATIFOLIUM. *Broad-leaved Pepperwort* or *Dittander. Poor man's Pepper.* Among graſs, chiefly in ſalt marſhes, but not very common. It flowers in july. Perennial. Acrid, antiſcorbutic, formerly uſed inſtead of Horſe-radiſh. The young leaves ſometimes eaten in ſalads.

LETTUCE, LAMB'S. See *Valeriana.*

LINUM CATHARTICUM. *Purging Flax.*

LOTUS CORNICULATA. *Common Bird's-foot Trefoil, ſmall cocked Trefoil, Bird's-foot Clover* or *Clover, Cheeſecake-graſs, Butter-jags, Crow-toes.* Recommended for cultivation by Ellis, under the name of *Ladies Finger*; and by Anderſon, under that of *Aſtragalus glycyphyllos* or *Milkwort.* See *Aſtragalus.*

Bird's-foot Trefoil is common in meadows, paſtures, heaths, by road ſides, in hedges, among buſhes, and in woods; flowering from june to auguſt. There is a a very full deſcription and hiſtory of it under its proper head.

LUCERN. See *Medicago.*

LYCHNIS FLOS CUCULI. *Red-flowered Meadow Lychnis, Meadow Pink, Wild Williams, Cuckow Flower, Ragged Robin, Crow-flower, feathered wild Campion, marſh Gilliflower, Cuckow Gilliflower, Meadow Campion, Ragged Robin.* Moiſt meadows, flowering in may and june. Perennial. Flowers pink or purpliſh red and jagged. None of our domeſtic quadrupeds ſeem fond of it.

LYCHNIS VESPERTINA. *L. dioica* of Linneus. *White-flowered Lychnis, Wild White Campion.* Fallow fields, by hedges, ditches and highways, among buſhes, and not uncommonly in paſtures. I have not ſeen the *Red Wild Campion* or *Lychnis diurna* in the body of paſtures, but by moiſt ſhady ditches and hedges, and ſometimes in woods. The White Campion prefers dry ſoils.

LYSIMACHIA VULGARIS. *Common Looſe-ſtrife.* In marſhy meadows, and on the banks of ſtreams; flowering from the end of june to ſeptember. Perennial, with yellow flowers in a large panicle.

LYSIMACHIA NUMMULARIA. *Creeping Looſe-ſtrife, Moneywort, Herb Twopence* and *Twopenny Graſs*, from the round ſhape of the leaves. Moiſt meadows, on the ſides of ditches, and under wet hedges; flowering in june and july. Perennial, with trailing ſtalks, and large yellow flowers. According to Linneus, eaten by kine and ſheep, not much reliſhed by goats, and refuſed by horſes. An infuſion of the plant in oil is ſaid to deſtroy weevils.

MEADOW RUE. See *Thalictrum.*

——— SAFFRON. See *Colchicum.*

——— SAXIFRAGE. See *Peucedanum.*

——— SWEET. See *Spirea.*

MEDICAGO SATIVA. *Purple Medick* or *Lucern.* Probably not a native of England.

MEDICAGO FALCATA. *Yellow Medick* or *Yellow Lucern.* Dry paſtures and way ſides. This has been recommended for cultivation. It varies much in the colour of its flowers, and even produces them blue and yellow on the ſame ſtalk.

MEDICAGO LUPULINA. *Hop* or *black Medick.* Cultivated under the names of *Trefoil, Black ſeed* and *Black Nonſuch*; our old writers call it *Melilot Trefoil.* Common on dry banks and hilly paſtures, chiefly in a dry ſoil; flowering in june and july.

MEDICAGO POLYMORPHA ARABICA. *Heart Medick, Spotted Medick, Heart Trefoil, Heart Clover* or *Clover.* Common on banks and borders of fields, in dry ſandy paſtures, eſpecially near the ſea; flowering in may and june. Known by the dark-brown or blood-coloured ſpot on the leaves, ſhaped like the heart or head of an arrow.

It frequently appears among Lucern, Saint-foin, and Trefoil. On account of the roughneſs of the ſeeds, it ſhould be cut when young.

The *Medicagos*, like the Trefoils, have ternate leaves, but differ much in the ſeeds.

MELAMPYRUM PRATENSE. *Meadow Cow-wheat.* Woods and woody paſtures. Linneus obſerves that cattle are very fond of this plant, and that butter is good where it abounds.

MENTHA. *Mint.* Several ſpecies are wild in hedges, ditches, marſhy and watery places, the banks of rivers, and wet paſtures. *M. arvenſis* or *Corn Mint*, as the name implies, grows in arable land, and is a very bad weed.

MERCURIALIS PERENNIS. *Dog's-Mercury.* Common under hedges, ſeldom in the body of a paſture, except where there are buſhes to protect it; flowering from the end of march to the middle of may. Suppoſed to be poiſonous. Linneus ſays it is noxious to ſheep. With us it does not ſeem to be eaten by any quadruped.

Engliſh Mercury, which is ſometimes eaten as Spinach, is a ſpecies of *Chenopodium*.

MILFOIL. See *Achillea*.

MILKWORT. See *Polygala*.

MINT. See *Mentha*.

MOUSE-EAR SCORPION-GRASS. See *Myoſotis*.

MYOSOTIS SCORPIOIDES. *Mouſe-ear Scorpion-graſs.* One variety in dry paſtures; and another in wet meadows or marſhy grounds, commonly by the ſide of water. Linneus ſays, the latter is noxious to ſheep; but I ſuſpect that they never eat it.

NEPETA CATARIA. *Common Catmint* or *Nep.* In hedges, but not in the body of the paſture: chiefly in a calcareous ſoil. Not eaten by domeſtic animals.

NETTLE, DEAD. See *Lamium*.

NONESUCH. See *Medicago*.

NUT, EARTH or PIG. See *Bunium*.

ONONIS SPINOSA. *Thorny Reſt-harrow, Cammock, Petty Whin, Ground Furze*; in Suffolk *Lond-Whins* or *Land-Whins*; in ſome counties *Whin* is pronounced *Fin*: in Yorkſhire *Ruſt-burn*, that is *Reſt-bourn*. Barren paſtures, both in a light and ſtrong ſoil. It has a ſtrong creeping root, which makes it difficult to be rooted out, but renders this plant very fit to be ſown on ſea and ſen banks. It has ſtout thorns at the baſe of the branches, and handſome red pea-bloom flowers. Linneus's account is, that kine and goats eat it, ſheep are fond of it, horſes and ſwine refuſe it: horſes however will eat the younger ſhoots. A decoction of the roots has been recommended in the ſtone and jaundice.

We have another ſort (Ononis arvenſis) hairy and thornleſs, in like ſituations.

OPHIOGLOSSUM VULGATUM. *Common Adder's-tongue.* Moiſt meadows.

OPHRYS SPIRALIS. *Spiral Ophrys* or *Triple Ladies traces.* On heaths and commons.

OPHRYS OVATA. *Common Ophrys* or *Tway-blade.* Meadows and heaths, but more frequently in woods and moiſt thickets.

Ophrys muſcifera or *Fly Ophrys*; O. apifera or *Bee Ophrys*; and Oaranifera or *Spider Ophrys* are found among graſs, chiefly in chalky paſtures.

ORCHIS BIFOLIA. *Butterfly Orchis.* Woods, but ſometimes in paſtures among buſhes.

O. pyramidalis. *Pyramidal Orchis.* Calcareous paſtures, Known by the ſhape of the ſpike. Flowers very numerous, deep fleſh-colour or pale purple, ſometimes white.

O. morio. *Female* or *meadow Orchis.* Common in meadows moderately dry, with the Cowſlip. Flowers few, purple.

O. maſcula. *Male* or *early ſpotted Orchis.* Common in meadows and woods. As tall again as the preceding, with ſpotted leaves and more numerous flowers.

O. uſtulata. *Dwarf Orchis.* Chalk downs. Diſtinguiſhed by its ſmall dotted flowers.

O. militaris. *Man Orchis.* Calcareous paſtures.—Very different from Ophrys anthropophora or *Man Ophrys*, which is found in like places.

The above have a double bulb to the root; the ſucceeding ones have palmate bulbs.

O. latifolia. *Broad-leaved* or *Marſh Orchis.* Wet meadows and marſhes.

O. maculata. *Spotted Orchis.* Moiſt meadows and woods; ſometimes in barren paſtures, with the ſpike only half the ſize and fewer flowers.

O. conopſea. *Long-ſpurred Orchis.* An elegant ſpecies, diſtinguiſhed by the length of its ſpurs. It has ſome reſemblance to O. *pyramidalis*, but differs in the root, the narrowneſs of the leaves, and length of the ſpike.

Salep is prepared from the roots of ſome ſpecies of Orchis: they all ſeem to have the ſame quality.

ORNITHOGALUM. *Star of Bethlehem.* Two or three ſpecies are found in orchards and paſtures; but they are not common, and are doubtful natives, like many other bulbs.

ORNITHOPUS PERPUSILLUS. *Common Bird's-foot.* Dry heaths, commons and downs, on banks and by road ſides; flowering from may to ſeptember. A very ſmall plant.

OX-EYE DAISY. See *Chryſanthemum*.

PAGILS. See *Primula*.

PARSNEP. See *Paſtinaca*.

PASQUE-FLOWER. See *Anemone*.

PASTINACA SYLVESTRIS. *Wild Parſnep.* In paſtures and on the borders of corn fields; flowering in july. Biennial. Flowers yellow.

PEDICULARIS PALUSTRIS. *Marſh Louſewort.* Wet meadows. Said to make ſheep ſcabby, and louſy.

P. ſylvatica. *Common Louſewort*, or *red Rattle.* A much ſmaller plant in moiſt paſtures and heaths.

PENNY GRASS. See *Rhinanthus*.

PETASITES. See *Tuſſilago*.

PEUCEDANUM SILAUS. *Meadow Saxifrage.* Moiſtiſh meadows. Flowering in july and auguſt. An umbellate plant.

PICRIS ECHIOIDES. *Rough Picris* or *common Ox-tongue.* And P. hieracioides, *Yellow Succory* or *Hawkweed Ox-tongue.* Both among graſs on the borders of corn fields. Flowers yellow.

PILEWORT. See *Ranunculus*.

PIMPINELLA SAXIFRAGA. *Burnet Saxifrage.* Dry paſtures. A perennial umbellate plant, flowering in auguſt.

PLANTAGO MAJOR. *Great Plantain.* P. media, *hoary Plantain*, and P. lanceolata, *ribwort Plantain.* Paſtures and by way ſides. The laſt is now cultivated under the name of Ribwort.

POLYGALA VULGARIS. *Common Milkwort.* Paſtures, heaths and commons, flowering in june and july. Perennial. Flowers blue, varying to purple, fleſh-coloured and white. Cows and ſheep are ſaid to eat it, and it is a notion that it increaſes milk. The powdered root is good in the pleuriſy; and an infuſion of the herb, which is bitter, is uſeful in a catarrhous cough, about a quarter of a pint faſting every morning.

POLYGONUM BISTORTA. *Biſtort* or *Snakeweed.* Moiſtiſh meadows. Perennial. Root very aſtringent, and would probably tan leather. Not very common, but in ſome places occupies excluſively large patches of ground.

Several ſpecies of Polygonum or Perſicaria, vulgarly called *Arſmart*, are common in ditches, ponds and marſhes. P. Perſicaria or *Willow-weed* grows alſo in paſtures, on dunghills, &c.

POLYGONUM AVICULARE. *Knot-graſs, Swine's-graſs, Hogweed*, in the north *Bird's tongue.* Corn fields, way ſides, and in paſtures where dung has been laid, ſpreading very much. All quadrupeds eat it, and ſmall birds are very fond of the ſeeds.

P. convolvulus. *Black Bindweed*, or *climbing Snakeweed.* Corn fields, gardens and hedges, but ſeldom among graſs.

POPPY SPATLING. See *Cucubalus*.

POTENTILLA ANSERINA. *Silver-weed, Wild Tanſey, Gooſe Tanſey, Gooſe-graſs, feathered Cinquefoil.* Way ſides and low paſtures, eſpecially where water ſtands in winter. Perennial. June and july. Leaves white. Flowers yellow. Swine are fond of the roots, which taſte ſomewhat like Parſneps. Sheep refuſe the herb, but other cattle are ſaid to eat it: with us it ſeems generally untouched. The powder of the dried leaves is given in the ague.

Potentilla reptans. *Common Cinquefoil* or *five-leaved graſs.* Paſtures and road ſides. A decoction of the red bark of the root is a good gargle for looſe teeth and ſpongy gums.

There are other ſpecies, but not common.

POTERIUM SANGUISORBA. *Common, ſmall* or *upland Burnet.* Dry calcareous paſtures. Recommended

to be cultivated for ſheep.—Great Burnet ſee under *Sanguiſorba*.

PRIMROSE. See *Primula*.

PRIMULA VULGARIS. *Common Primroſe*. In woods, hedges, thickets and heaths among buſhes.

P. elatior. *Ox-lips* or *great Cowſlips*. Woods, hedges, and ſometimes in paſtures.

P. officinalis. *Cowſlips, Pagils* or *Paigles*. In Yorkſhire *Cow ſtriplings*. Common in meadows and paſtures in loamy or clayey ſoils, flowering in april and may.

PRUNELLA VULGARIS. *Common Self-heal*. Meadows and paſtures. Flowers blue, varying to purple and white.

PTERIS AQUILINA. *Female Fern, Common Brakes*. On commons and in woods.

RAGWORT. See *Senecio*.

RAMSONS. See *Allium*.

RANUNCULUS FICARIA. *Common Pilewort, leſſer Celandine*. Common in meadows. Differs from the other ſpecies in having eight or nine petals. Root compoſed of oblong tubers. Flowers early in march or april.

R. Flammula, and Lingua. *Small* and *great Spearwort* or *Crowfoot*. In boggy meadows, and by the ſides of pools and ſtreams.

R. repens, bulboſus and acris. *Creeping, bulbous* and *upright Crowfoot*, or *Crowflower*; common in meadows, and confounded under the names of *Butter-cups, Butter-flowers, Gold-cups, King-cups, Gold-knobs*. Flowers of a fine ſhining yellow, vulgarly ſuppoſed to give a yellow colour to butter, but falſely, for cattle do not eat the flowering ſtems. But as they indicate good land, they may mediately indicate good butter.

Theſe plants, though very acrid, are thought by ſome to be a grateful and uſeful admixture in hay, correcting the flatulent nature of graſs. Mr. Marſhall informs us, that in the vale of Glocester, the *creeping* Crowfoot is eſteemed as valuable herbage, whilſt the two others, being extremely acrid, are conſidered as very pernicious, eſpecially among hay. This is worth enquiring into.

Other ſpecies grow by water ſides, in water and in marſhes. Ranunculus auricomus is common in woods; and arvenſis among corn. It is ſaid that the latter is fatal to ſheep, and that three ounces of the juice killed a dog in four minutes.—It is certainly a very ſuſpicious genus.

RATTLE, RED. See *Pedicularis*.

——— YELLOW. See *Rhinanthus*.

RESEDA LUTEOLA. *Wild Woad, Dyer's-weed* or *Yellow-weed, Weld, Would* or *Weld*. Meadows, paſtures, walls, and barren uncultivated ſpots. Annual, flowering in june and july. Cultivated in ſight ſoils for the dyers. Very different from the Iſatis or true Woad uſed in dyeing blue, and as the baſe of other colours.

Reſeda lutea. *Baſe Rocket* or *Rocket Yellow-weed*. Paſtures, chiefly in a calcareous ſoil, in corn fields, and ſometimes on walls.

REST-HARROW. See *Ononis*.

RHINANTHUS CRISTA GALLI. *Yellow Rattle, Cock's-comb, Penny-graſs, Penny-weed*, or *Henpenny*. Meadows and woods. Annual; flowering in june. This keeps its ground, for the ſeeds are ripe at the uſual time of cutting hay. They are ſaid to be very nutritive.

RIB-GRASS or *Ribwort*. See *Plantago*.

RUMEX. *Dock*. Theſe are univerſally reprobated as ſome of the worſt of weeds. Three ſorts are common in paſtures—Rumex criſpus or *Curled Dock*; common among Clover. R. acutus or *Sharp-leaved Dock*, the roots of which are uſed in dyeing. R. obtuſifolius or *Broad-leaved Dock*, in farm yards, among dung and rubbiſh, and by the ſides of ditches, carried into paſtures with dung, or ſpreading by root and ſeed from dunghills. Theſe ſorts are perennial, and flower from june to auguſt.

RUMEX ACETOSA. *Common Sorrel: Green-Sauce: Sour-docken* in Yorkſhire. Abundant in paſtures. Eaten by all quadrupeds. Cultivated in France for the table. Much eaten in Ireland. The dried root gives out a beautiful red colour when boiled.

Rumex Acetoſella. *Sheep's Sorrel*. Sandy paſtures.

Rumex paludoſus or *Marſh Dock*; and R. Hydrolapathum or *Water Dock*, a medicine of conſiderable efficacy; grow in marſhes and on the banks of rivers.

RUSH. See *Juncus*.

SAGE. See *Salvia*.

SAINT-FOIN. See *Hedyſarum*.

SAINT-JOHN'S-WORT. See *Hypericum*.

SALVIA PRATENSIS. *Meadow Sage* or *Clary*: and Verbenaca, *Wild Sage* or *Clary*. Both in dry paſtures.

SANGUISORBA OFFICINALIS. *Great* or *Meadow Burnet*. Moiſt paſtures, eſpecially in a calcareous ſoil; flowering from june to auguſt. A coarſe woody plant, from eighteen inches to above two feet in height. Not fit for feeding, like the ſmall Burnet, which ſee under *Poterium*.

SAPONARIA OFFICINALIS. *Common Soapwort* or *Bruiſewort*. Hedges and ſometimes in meadows. Bitter. Will lather in water like ſoap. Uſed inſtead of Sarſaparilla in Germany and France. Perennial: flowering in july and auguſt.

SATYRIUM. Several ſpecies of *Satyrion* grow in meadows, but not common. They are of the Orchis tribe.

SAW-WORT. See *Serratula*.

SAXIFRAGA GRANULATA. *White Saxifrage* or *Scurvygreen*. Dry paſtures; flowering in april and may. Root compoſed of a cloſe bunch of little tubercles. Flowers white, large for the plant.

SCABIOSA SUCCISA. *Devil's-bit*: ſo called from the root being as it were bit off. Flowers in globular heads; blueiſh purple, varying to fleſh-coloured and white. Common in paſtures; flowering from june to auguſt.

SCABIOSA ARVENSIS. *Field Scabious*. Both paſtures and corn fields; flowering in july and auguſt. Flowers blue, purple or white, a little woolly; the outer ones larger, with four unequal clefts; the inner ones regular. Slightly aſtringent, bitter and ſaponaceous.

SCABIOSA COLUMBARIA. *Small Scabious*. Frequent in dry hilly paſtures: flowering from june to ſeptember. Flowers blueiſh lilac.

SCABIOUS, SHEEP'S. See *Jaſione*.

SCORPION-GRASS. See *Myoſotis*.

SELF-HEAL. See *Prunella*.

SENECIO JACOBÆA. *Ragwort, Ragweed, Staggerwort, Stanerwort, St. James's-wort, Seggram* or *Seagrim*. Perennial; flowering in july. Common in paſtures and by road ſides.

Senecio vulgaris. *Common Groundſel*. Abundant in cultivated ground, but ſeldom in paſtures, being annual. According to Linnæus ſwine and goats eat it; but horſes and ſheep refuſe it. In this he is miſtaken, for both horſes and ſheep eat it.

SERRATULA ARVENSIS. Carduus arvenſis. *Way Thiſtle*. Every where, in good land: in paſtures, corn fields, by road ſides, &c. Aſſes alone eat it, except ſometimes the tops, when tender. Few of the Thiſtles are perennial except this.

SILVER-WEED. See *Potentilla*.

SORREL. See *Rumex*.

SPIRÆA FILIPENDULA. *Dropwort*. So named from its tuberous roots. Common in high paſtures in a calcareous ſoil: flowering in june and july. Hogs are fond of the roots.

SPIRÆA ULMARIA. *Meadow-ſweet, Queen of the meadows*. Moiſt meadows, and the banks of ſtreams. Flowering at the ſame time. Swine, ſheep and goats are ſaid to eat it; kine and horſes to refuſe it.

STELLARIA GRAMINEA. *Leſſer Stichwort*. Paſtures and hedge-banks; flowering in may. Annual. Flowers upright, white, cloſing in rain. The young ſhoots and leaves as good as ſpring Spinach. Swine, cows and horſes eat it; and it is grateful to ſmall birds and young chickens.

The greater ſort, *Stellaria boloſtea*, is common in woods and hedges.

SUCCORY. See *Cichorium*.

TANACETUM VULGARE. *Common Tanſey*. High paſtures, banks of rivers and ſwampy places; flowering in june.

TARE. See *Vicia*.

THALICTRUM FLAVUM. *Common Meadow-Rue*. Moiſt paſtures and the banks of ſtreams: flowering in june.

Root

Root a full yellow. Flowers numerous, yellowiſh white.

There is a ſmaller ſort, *T. minus*, in high but moiſt paſtures, in a calcareous ſoil; flowering in july and auguſt.

THESIUM LINOPHYLLUM. *Baſtard Toad-Flax.* Dry heaths and hills in a calcareous ſoil; found alſo in looſe ſand. It is a ſmall plant, with flowers of no ſhow, and is in a manner loſt among the graſs.

THISTLE. See *Carduus* and *Serratula.*

THYMUS SERPYLLUM. *Mother of Thyme, Wild Thyme, Common Thyme.* Heaths, commons, downs, and high dry paſtures: flowering in july and auguſt. It ſeems a miſtake that ſheep feed upon it, but paſtures where this plant abounds are peculiarly adapted to ſheep, being dry and ſound. Bees are much attached to this and other aromatic plants.

TOAD-FLAX. See *Antirrhinum.*

————, Baſtard. See *Theſium.*

TORMENTILLA ERECTA. *Tormentil* or *Septfoil.* Barren paſtures, ſhady places and moors. It has four petals, and a calyx cut into eight parts; whereas Potentilla has five petals, and a ten-cleft calyx. The root is a ſtrong aſtringent, and is given to cattle in the dyſentery; it dyes red and tans leather.

TRAGOPOGON PRATENSE. *Yellow Goat's-beard* or *Go to bed at noon.* In meadows; flowering in june. Kine, ſheep and horſes eat it, ſwine are very fond of it.

TRAGOPOGON PORRIFOLIUM. *Purple Goat's-beard.* In ſome meadows, and in upland paſtures in ſome countries not unfrequent; flowering in may. The roots of both are eſculent; and the latter is cultivated under the name of *Salſafy.*

TREFOIL. See *Medicago* and *Trifolium.*

———— Bird's-foot. See *Lotus.*

TRIFOLIUM MELILOTUS OFFICINALIS. *Melilot Trefoil* or *common Melilot.* In meadows and on ditch banks, but rather a corn than paſture weed.

TRIFOLIUM REPENS. *Creeping* or *White Trefoil* or *Clover, Dutch Clover.* Meadows and paſtures in a good ſoil. Much cultivated.

TRIFOLIUM PRATENSE. *Purple Trefoil, Honeyſuckle Trefoil, Clover-graſs* or *Red Clover.* Meadows and paſtures. The *cultivated red* or *broad Clover* and the *Marl-graſs*, are nothing but varieties of this.

TRIFOLIUM OCHROLEUCUM or *Brimſtone Trefoil*, and ſeveral ſmaller ſorts, are common in dry paſtures.

TRIFOLIUM FRAGIFERUM or *Strawberry Trefoil* is common in moiſt meadows.

TRIFOLIUM PROCUMBENS and FILIFORME. *Hop Trefoils.* Dry paſtures. Not *T. agrarium* of Linneus.

TRIGLOCHIN PALUSTRE. *Arrow-headed Graſs*; *Marſh Arrow-Graſs.* Wet meadows. Cows are fond of it; other quadrupeds eat it.

Triglochin maritimum. *Sea Arrow-Graſs.* In ſalt-marſhes. All domeſtic quadrupeds reliſh it.

TROLLIUS EUROPÆUS. *Globe-flower, Gowlans Globe-flower, Locker-gowlans.* Mountainous meadows in Wales and the north of England. Moiſt woods in Yorkſhire. Marſhes in Durham.

TURRITIS GLABRA. *Smooth Tower-Muſtard*, or *Tower-wort.* Paſtures and waſte places, in a gravelly ſoil.

Turritis hirſuta. *Hairy Tower-wort* or *Wall Creſs.* Dry mountainous paſtures.

TUSSILAGO FARFARA. *Common Colt's-foot.* Paſtures and other places in moiſt ſtiff clayey ſoil, and on limeſtone rubbiſh; flowering in march and april. It indicates a ſubſoil that holds wet.

TUSSILAGO PETASITES. *Butter bur* or *Peſtilent-wort.* Moiſt meadows, and banks of ſtreams. Theſe both flower in march, before the leaves appear.

VALERIANA DIOICA. *Marſh Valerian.* Wet meadows and by the ſides of ditches and ſtreams.

VALERIANA OFFICINALIS. *True Valerian.* A large variety in hedges and woods. The ſmaller, which is in ſo much repute as a medicine, is found on dry heaths and high paſtures, particularly in a calcareous ſoil. The root is excellent in hyſterical caſes and even in epilepſies, and in habitual coſtiveneſs. Cats are well know to be very fond of it; and it is ſaid that rat-catchers employ it to draw the rats together. Roots from a garden, or from woods and hedges are good for nothing.

VALERIANA LOCUSTÆ. *Lamb's Lettuce* or *Corn-ſalad.* Not only in corn-fields, but on banks, and ſometimes in paſtures. The young leaves are eaten in ſalads.

VERONICA OFFICINALIS. *Common* or *Male Speedwell* or *Fluellin.* Dry barren paſtures, heaths and downs; flowering from may to auguſt.

Veronica ſerpyllifolia. *Smooth Speedwell* or *Paul's Betony.* A little plant not uncommon in paſtures.

Veronica Chamædrys. *Wild Germander* or *Germander Speedwell, Bird's-eye.* Paſtures, but moſtly in hedges and among buſhes. A very elegant blue flower. The leaves are a better ſubſtitute for tea than V. officinalis. It flowers in may.

VETCH. See *Vicia.*

VICIA CRACCA. *Tufted Vetch.* In hedges, ſhady places, meadows and willow beds; flowering in july and auguſt. Perennial. Flowers ſmall, numerous, blueiſh purple, with two deeper purple ſpots at the extremity of the keel; on a long fruitſtalk.

VICIA SATIVA. *Common Vetch, Fetch*, or *Tare.* Dry paſtures; flowering from april to june. Annual. Commonly cultivated. Winter and ſpring Tares only varieties.

VICIA SEPIUM. *Buſh Vetch.* Woods, hedges and paſtures; flowering in may and june. Perennial. Flowers three or four together, dirty purple, on very ſhort ſtalks.

VICIA LATHYROIDES. *Strangle Vetch* or *Tare.* Dry paſtures, gravel-pits and corn-fields; flowering in may. Annual. The tendrils are ſeldom or ever branched; the corolla is ſcarcely longer than the calyx, ſmall and of a bluiſh purple, and the ſeeds are cubic.

WILD WILLIAMS. See *Lychnis.*

WILD WOAD. See *Reſeda.*

YARROW. See *Achillea.*

The above liſt might eaſily have been increaſed, by the inſertion of ſome plants occaſionally found among Graſs, or of others that are rare; but that is not the deſign of it. Some perſons will probably think that many, which are rather hedge-plants, might have been omitted; but they form a part of the produce of the Paſture ground, and are apt to find their way into the Graſs itſelf.

Of the 228 plants, or thereabouts recited above, the following are uſeful as food or medicine for quadrupeds. Cardamine pratenſis, Rumex Acetoſa, Tragopogon, and moſt of the leguminous plants, as Lotus, the Vetches in general, the Medicagos, and the Trifoliums, or Trefoils properly ſo called. Milfoil, Sucory, and Ribwort, which are weeds in their wild ſtate, are ſo much improved by cultivation as to become uſeful plants. Many in the liſt, perhaps moſt of them, are beneficial in ſome reſpect or other, though not immediately to cattle. Some of their uſes are pointed out in the remarks.

The Paſture herbs chiefly injurious are Allium vineale and urſinum. Anemone nemoroſa. Bellis perennis or Daiſy, in occupying much room. Caltha paluſtris. The different ſpecies of Thiſtle. The various ſpecies of Carex or Sedge. Centaurea nigra or Knobweed, and Calcitrapa or Star-Thiſtle, Chærophyllum or Cow-weed. Chryſanthemum Leucanthemum or Ox-eye Daiſy. Colchicum or Meadow Saffron. Heath. Heracleum Sphondylium or Cow-Parſnep, which however might be a very uſeful plant if cultivated. Inula dyſenterica. The Ruſhes. Mercurialis perennis or Dog's Mercury. Pedicularis or Red Rattle. Pteris, female Fern or Brakes. Several ſorts of Ranunculus. Rhinanthus Criſta galli, or Yellow Rattle; almoſt the only annual plant that keeps its ground in Paſtures to any great extent; which it does by ſeeding early. It can only be kept down by paſturing the ground wo years ſucceſſively. Other annuals, ſuch as Purging Flax, the Eye-brights, ſome of the Hawkweeds, and Sheep's-Scabious, being of little conſequence. The Docks. Senecio Jacobæa or Ragwort. The other plants in the liſt may be conſidered as in great meaſure neutral, or as doing little harm or good as Paſture herbs.

With reſpect to the extirpation of the moſt noxious of theſe weeds, the Docking-iron, the Spud, and the Hand

Hand ſhould be unremittingly employed on fit occaſions.

The biennial Thiſtles may be cut off within the ground, and if not ſuffered to ſeed may eaſily be deſtroyed; unleſs they are reinſtated from the nurſeries in hedge-rows, way-ſides, &c.

Carduus acaulis. Stemleſs or dwarf Carline Thiſtle ought to be diligently cut up with the ſpud: but it infeſts only dry upland Paſtures.

Way-Thiſtle, or as ſome in anger call it, Curſed Thiſtle, (Serratula arvenſis) is a true perennial, and runs dreadfully at the root; thus increaſing two ways, by root and ſeed. It is rather an arable weed, and is attempted in vain to be extirpated by ploughing three inches deep. But it is alſo too common on rich paſtures, in the neighbourhood of arable lands, headlands and way-ſides, where it is ſuffered to ſeed without controul.

In mowing grounds it is ſeldom ſuffered to ſeed, but I believe mowing contributes to ſpread it, though I know it is the opinion of ſome that this operation will in time deſtroy it, at leaſt if it be cut down whilſt in flower. This is contrary to my preſent experience, which I mean to purſue farther. The only radical cure for the evil in paſtures, is to extricate the plants by the docking-iron and the hand after rain, when alone they will pull out, and even then ſeldom completely. The ground therefore muſt be looked over carefully a ſecond time, to take out thoſe Thiſtles which have ſprung up from pieces of roots left in, on the firſt operation.

The Carices or Sedges, the Junci or Ruſhes, Caltha or Marſh Marygold, Iris or Flag, Pedicularis or Red Rattle, the whole tribe of water plants, and ſuch as require a ſoil tenacious of wet, can only be effectually deſtroyed by judicious draining, and dreſſing with coal aſhes, and other warm manures.

Fern or Brakes muſt be extirpated by paring and burning. The Docks, together with Senecio Jacobæa or Ragwort, and Centaurea Jacea or Knobweed, will yield only to the docking-iron and the hand, and ſhould never be ſuffered to ſeed: notwithſtanding it is a notion, as Mr. Marſhall informs us, in ſome of the midland counties, that the beſt way to get rid of Docks on Graſs land is to let them ſpend themſelves by ſeeding. If the old plant be thus ſpent, it leaves an innumerable progeny to repreſent it. Mr. Marſhall ſays that Knobweed and Ragwort may both be cured by repeatedly paſturing with ſheep.

Improvement of Paſture Land.

1. By Draining and Watering; for both which ſee MEADOWS.

2. By Weeding and Top-dreſſing.

3. By laying the land ſo as to clear itſelf of ſurface water, levelling ant-hills and other inequalities, and running a heavy roller over it in the ſpring.

4. By putting on different ſtock at proper ſeaſons, ſo that the herbage may be kept fine by being cloſe bitten, and the ſurface regular by not being poached in wet times by heavy cattle[9].

Not a weed, ſays Mr. Marſhall, ought to ſeed, nor a tuft of ſtale graſs be ſuffered to ſtand in a Paſture ground; which ſhould at leaſt once during the ſummer be levelled with the ſcythe; thus at a ſmall expenſe, converting weeds into nutriment, and waſte ground into after-graſs. See GRASS and MEADOWS.

PATAGONICA and PATAGONULA. See *Cordia*.

PATIENTIA. See *Rumex*.

PAVEL. See *Momordica*.

PAVETTA. (*A vernacular name of the Eaſt Indies.*)

Lin. gen. n. 132. *Reich. n.* 138. *Schreb. n.* 168. *Gærtn. t.* 25. *Juſſ.* 203.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Stellatæ*. *Rubiaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* bell-ſhaped, very ſmall, obſoletely four-toothed, ſurrounding the germ.

COR. one-petalled, funnel-form: *tube* long, ſlender, cylindric: *border* five-parted, ſpreading, ſhorter by half than the tube: *ſegments* lanceolate.

STAM. *Filaments* four, very ſhort, above the throat of the corolla. *Anthers* awl-ſhaped, ſpreading, the length of the border.

PIST. *Germ* inferior, turbinate. *Style* filiform, twice as long as the corolla. *Stigma* thickiſh, oblong, oblique.

PER. *Berry* roundiſh, one-celled.

SEEDS two, convex on one ſide, cartilaginous.

OBS. *Berry two-celled. Seeds ſolitary, one often abortive, ſo that the fruit ſeems to be one-ſeeded. There are frequently two coadunate berries, crowned with a double calyx.* Gærtn.

ESSENTIAL CHARACTER.

Cor. one-petalled, funnel-form, ſuperior. *Stigma* curved. *Berry* two-ſeeded; (one often abortive.)

SPECIES.

1. Pavetta indica.
   Lin. ſpec. 160. *Jacq.* 153. *Reich.* 312. *Willd.* 610. *ſuppl.* 121. *fl. zeyl. n.* 56. *amœn.* 1. 388. *Gærtn. fruct.* 1. 116. *Burm. ind.* 35. *t.* 13. *f.* 3. *Plum. phyt. t.* 147. *f.* 1.—alba. *Vahl ſymb.* 3. 11.
   Pavetta ſ. Malleamothe. *Rheed. mal.* 5. 19. *t.* 10.
   Pavate. *Raii hiſt.* 1581.
   Flammula ſylvarum. *Rumph. amb.* 4. 107. *t.* 47.
   Arbor malabarienſium fructu lentiſci. *Baub. pin.* 399.
   Smooth: leaves lanceolate-elliptic, ſtipules ſmooth within, calyxes obſoletely four-toothed, flowers in bundles.
2. Pavetta villoſa.
   Lin. ſpec. Willd. 611. *Vahl ſymb.* 3. 12.
   Branches and calyxes villoſe hoary, leaves lanceolate-elliptic, flowers in bundles.
3. Pavetta longiflora.
   Lin. ſpec. Willd. 611. *Vahl ſymb.* 3. 12.
   Ixora occidentalis. *Forſk. arab.* 105.
   Branches ſmooth, leaves lanceolate-elliptic, ſtipules hairy within, calyxes four-cleft, flowers in bundles.
4. Pavetta caffra.
   Lin. ſpec. 153. *Willd.* 611. *ſuppl.* 121. *Thunb. prodr. cap.* 29.
   Crinita capenſis. *Houtt. ſyſt.* 5. 357. *t.* 40. *f.* 1.
   Leaves obovate, flowers ſubumbellate, calyxes briſtle-awned.
5. Pavetta pentandra.
   Lin. ſpec. Will. 611. *Swartz deſcr.* 233.
   Pſychotria Pavetta. *Swartz prodr.* 45.
   Ceſtrum nervoſum. *Mill. dict.*
   Lonicera foliis lanceolato-ovatis. *Plum. ic. t.* 156. *f.* 2.
   Ceraſo affinis arbor baccifera, fructu cœruleo teſticulato. *Sloan. jam.* 2. *t.* 202. *f.* 2.
   Jaſminum arboreſcens ſolani fol. baccis nigro-violaceis. *Plum. ic. t.* 156. *f.* 1. *Tourn. inſt.* 598.
   Leaves oblong-lanceolate acuminate, panicle trichotomous axillary, flowers five-ſtamened.
6. Pavetta arenoſa.
   Lour. cochinch. 73.
   Branches brachiate, leaves tubercled oppoſite.
7. Pavetta paraſitica.
   Lour. cochinch. 73.
   Stem paraſitical, leaves in whorls, flowers in little axillary balls.

DESCRIPTIONS, &c.

1. Corymbs trichotomous, faſtigiate, on a long filiform peduncle. Stigma oblong, bifid[8]. Berry inferior, fleſhy, ſubglobular or ſubturbinate, ſimple or twin, crowned with the minute whitiſh calyx, two-celled, by age becoming black: pulp thin, wholly fungoſe in the old fruit, adhering cloſe to the ſeeds; of which there is one in each cell, ſubglobular, convex on one ſide, flattiſh on the other, with a longitudinal cleft, and within this having a very wide cavity, ſmooth, black; albumen cartilaginous[9].

Native of the Eaſt Indies.—Gærtner ſuſpects that the natural number of flowers is two together, as in ſome ſpecies of Lonicera.

2. Branches oppoſite, four-cornered, jointed, denſely villoſe, hoary; the laſt joints more compreſſed. Leaves on ſhort petioles, oppoſite, two or three inches in length, acuminate, attenuated at the baſe, quite entire, the younger ones villoſe on both ſides, hoary; the older almoſt ſmooth above, nerved, veinleſs. Stipule

[9] Agricult. report for Staffordſhire.

[8] Linn.

[9] Gærtner.

oblong.

oblong, blunt, almoſt the length of the petiole, opening on one ſide. Calyx hoary. Corolla ſmooth, four times as long as the calyx. Style thickened towards the top.

3. The ſtipulation, ſtigma and fruit are thoſe of *Pavetta*. It may be doubted whether it is any thing more than a variety of the preceding. The branches and leaves are quite ſmooth; the calyx has a few ſmall hairs ſcattered over it, not viſible without a magnifier. Corolla an inch and half in diameter, in other reſpects like the former. It differs from the firſt ſpecies in having the ſtipules hairy on the inner ſide; the flowers twice as large, the calyxes four-cleft, not obſcurely four-toothed.—Theſe were both found in Arabia Felix by Forſkahl[1].

4. This is a ſmooth tree with round branches. Leaves oppoſite, petioled, veined. Head of flowers ſeſſile, terminating the ſhorter branchlets. Receptacle hairy. Flowers ſuperior. Calyx four-leaved; leaflets awl-ſhaped, ſpreading. Tube of the corolla ſcarcely longer than the calyx: border four-parted, regular; ſegments lanceolate. Berry two-ſeeded. Seeds oblong, convex on the outer, flat on the inner ſide. Flowers in the dried plant black.—Native of the Cape of Good Hope[2].

5. This is a ſhrub, with a ſtem the height of a man, upright, branched, even. Branches ſtiff, round, ſmooth. Leaves petioled, oppoſite, acuminate, entire, nerved, ſmooth only a little wrinkled, thin. Petioles of a middling length, round, ſmooth. Stipules ſmall, membranaceous, interpetiolary, two-toothed on each ſide. Corymb terminating, on a ſhorter common peduncle; the branches brachiate, trichotomous, ſpreading, round, ſmooth; pedicels one-flowered. Flowers white, very ſweet-ſcented. Perianth with five awl-ſhaped teeth. Tube of the corolla near an inch long, ſeldom curved: throat naked. Filaments five, filiform, from the middle of the tube. Anthers linear, in the throat. Germ oblong. Style longer than the corolla. Stigmas two, pubeſcent. Seeds roundiſh-dicoccous, the ſize of a pea, crowned, two-celled, black when ripe. Seeds ſolitary, hemiſpherical, flat within, grooved. It flowers in the ſpring; and is commonly called in Jamaica *Wild Coffee*. It is as it were a middle ſpecies between *Pſychotria*, *Coffea*, and *Pavetta*, which are very nearly allied: but it ſeems to approach neareſt to the laſt in its inflorescence, and the form of the flowers, although they have five ſtamens. *Siderexyloides ferreum* of Jacquin, *amer.* 19. which is *Sideredendrum*, *Schreb. gen. n.* 169. is allied to this.—Native of the Weſt Indies[3]. See Mr. Miller's deſcription in *Ceſtrum nervoſum*.

6. This alſo is a ſhrub, unarmed, upright, four feet high, with many brachiate reclining branches. Leaves lanceolate, quite entire, ſhining, with many prominent tubercles on each ſide, which make them appear as if they had ſand ſprinkled on them; whence it is called in Chineſe the *Sand plant*. Flowers white, terminating, faſtigiate; with a berried five-toothed calyx. Corolla ſalver-ſhaped, with a long tube, and a five-cleft border. Filaments ſcarcely any. Anthers four, linear, ſtanding out at the mouth of the tube. Berry ſmall, ovate, inferior, containing one ovate-oblong ſeed.—Native of China, near Canton.

7. Stem perennial, woody, a foot high, very much branched. Leaves ovate, tomentoſe, quite entire. Flowers duſky-yellow, ſmall, villoſe. Calyx oblong, four-cornered, truncated, villoſe; ſupported by an oblong reflex ſcale. Corolla ſalver-ſhaped, with a long tube, and a ſmall four-cleft border; ſegments oblong, bent in. Filaments four, growing to the mouth of the tube, ſhorter than the border. Germ calycine, oblong. Style equal to the corolla. Berry ſmall, ovate-oblong, with one ovate ſeed.—Frequent on trees in the gardens of Cochinchina[4].

To avoid confuſion, Loureiro would place ſuch of theſe plants as have a one-ſeeded berry in this genus; ſuch as have a two-ſeeded berry in that of *Ixora*; and thoſe which have a one-celled two-ſeeded berry in a new genus which he names *Pohyozus*.

[1] Vahl. [2] Linn. ſuppl. [3] Swartz. [4] Loureiro.

PAVETTA. See *Coffea* and *Ixora*.

PAVIA. See *Æſculus*.]

PAULLINIA. (*So named by Linnæus, from Simon Paulli, Profeſſor of Botany at Copenhagen; author of* Botanicum quadripartitum, 1640; *and* Flora Danica, 1648.)

Lin. gen. n. 497. *Reich. n.* 539. *Schreb. n.* 679. *Jacqu. amer.* 110. *Gærtn. t.* 79. *Juſſ.* 247. Seriania. *Plum.* 35. Cururu. *Plum.* 35.

Claſſ. 8. 3. Octandria Trigynia.

Nat. order of *Tribilatæ*. *Sapindi*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* ovate, concave, ſpreading, permanent; the two outer oppoſite, one of the inner larger.

COR. *Petals* four, obovate, oblong, twice as large as the calyx, clawed: two more diſtant.

Nectaries two: one four-petalled inſerted into the claws of the corolla; the other four glands at the baſe of the petals.

STAM. *Filaments* eight, ſimple, ſhort, united at the baſe. *Anthers* ſmall.

PIST. *Germ* turbinate, three-ſided, blunt. *Styles* three, filiform, ſhort. *Stigmas* ſimple, ſpreading.

PER. *Capſule* large, three-ſided, three-celled, three-valved.

SEEDS ſolitary, obovate.

OBS. Seriania, *Plum. has a large, three-ſided, three-celled, three-valved capſule.* Cururu, *Plum. has three capſules, joined in the middle but ſeparable, bearing the ſeeds at top, winged below.* Sw.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Pet.* four. *Nect.* four-leaved unequal. *Capſ.* three, compreſſed, membranaceous, connate.

SPECIES.

[1. Paullinia aſiatica. *Aſiatic Paullinia.*
Lin. ſpec. 524. *ſyſt.* 379. *Reich.* 2. 216. *fl. zeyl. n.* 143. *Jacqu. obſ.* 3. 11. *t.* 62. *f.* 1. *Pluk. phyt. t.* 95. *f.* 5.
Scopolia aculeata. *Smith, ic. ined.* 2. 34.
Crauzia aculeata. *Diſt. noſtr.*
Chamælæa triſolia aculeata. *Burm. zeyl.* 58. *t.* 24.
Kaka-toddali. *Rheed. mal.* 5. 81. *t.* 41.
Frutex baccifer indicus ſpinoſus, &c. *Raii hiſt.* 1612.
Leaves ternate, petioles and ſtem prickly.]

2. Paullinia Seriana.
Lin. ſpec. 524. *ſyſt.* 379. *Reich.* 2. 217. *hort. cliff.* 152. *Jacqu. obſ.* 3. 11. *t.* 61. *f.* 2. *Gærtn. fruct.* 1. 381.
Seriana ſcandens triphylla & racemoſa. *Plum. gen.* 34. *ic.* 113. *f.* 2.
Leaves ternate, petioles naked, leaflets ovate-oblong.

[3. Paullinia nodoſa.
Lin. ſyſt. 379. *Reich.* 2. 217. *Jacqu. obſ.* 3. 11. *t.* 62. *f.* 3.
Leaves ternate, petioles naked, middle leaflet obovate.]

4. Paullinia Cururu.
Lin. ſpec. 524. *ſyſt.* 380. *Reich.* 2. 217. *hort. cliff.* 151. *Jacqu. obſ.* 3. 11. *t.* 61. *f.* 4.
Cururu ſcandens triphylla. *Plum. gen.* 34. *ic.* 111. *f.* 2.
Leaves ternate, petioles margined.

5. Paullinia mexicana. *Mexican Paullinia.*
Lin. ſpec. 525. *ſyſt.* 380. *Reich.* 2. 217. *hort. cliff.* 152. *Jacqu. obſ.* 3. 11. *t.* 61. *f.* 5.
Seriana ſcandens enneaphylla & racemoſa. *Plum. gen.* 34. *ic.* 113. *f.* 1.
Quauhmeati. *Herm. mex.* 289.
Leaves biternate, all the petioles margined, ſtem prickly.

[6. Paullinia carthaginenſis. *Carthaginian Paullinia.*
Lin. ſyſt. 380. *Reich.* 2. 218. *Jacqu. obſ.* 3. 11. *t.* 62. *f.* 6.
Leaves biternate, all the petioles margined, ſtem unarmed.

7. Paullinia caribæa. *Caribean Paullinia.*
Lin. ſyſt. 380. *Reich.* 2. 218. *Jacqu. obſ.* 3. 11. *t.* 62. *f.* 7.
Leaves biternate, all the petiolets margined, branches prickly.]

8. Paullinia curaſſavica. *Shining-leaved Paullinia.*
Lin. ſpec. 525. *ſyſt.* 380. *Reich.* 2. 218. *hort. cliff.* 152. *Jacqu. obſ.* 3. 12. *t.* 61. *f.* 8. *Brown. jam.* 212. *Pluk. phyt. t.* 168. *f.* 6.
Cururu ſcandens enneaphylla, fructu racemoſo rubro. *Plum. gen.* 34. *ic.* 111. *f.* 1.
Leaves biternate, all the petiolets margined, branches unarmed.

[9. Paullinia barbadenſis. *Barbadoes Paullinia.*
Lin. ſyſt. 380. *Reich.* 2. 218. *Jacqu. obſ.* 2. 12. *t* 62. *f.* 9.
Leaves biternate, middle petiole margined, the reſt naked.

10. Paullinia divaricata.
Swartz prodr. 64.
Leaves biternate, leaflets ovate acute moſtly entire, petioles naked, panicles divaricating, wings of the capſules ovate.

11. Paullinia polyphylla. *Parſley-leaved Paullinia* or *Supple Jack.*
Lin. ſpec. 525. *ſyſt.* 380. *Reich.* 2. 218. *hort. cliff.* 152. *Jacqu. obſ.* 3. 12. *t.* 61. *f.* 10. *Fabric. helmſt.* 235. *Pluk. phyt. t.* 168. *f.* 5.
Seriana fruteſcens polyphylla & racemoſa. *Plum. gen.* 34. *ic.* 112.
Leaves triternate, petiolets naked.

12. Paullinia triternata.
Lin. ſyſt. 380. *Reich.* 2. 219. *Jacqu. obſ.* 3. 12. *t.* 62. *f.* 11. *amer.* 110. *t.* 180. *f.* 32. *pict.* 56. *t.* 260. *f.* 29.
Leaves triternate, petiolets margined.

13. Paullinia japonica. *Japoneſe Paullinia.*
Lin. ſyſt. 380. *Thunb. jap.* 170.
Leaves quinate-pinnate petioletted margined, ſtem herbaceous unarmed.

14. Paullinia Veſpertilio.
Swartz prodr. 64.
Leaves pinnate, leaflets ovate acuminate gaſhed, petioles naked, capſules pedicelled, with horizontal lanceolate wings.]

15. Paullinia pinnata. *Winged-leaved Paullinia.*
Lin. ſpec. 525. *ſyſt.* 380. *Reich.* 2. 219. *hort. cliff.* 152. *Jacqu. obſ.* 3. 12. *t.* 62. *f.* 12. *Gærtn. fruct.* 1. 382. *Schilling de lepr. t.* 1.
Cururu ſcandens pentaphylla. *Plum. gen.* 34.
Clematis pentaphylla, pediculis alatis, fructu racemoſo tricocco & coccineo. *Plum. amer.* 76. *t.* 91.
Cururu-ape. *Maregr. braſ.* 22. *Piſ. braſ.* 114. *Raii hiſt.* 1347.
Leaves pinnate, petioles margined, leaves ſhining.

16. Paullinia tomentoſa. *Downy-leaved Paullinia.*
Lin. ſyſt. 380. *Reich.* 2. 219. *Jacqu. obſ.* 1. 19. *t.* 10. *obſ.* 3. *t.* 61. *f.* 13. *amer.* 37.
Leaves pinnate, petioles margined, leaflets tomentoſe.

[17. Paullinia diverſifolia. *Different-leaved Paullinia.*
Lin. ſyſt. 380. *Reich.* 2. 219. *Jacqu. obſ.* 3. 12. *t.* 62. *f.* 14.
Leaves ſuperdecompound, petioles margined, the loweſt pinnate, the reſt ternate.

DESCRIPTIONS, *&c.*

Theſe are climbing ſhrubs, throwing out long ſhoots annually like the Vine. Leaves ternate (1 to 4), biternate (5 to 10), triternate (11, 12), unequally pinnate (13 to 16), or ſuperdecompound (17). Peduncles ſolitary, axillary, having two tendrils in the middle, and beyond many-flowered in racemes[r]. The chief of what we know on this genus is derived from Jacquin and Plumier.

1. Stem round, covered with prickles. Leaves alternate, on a long ſtout petiole, on which alſo is ſometimes a prickle; leaflets oval-lanceolate, entire, ſmooth, bright green above, paler and almoſt aſh-coloured underneath. Peduncles very long and ſtout, prickly. Fruit commonly tricoccous, but ſometimes quadricoccous and even pentacoccous, ſaffron-coloured with black ſpots, of an acrid taſte with ſome ſweetneſs. Seed kidney-form, gray or aſh-coloured[s]. Flowers white, ſmelling ſtrongly[t].

Native of the Eaſt Indies.—See CRANZIA and SCOPOLIA.

2. The leaflets are often on ſhort petioles and not ſo much ſituated as in Plumier's figure. The common petiole is ſometimes three inches long[u].

Capſule ovate, three-winged: valves navicular, coriaceous, ſtriate-veined, ſomewhat tawny; partitions growing to the axis and correſponding with the ſutures of the valves. Seeds three-cornered-globular, ſmooth, ſhining, black; with a fungoſe umbilical ſcar, cordate two-lobed, cloſely adnate, white, clothed at the baſe. The receptacle is a white fungoſe tubercle, growing to the axis of the fruit, a little above the baſe of each cell[x].—Native of South America.

3, 4. Natives of South America.

5. Native of Mexico.

6. This has the leaves more cut than the other ſpecies; and they are very thin, whereas in the reſt they are more or leſs coriaceous and thick. It is entirely void of prickles[y].

Found by Plumier; and afterwards by Jacquin about Carthagena in New Spain, in coppices.

7. The branches and common petioles are armed with numerous recurved prickles. Leaflets ſubovate with very few inciſures.—Native of the Caribees[z].

8. Jacquin remarks that in Plumier's figure the petioles appear to be naked, they are all, however, except the common one margined, or winged at the edge, but ſo ſlightly, that it can hardly be expreſſed in a figure.—Native of Curaſſao.

According to Swartz, this is the *Paullinia* or *Souple Jack* of Browne, which he ſays is very common in the woods of Jamaica, with its ſlender, woody, flexile ſtalk, raiſing itſelf frequently to a very conſiderable height among the buſhes: it is ſo tough and yielding, that it is commonly cut into junks, barked and uſed for riding and walking ſticks. See *Paullinia polyphylla*. It was cultivated in 1739, by Mr. Miller[a].

9. This differs from the preceding principally in the form of the leaves, and in the ſlighter and leſs frequent inciſion of them[b].—Native of the Weſt Indies. Introduced in 1786, by Mr. Alexander Anderſon[b].

10. Native of Jamaica[c].

11. Native of the Weſt Indies. Cultivated in 1739 by Mr. Miller[b]: but not mentioned in the Dictionary.

According to the Kew catalogue, this is the *Supple-Jack*: and if Browne, by *foliis ternato-ternatis* means triternate leaves, his *Paullinia* is this ſpecies, and not *curaſſavica*, the leaves of which are biternate. His ſynonyms are confuſed.

12. This climbs trees to the height of twenty feet. Branches round, ſmooth, grooved, long, flexible. Leaves ſhining, alternate, numerous: ribs naked, channelled; leaflets acute, ſeſſile, unequally ſerrate-toothed above the middle; the lateral ones roundiſh, the outmoſt double the ſize, very much attenuated at the baſe; the proper petioles of each ternate leaf winged. Racemes axillary, four inches long, having about fifty flowers in them, naked for about two inches, and then divided into three parts, and putting out two tendrils, two inches long, ſmooth and flat. Common peduncles two lines long and alternate, putting forth ſmall flowers on very ſhort peduncles, uſually four in number. Calyx dirty white; corolla white; leaves of the firſt nectary white with yellow tips, at firſt ſight reſembling ſtamens.—Native of the iſland of St. Domingo, in woods[d].

13. Stem herbaceous, angular, climbing, ſmooth, ſcarcely the thickneſs of a ſtraw. Leaves alternate, ſmooth: lower leaflets ovate, ſubſeſſile, bifid or trifid, the inciſures entire, an inch long; middle leaflets ternate with a margined petiolet, lateral pinnas ovate, entire or cut, the middle one trifid; end leaflet pinnate, with a jointed, margined petiolet; pinnas two-paired, oblong, gaſh-trifid or quinquefid, the laſt trifid and larger. Petioles like the ſtem, two inches long. Flowers oppoſite to the leaves, panicled. Peduncles the

[r] Juſſieu. [s] Burm. [t] Hort. malab. [u] Jacquin. [x] Gærtner. [y] Jacquin. [z] Idem. [a] Hort. kew. [b] Jacquin. [c] Hort. kew. 3. 491. [d] Swartz. [e] Hort. kew. [f] Jacqu. amer.

length

length of the leaves; pedicels very short.—Native of Japan [a].

14. Native of the West Indies [a].

15. Leaflets oblong-ovate, deeply and remotely serrate [a]. Capsule obovate, coriaceous and almost woody, very finely striated, of a dusky ferruginous colour: partitions membranaceous, very thin, growing to the axis; corresponding, not with the sutures, but with the middle of the valves. Receptacle fungose, above the base of the axis, as in *P. Seriana*. Seed ovate-oblong, smooth, shining, black. Umbilical scar fungose, white, very closely adnate, two-lobed, covering both sides of the seed beyond the middle [b].—Native of Brasil, Jamaica and Domingo, in dry sandy places.

The insertion of the seeds is the same in *Cururu* as in *Seriana*; but there is a remarkable difference between them in the situation of the partitions [b].

16. Common petioles margined, but not between the lower leaflets [a]. Calyxes tomentose, glaucous-brown, permanent.—Native of South America.

17. Native of South America [a].

PROPAGATION AND CULTURE.

Procure the seeds from the countries where they naturally grow. As soon as they arrive sow them in small pots filled with light earth, and plunge them into a moderate tan-bed. If the seeds arrive in autumn, plunge the pots in the bark-bed in the stove, and probably the plants may come up the following spring: but if they arrive in spring, plunge the pots into a moderate hot-bed under a frame, where they may be continued all the summer; in autumn remove them into the stove for the winter, watering them now and then sparingly. The following spring plunge the pots into a new hot-bed under a frame, which will bring up the plants in about six weeks, if the seeds are good. When the plants are fit to remove, plant each in a small pot filled with light earth, and plunge them into a hot-bed of tanner's bark, observing to shade them till they have taken new root; after which they should have free air admitted to them daily, in proportion to the warmth of the season. In the autumn they must be removed into the bark-stove, where they must constantly remain. As they require much room, and their flowers have little beauty, they are seldom propagated in Europe.

[PAULLINIA. See *Gouania*.

PAUL'S BETONY. See *Veronica*.

PAVONIA. See *Hibiscus*.

PEA. See *Pisum*.

—— Everlasting. See *Lathyrus*.

—— Heart. See *Cardiospermum*.

—— Pigeon. See *Cytisus*.

—— Sweet. See *Lathyrus*.

—— Wing. See *Lotus*.]

PEACH TREE. See *Amygdalus*.

[PEARL-WORT. See *Sagina*.]

PEAR TREE. See *Pyrus*.

[PECTEN VENERIS. See *Scandix*.

PECTIS. (πηκτὸς, pexus, comptus, tonsus; *from* πήσσω, πήγνυμι or πήκω, pecto, carpo.)

Lin. gen. n. 963. *Reich. n.* 1047. *Schreb. n.* 1306. *Gærtn. t.* 171. *Juss.* 182.

Class. 19. 2. Syngenesia Polygamia Superflua.

Nat. order of *Compositæ Oppositifoliæ. Corymbiferæ*, Juss.

GENERIC CHARACTER.

CAL. *Common* five-leaved, cylindric: *leaflets* lanceolate, blunt, almost equal.

COR. *Compound* rayed. *Corollets* hermaphrodite, about six, (about four, *G.*) in the disk. *Females* five in the ray; (about six, *G.*)

Proper of the Hermaphrodite funnel-form, five-cleft: of the Female, ligulate ovate, (quite entire, *G.*) shorter than the calyx.

STAM. in the Hermaphrodites: *Filaments* five, short. *Anther* cylindric tubular.

PIST. in the Hermaphrodites: *Germ* linear. *Style* filiform. *Stigma* bifid:—in the Females: *Germ* linear. *Style* filiform. *Stigmas* two, revolute.

PER. none. *Calyx* unchanged, spreading.

SEEDS, in the Hermaphrodites solitary, linear. *Down* with two or three spreading awns: in the Females very like the other.

REC. naked.

ESSENTIAL CHARACTER.

Cal. five-leaved, cylindric. *Florets* in the ray five. *Down* awned. *Recept.* naked.

SPECIES.

1. Pectis ciliaris.
   Lin. spec. 1250. *Jusl.* 771. *Reich.* 3. 843. *amœn.* 5. 407. *Swartz obs.* 307.
   Jacobæa foliis saliceis ad margines villosis. *Plum. spec.* 10. *ic.* 151. *f.* 2.
   Leaves linear ciliate.
2. Pectis punctata.
   Lin. spec 1250. *Jusl.* 771. *Reich.* 3. 843. *Swartz obs.* 308. *Jacqu. amer.* 216. *t.* 128. *pict.* 106. *t.* 196.
   Chondrilla foliis angustis & ad oras punctatis. *Plum. spec.* 10. *ic.* 86. *f.* 1.
   Leaves linear quite entire dotted underneath.
3. Pectis linifolia.
   Lin. spec. 1250. *Jusl.* 771. *Reich.* 3. 843. *amœn.* 5. 407. *Gærtn. fruct.* 2. 455.
   Tagetes minor, caule subdiviso diffuso, foliis linearibus integris. *Brown. jam.* 319.
   Hieracium fruticosum, &c. *Sloan. jam.* 1. 255. *t.* 149. *f.* 3.
   Rapunculus jamaicensis, folio tenuissimo. *Petiv.*
   Leaves linear quite entire even on both sides.
4. Pectis humifusa.
   Swartz prodr. 114.
   Jacobæa humifusa hyperici folio. *Plum. cat.* 10. *ic.* 84. *t.* 95. *f.* 2.
   Leaves ovate dotted underneath, ciliate on both sides at the base, stems procumbent.

DESCRIPTIONS, &c.

These are annual plants, natives of the West Indies. Leaves opposite entire, often linear and dotted.

1. Root branched, with filiform radicles. Stem herbaceous, half a foot high, branched, dichotomous, diffused, round, smooth. Branchlets scattered, diffused, round, spreading, red. Leaves sessile, half embracing at the base, linear, acuminate; tooth-ciliate at the base, perforated at the edge, membranaceous-serrate when examined with a glass, nerveless, smooth. Pores pellucid. Peduncles terminating, or in the division of the branchlets, erect, solitary, filiform, one-flowered. Flowers small, yellow. Common calyx five-grooved, five-cornered, five-toothed: leaflets erect, concave, acute, converging. In the disk five-toothed corollets: those of the ray lanceolate, acute, spreading. Seeds striated, black; those of the disk with five, those of the ray with two bristles. Down none, but a membranaceous jagged rim. The leaves, when bruised, have a sweet smell, like Savoury.—Native of Hispaniola: flowering there in june.

2. Stem herbaceous, a foot high and more, angular, branched, smooth. Branches opposite, erect, axillary. Leaves erect, acute, long, almost entire, somewhat convex at the edge, having a few red ciliary hairs at the base; dotted with pellucid pores. Peduncles terminating, erect, solitary, one-flowered. Common calyx four-leaved or five-leaved: leaflets converging, linear, erect. Corollets of the disk four or five, with a four or five-cleft border. Style bifid at top. Stigmas blunt. Corollets in the ray four or five, three-toothed at top: style bifid to the middle. Stigmas reflex. Seeds linear, striated; with a three-bristled subulate down.—Native of Hispaniola, on sandy coasts [b].

Jacquin describes it as a tender upright plant, from two to three feet in height, with smooth striated dichotomous branches. Leaves attenuated to both ends, acuminate, quite entire, smooth above, dotted at the back, subsessile, an inch and half long. Peduncles almost the length of the leaves, at the divisions of the stalks, and sometimes axillary. Flowers small, dirty yellow, inodorous.—Every where about Carthagena in

[a] Thunberg. [b] Swartz. [c] Linn. [d] Gærtner. [e] Idem. [f] Linn. [g] Jacqu. obs. [h] Swartz.

New

New Spain, on the borders of woods; flowering in ſeptember and october.

3. Common calyx of five, ſix or ſeven narrow equal ſcales, joined together into a cylindric tube, containing ſo many female ligulate florets, diſpoſed very orderly round the margin; and a few hermaphrodites in the centre. The plant is ſpreading and ſlender, and ſeldom riſes above eighteen or twenty inches in height[a]. Receptacle narrow, hollow-dotted. Seeds uniform, a little thicker upwards, compreſſed, ſmooth, blackiſh. Down awned, with ſmooth, briſtly rays, in the ſeeds of the diſk two; in thoſe of the ray three, ſpreading, ſubſtuteſcent, ſhorter by a third part than the ſeed[b].—Native of the Weſt Indies, common in all the ſugar iſlands.

4. Native of Guadaloupe and Santa Cruz[c].

PECTIS. See *Bellium*.

PEDALIUM. (Πηδάλιον, gubernaculum, clavis navis; *the rudder of a ſhip.*)

Lin. gen. n. 794. *Reich. n.* 858. *Schreb. n.* 1067. *Dav. v. Royen. Rotth. in coll. hafn.* 2. 255. *Gærtn. t.* 58. *Juſſ.* 140.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Luridæ*. *Bignoniæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, ſmall, permanent: the upper ſegment very ſhort; the loweſt longer.

COR. one-petalled, ſubringent: *tube* three-cornered, with the belly flat: *border* five-cleft, wide, oblique: *ſegments* rounded; upper ones ſmaller, loweſt wider.

STAM. *Filaments* four, glandular-hairy at the baſe, ſhorter than the tube: two ſhorter than the other two. *Anthers* cordate, twin, terminated by a gland. *Rudiment* of a fifth filament between the ſhorter ſtamens, with a very ſmall anther. *Rotth.*

PIST. *Germ* conical. *Style* the length of the ſtamens. *Stigma* biſid: the upper ſegment reflex, the lower revolute. *Rotth.*

PER. *Drupe* juiceleſs, ovate-pyramidal, four-cornered, the corners thorny towards the baſe.

SEED. *Nut* covered with bony fibres variouſly interwoven, four-winged, two-celled. Nucleuſes two, oblong, covered with an aril; one lower. There is a void cell, below the fertile ones. *G.*

ESSENTIAL CHARACTER.

Cal. five-parted. *Cor.* ſubringent, with a five-cleft border. *Nut* ſuberous, four-cornered, thorny at the corners, two-celled. *Seeds* two.

SPECIES.

1. Pedalium Murex. *Prickly-fruited Pedalium.*
Lin. ſpec. 892. *Juſſ.* 580. *Reich.* 3. 203. *Gærtn. fruct.* 1. 276.
Murex. *Lin. zeyl. n.* 440. *Burm. ind.* 139. *t.* 45. *f.* 2.
Hyoſcyamus maritimus, fructu tribuli aculeato monoſpermos ſ. diſpermos. *Herm. zeyl.* 42.
Kaku-taly. *Rheed. mal.* 10. *t.* 72.
Kaku-mullu. *Rheed. mal.* 10. 143. *ſec. Burm.*

DESCRIPTION, &c.

Stem ſimple. Leaves oppoſite, obovate, blunt, toothed, truncated, naked, with the petioles glandular on each ſide. Flowers axillary, ſolitary, ſmall. Fruit nodding[a]. According to Juſſieu, it is a trichotomous herb, with oppoſite leaves. (Burman deſcribes them as alternate, but perhaps his is a different ſpecies.) Flowers axillary, ſubſolitary. It has nearly the ſame fruit with *Trapa*; and the habit of *Martynia*. Of the ſame genus with this, or of a genus nearly allied to it is *Planta Euphraſiæ affinis. Pluk. t.* 373. *f.* 2. referred by Linneus to *Torenia*. Leaves alternate; fruit four-cornered, not thorny[a]. Thus more fully deſcribed by Gærtner—Drupe armed at the baſe of the angles with four ſpines, ſpreading out horizontally and pungent; produced at bottom into an inverſely conical peduncle, and lodged in the calyx, which is permanent, of a duſky ruſſet colour. Rind ſuberous-fungous, thin: ſhell bony, four-winged, three-celled; the two upper cells fertile, the lower one barren, ſpurious. Seeds in each cell two, ovate-oblong, attenuated upwards, ſmooth, compreſſed a little, brown, covered with a dry-membranaceous two-valved aril: valves unequal, incumbent, and covering the ſide of the ſeed outwardly, but opening on the belly with a cleft. They are faſtened on each ſide to the partition, and hang down.

This plant, whilſt it is in flower, ſmells very ſtrong of Muſk[b].

Native of the Eaſt Indies. Introduced in 1778, by Sir Joſeph Banks, Bart. It flowers in auguſt and ſeptember; and is an annual plant[c].

PEDICULARIS. (*From its ſuppoſed quality of making ſheep that feed on it louſy.*)

Lin. gen. n. 746. *Reich. n.* 804. *Schreb. n.* 1003. *Tournef. t.* 77. *Juſſ.* 101. *Gærtn. t.* 53.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ*. *Pedicularet*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, roundiſh, ventricoſe; with a five-cleft equal mouth; permanent.

COR. one-petalled, ringent: *tube* oblong, gibbous: *upper lip* galeate, erect, compreſſed, emarginate, narrower: *lower* ſpreading, flat, half-three-cleft, blunt: *middle ſegment* narrower.

STAM. *Filaments* four, the length of the upper lip, under which they lie concealed: two ſhorter. *Anthers* incumbent, roundiſh, compreſſed.

PIST. *Germ* roundiſh. *Style* filiform, in the ſame ſituation with the ſtamens, but longer. *Stigma* blunt, bent in.

PER. *Capſule* roundiſh, mucronate, oblique, two-celled, opening at top: *partition* contrary.

SEEDS ſeveral, ovate, angular. *Receptacle* ſubglobular, in the baſe of the capſule.

OBS. *Capſule oblique at top in moſt ſpecies.* Sceptrum Carolinum Rudb. *has a regular capſule, and a cloſed mouth.*
There are ſpecies that have the mouth of the calyx biſid.

ESSENTIAL CHARACTER.

Cal. five-cleft. *Capſ.* two-celled, mucronate, oblique. *Seeds* coated.

SPECIES.

1. Pedicularis paluſtris. *Marſh Louſe-wort* or *Red Rattle.*
Lin. ſpec. 845. *Juſſ.* 551. *Reich.* 3. 115. *fl. ſuec. n.* 551. *mat. med.* 155. *Hudſ. angl.* 270. *Wither. arr. ed.* 3. 548. *Engl. bot.* 399. *Lightf. ſcot.* 326. *Relh. cant. n.* 459. *Sibth. oxon. n.* 543. *Hall. helv. n.* 320. *Pollich pal. n.* 587. *Gunner. norv. n.* 87. *Scop. carn. n.* 762. *Neck. gallob.* 265. *Rivin. mon. t.* 92. *f.* 1. *Villars dauph.* 2. 421. *Krock. ſilef. n.* 978.
P. paluſtris rubra elatior. *Raii hiſt.* 770. *ſyn.* 284. *Petiv. brit. t.* 36. *f.* 3.
Pedicularis. *Ger.* 913.
Stem branched, calyxes creſted callous-dotted, lip of the corollas oblique.

2. Pedicularis ſylvatica. *Common* or *heath Louſe-wort* or *Red Rattle.*
Lin. ſpec. 845. *Juſſ.* 551. *Reich.* 3. 115. *fl. lapp. n.* 241. *ſuec. n.* 552. *hort. cliff.* 326. *Hudſ. angl.* 271. *Wither. arr. ed.* 3. 548. *Engl. bot.* 400. *Lightf. ſcot.* 327. *Relh. cant. n.* 460. *Sibth. oxon. n.* 549. *Hall. helv. n.* 321. *Neck. gallob.* 266. *Pollich pal. n.* 588. *Fl. dan. t.* 225. *Villars dauph.* 2. 422. *Krock. ſilef. n.* 979.
P. pratenſis purpurea. *Bauh. pin.* 163.
P. quibuſdam Criſta galli flore rubro. *Bauh. hiſt.* 3. 476.
P. prat. rubra vulgaris. *Park. theat.* 713. 1. *Raii hiſt.* 700. *ſyn.* 284. *Petiv. brit. t.* 36. *f.* 4.
Pedicularis. *Ger. emac.* 1071. 2.
P. minor. *Ritvin. mon. t.* 92. 2. *Dill. giſſ. app.* 40.
Fiſtularia. *Dod. pempt.* 556.
Alectorolophus. *Cluſ. hiſt.* 2. 211. 1.
Stem branched, calyxes oblong angular even, lip of the corollas cordate.

3. Pedicularis roſtrata. *Beaked Louſewort.*
Lin. ſpec. 845. *Juſſ.* 551. *Reich.* 3. 116. *mant.* 415. *Hall. helv. n.* 322. *t.* 8. *f.* 1. *Scop. carn. n.* 764.

[a] Browne. [b] Gærtner. [c] Swartz.
[a] Linn. ſpec. [b] Gen.
[a] Rotboell. [b] Hort. kew.

Kram. austr. 183. *n.* 3. *Jacqu. austr.* 3. *t.* 205. *Villars dauph.* 2. 426. *Allion. pedem. n.* 223. *Krock. silef. n.* 980.

P. caulibus reflexis, spica laxa purpurea. *Segu. ver.* 3. 125.

P. alpina, filicis folio, minor. *Bauh. pin.* 163.

Alectorolophus alpina 3. minor. *Clus. hist.* 2. 210.

Stem declining somewhat branched, helmet of the corollas acuminate-beaked, calyxes crested subhirsute.

4. Pedicularis Sceptrum Carolinum. *Sceptred Louse-wort.* *Lin. spec.* 845. *syst.* 551. *Reich.* 3. 116. *fl. suec. n.* 553. *mant.* 415. *Gunn. norv. n.* 33. *Fl. dan. t.* 26. *Gmel. sib.* 3. 206. *n.* 17. *Kniph. cent.* 9. *n.* 75.

Sceptrum Carolinum. *Rudb. it.* 1. *t.* 1. *Linn. lapp. n.* 243. *t.* 4. *f.* 4, 5. *hort. cliff.* 326.

Alectorolophus lapponica lutea, digitalis flore. *Petiv. hort. n.* 52. *in Raii hist.* 3. *app.* 241.

Stem simple, flowers by threes in whorls, corollas closed, calyxes crested, capsules regular.

5. Pedicularis verticillata. *Whorled Louse-wort.* *Lin. spec.* 846. *syst.* 551. *Reich.* 3. 115. *mant.* 415. *Gærtn. fruct.* 1. 247. *Hall. helv. n.* 318. *t.* 9. *f.* 1. *Scop. carn. n.* 766. *Kram. austr.* 183. *n.* 4. *Crantz. austr.* 312. *Jacqu. austr.* 3. *t.* 206. *Gmel. sib.* 3. 206. *n.* 18. *Villars dauph.* 2. 422. *Krock. silef. n.* 981.

Stem simple, leaves in fours.

6. Pedicularis resupinata. *Topsy-turvey Louse-wort.* *Lin. spec.* 846. *syst.* 551. *Reich.* 3. 117. *Gmel. sib.* 3. 204. *t.* 44.

Stem simple, leaves lanceolate serrate crenulate, flowers resupine.

7. Pedicularis recutita. *Jagged-leaved Louse-wort.* *Lin. spec.* 846. *syst.* 551. *Reich.* 3. 117. *mant.* 415. *Hall. helv. n.* 316. *t.* 8. *f.* 2. *Jacqu. austr.* 3. *t.* 258. *Krock. silef. n.* 985.

P. obsoleta. *Crantz. austr.* 316.

Stem simple, leaves pinnatifid serrate, spike leafy, calyxes coloured, corollas blunt.

8. Pedicularis tristis. *Dull-coloured Louse-wort.* *Lin. spec.* 846. *syst.* 552. *Reich.* 3. 117. *mant.* 415. *Gmel. sib.* 3. 212. *n.* 23.

Stem simple, helmet of the corollas villose at the edge.

9. Pedicularis flammea. *Upright Louse-wort.* *Lin. spec.* 846. *syst.* 552. *Reich.* 3. 118. *fl. lapp. n.* 244. *t.* 4. *f.* 2. *suec. n.* 556. *mant.* 415. *Hall. helv. n.* 315. *t.* 8. *f.* 3. *Gmel. sib.* 3. 212. *Krock. silef. n.* 983.

P. alpina folio Ceterach. *Bauh. pin.* 163. *Tournef. inst.* 173. *Scheuch. it.* 5. 426.

Filipendula montana altera. *Raii hist.* 771.

Stem simple, leaves pinnate imbricate backwards.

10. Pedicularis hirsuta. *Hairy Louse-wort.* *Lin. spec.* 847. *syst.* 552. *Reich.* 3. 118. *mant.* 415. *fl. lapp. n.* 245. *t.* 4. *f.* 3. *suec. n.* 555. *Pallas it.* 3. 34. *Villars dauph.* 2. 423. *Allion. pedem. n.* 227. *t.* 12. *f.* 1?

Stem simple, leaves tooth-pinnate linear, calyxes hirsute.

11. Pedicularis rosea. *Rose-coloured Louse-wort.* *Lin. syst.* 552. *Jacqu. misc.* 2. 57. *icon. rar. t.* 40. *Allion. pedem. n.* 227. *t.* 12. *f.* 1. sec. Jacqu.

Stem simple, leaves pinnate, pinnas oblong pinnatifid, calyxes hirsute.

12. Pedicularis incarnata. *Flesh-coloured Louse-wort.* *Lin. spec.* 847. *syst.* 552. *Reich.* 3. 118. *Hall. helv. n.* 319. *Jacqu. austr.* 2. *t.* 140. *Pallas it.* 2. 404. *Allion. pedem. n.* 228. *t.* 3. *f.* 2. & *t.* 4. *f.* 2. *Villars dauph.* 2. 424. *Krock. silef. n.* 984.

Stem simple, leaves pinnate serrate, calyxes rounded smooth, helmet of the corollas hooked acute.

13. Pedicularis lapponica. *Lapland Louse-wort.* *Lin. spec.* 847. *syst.* 112. *Reich.* 3. 119. *fl. lapp. n.* 242. *t.* 4. *f.* 1. *suec. n.* 554. *hort. cliff.* 326. *mant.* 415. *Fl. dan. t.* 2. *Pallas it.* 3. 34.

Stem simple, leaves pinnatifid serrate, calyxes bifid blunt.

14. Pedicularis comosa. *Spiked Louse-wort.* *Lin. spec.* 847. *syst.* 552. *Reich.* 3. 119. *mant.* 415. *Gouan illustr.* 37. *Pallas it.* 1. 148. *Allion. pedem. n.* 229. *t.* 4. *f.* 1. *Villars dauph.* 2. 431.

Stem simple, spike leafy, helmet of the corollas acute emarginate, calyxes five-toothed.

15. Pedicularis foliosa. *Leafy-spiked Louse-wort.* *Lin. syst.* 552. *Reich.* 3. 119. *mant.* 86. *Hall. helv. n.* 317. *t.* 9. *f.* 2. *Gouan illustr.* 37. *Jacqu. vind.* 250. *austr.* 2. *t.* 139. *Villars dauph.* 2. 433.

P. comosa. *Scop. carn. n.* 765.

P. alpina, filicis folio major. *Bauh. pin.* 163.

P. major alpina. *Dalech. hist.* 1138.

P. alp. flore luteo radice nigra. *Bauh. hist.* 3. 439.

Crista galli montana, floribus pallidis in spicam congestis. *Raii hist.* 770. — & P. major. *Dalech. Bauh. hist.* 3. 438. *ejusdem.*

Stem simple, spike leafy, helmet of the corollas very blunt entire, calyxes five-toothed.

16. Pedicularis canadensis. *Canadian Louse-wort.* *Lyn. syst.* 552. *Reich.* 3. 120. *mant.* 86.

Stem simple, spike somewhat leafy, helmet of the corollas bristly-two-toothed, calyxes truncated downwards.

17. Pedicularis tuberosa. *Tuberous Louse-wort.* *Lin. spec.* 847. *syst.* 552. *Reich.* 3. 120. *mant.* 415. *Hall. helv. n.* 323. *t.* 10. *Scop. carn. n.* 763. *Gmel. sib.* 3. 208. *Villars dauph.* 2. 430. *Krock. silef. n.* 986.

Pedicularis alpina lutea. *C. B. Segu. ver.* 3. 126.

Filipendula montana flore pedicularis. *Bauh. pin.* 163.

Alectorolophus montana flore luteo. *Barr. ic.* 466. *Boec. mus.* 315. *t.* 8.

Stem simple, calyxes crested, helmet of the corollas hooked-beaked.

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18. Pedicularis gyroflexa.

Villars dauph. 2. 426. *t.* 9. *Hall. helv. n.* 324. *t.* 11.

P. tuberosa. *Linn. Allion. pedem. n.* 231. *Scop. carn. n.* 763.

Leaves bipinnate, leaflets somewhat toothed curled and blunt, flowers turned to the left hooked-beaked.

19. Pedicularis groenlandica.

Retz. prodr. scand. ed. 2. 145. *obs.* 4. 27. *n.* 87. *t.* 1. *Fl. dan. t.* 1166.

Stem simple, leaves pinnate serrate, calyxes oblong, smooth, helmet of the corollas awl-shaped bowed longer.

DESCRIPTIONS, *&c.*

The alpine species of *Pedicularis*, that is, all, except the two first and the sixteenth, have successively occupied several of the first botanists in the present age: Linneus in Lapland, Haller in Switzerland, Gmelin in Siberia, Seguier and Allioni in Italy, and Villars in Dauphiné. Linneus has described six natives of Lapland; Haller ten of Switzerland, but he said that he had thirty species from different countries; Gmelin twelve; Allioni eleven; and Villars ten, besides several remarkable varieties. These plants have their leaves very much cut, and that in a very regular manner. Their flowers are red, white or yellow, and the mixture or shades of these three colours sometimes give the corolla the colour of fire. They grow in general at a considerable elevation, namely, more than a thousand toises above the level of the sea. Villars has taken much pains with these plants, and has corrected some mistakes into which Haller and Linneus have fallen. He observes with great modesty, that if the cedars have bent, what are we to expect of the reeds? And that he could not pass by a favourable opportunity of celebrating their memories, by showing that their mistakes were almost unavoidable, and have even been useful to us. May I not, says he, in paying homage to truth and the memory of the two first botanists of our time, hope for much indulgence from those learned men who have it in their power to correct my errors, and to complete the work which I have only begun?—Tragus affirms, and others take it from him, that these plants in pastures breed lice in animals that feed on them. The truth seems to be, that the Marsh Lousewort indicates a very bad pasture; and the want of proper food may occasion the cattle to be in bad condition, and to breed vermin[a].

[a] Villars dauph.

1. Root annual. Stem about a foot high, upright, angular, purplish, hollow, branched. Branches spreading. Leaves bipinnatifid; or pinnate with about ten pairs of long pinnas, which are semipinnate with short indented pinnules. Leaves and flowers distant. Flowers axillary, solitary, on short peduncles, forming a loose spike. Calyx two-lipped, compressed and opening sideways, reddish, a little hairy, bulging at the base; segments cloven and jagged, two of them crested or bordered with leafy appendages. Corolla purple, varying to white: helmet with a little tooth on each side, not notched at the end; lower lip fringed with fine soft hairs [a]. Capsule oblong, smooth, acuminate, involved in the calyx. Seeds numerous in each cell, ovate, bluntish, somewhat rugged, grooved [b].

Native of many parts of Europe, particularly the northern parts, in marshes and wet meadows; flowering in june and july.—It is an unwelcome guest in meadows, being disagreeable to cattle, and thought by some to be destructive to sheep: it is somewhat caustic, and seems to be seldom eaten.

2. Root annual. Stem very short. Branches from the root, long, spreading close to the ground. Leaves simply pinnate, with roundish acutely serrate pinnas. Floral leaves deeply divided: segments toothed. Leaves and flowers crowded. Flowers in a cluster at the top of the plant, and sparingly on the branches. Calyx green within, purplish without, nearly half as long as the corolla, one of the clefts much deeper; segments toothed, that opposite to the deepest cleft narrowest. Corolla purple, much more slender than the calyx: tube compressed: upper lip with a little tooth on each side; lower lip with three divisions, the middle segment a little smaller. The two taller filaments hairy towards the top [c].—Native of many parts of Europe and Siberia, in wet pastures and heaths, also in woods; flowering in june.

The expressed juice, or a decoction of this plant, has been used with advantage as an injection for sinuous ulcers. It is said that if the healthiest flock of sheep were to be fed with it, they would become scabby and scurfy in a short time, the wool would get loose, and they would be overrun with vermin [b]. This also applies to the first sort; but I doubt whether it be true of either. See what was said above.

The calyx is commonly said to be five-cleft, with one segment very small and often simple; the other four crested. To Villars it appeared to be four-cleft, like that of the preceding, from which it is distinguished by being a much smaller plant, frequently only two or three inches in height, whereas the other is sometimes eighteen inches, and in warm climates two and even three feet high: procumbent; and the flowers longer.

3. Root black, thick, having large fibres swelling out a little in the middle. Stem inclined, five or six inches high, having sometimes a lateral branch from the lower part, with one or two flowers on it; and also, but very seldom, another shorter near the base of the spike; which is rounded, and has few flowers, of a purple or deep red colour. Leaves pinnate, and their divisions toothed. Calyx a little villose: segments toothed. Upper lip of the corolla compressed and beaked [d].

Villars remarks, that this species not being always branched, to distinguish it from his *gyroflexa*, we must observe that the flowers of this are peduncled, in very small number, of a deep red, with the upper lip very much lengthened out and curved; the stem also is thinner.—Allioni informs us, that he has seen the flowers change like Linneus's *Peloria*.

Native of Switzerland, Austria, Carniola, Dauphiné, Piedmont, Silesia.

4. This is distinguished from the other species by the gape of the corolla being closed, the pericarp roundish, acuminate but regular, whereas in the others it is bent in with an oblique point; the size is half that of a man; the flowers four, five or sometimes three only at each joint, remote, in whorls, the corolla of a golden yellow colour, except that the lower lip is tinged with purple or blood red at top. Rudbeck named it *Sceptrum Carolinum* in honour of Charles XII. King of Sweden, from its manner of growth like a sceptre.—Discovered by Rudbeck in Lapland, where it was also found by Linneus, in such abundance in one place on the highway as to stop a horse going full speed. It grows also in Dalekarlia, Ostrobothnia between Kemi and Uloa, near Upsala, in Westrogothia, but more rarely [e]; Norway, in several places: Prussia and Russia: in bogs, wet woods, &c.

5. Root more simple or less branched than in the other sorts. Stems several, simple, with smooth, bipinnate leaves on them, opposite by threes or fours. Flowers red: the upper lip remote, oblong, almost straight, blunt; the lower divided into three parts. Calyx rayed, often white, membranaceous, a little coloured and puffed out after flowering. It is very small, and has beautiful red flowers. It seems to be biennial [f]. Capsule oblong, with an attenuated beak, compressed a little, membranaceous, thin, opening longitudinally by the upper edge, which is a little more convex: partition very narrow, contrary to the valves. Receptacle small, subglobular, flattened to the partition near the base. Seeds few, about ten in each cell, ovate, angular, acuminate at both ends, with a membranaceous, narrow whitish scar on one side, striated in little dots, dusky; navel beaked, curved inwards, formed of the integument, not callous [g]. Gærtner says he does not understand what Linneus means by *semina tunicata*.

Native of Switzerland, Austria, Carniola, the South of France, Silesia, Siberia.

6. Stem a foot high, even, quite simple. Leaves undivided, deeply serrate with crenulate serratures, alternate. Flowers from the upper axils solitary, sessile. Calyx even, blunt, bifid, entire. Corolla of a very deep purple, turned upside down: helmet hooked, compressed: standard wide, rounded. It varies with flesh-coloured and with milk-white flowers.—Native of Siberia [h].

7. Root perennial, woody. Stem upright, even, not more than a foot high, with few, alternate leaves, on short petioles, under the spike sessile. Root-leaves on long petioles, having about sixteen pairs of pinnas, the extreme ones confluent. Spike short, with lanceolate, acuminate, hirsute, entire, bay-coloured leaves or bractes. Calyx five-cleft, villose, as are also the bractes. Corolla purple or bay-rose-colour. Helmet sickle-shaped, hooked, cut off at top. Pistil and stamens stand out far beyond the helmet [i].

Native of Switzerland, Austria and Silesia. Introduced in 1787, by William Pitcairn, M. D.

8. This is a very hairy plant. Stem quite simple, a span high. Leaves alternate, pinnatifid, serrulate. Flowers heaped into a spike or head. Corolla blunt, yellow; with the helmet a little curved inwards, villose at the edge [k]. Gmelin says that the flowers are collected into a very close spike, that the corolla is of a very pale yellow, and that the beak is blunt.—Native of Siberia.

9. This at first sight resembles *Sceptrum Carolinum* in miniature, but it is twenty times less. It differs from the other species in having the leaves very like those of *Filipendula*, with the segments imbricate; the root tuberous and fusiform, like Skirrets, with a few scales at the base; the corolla tawny, with the top of the upper lip purple, the lower lip, shorter by half than the upper.—Stem scarcely a finger's length, round, upright, dark purple. Root-leaves very many, spreading, on filiform petioles, bluntly lanceolate, almost divided to the midrib; the divisions ovate, the edge of one lying over the next, crenate and each notch crenulate. Stem-leaves fewer, some immediately under the spike, like the root-leaves. Spike terminating the stem, and covering a third part of it, upright, compressed, oblong. Calyx striated, thin, four-toothed, oblong. Corolla narrow, the lower lip very small, the upper narrow, almost upright, blunt. Pericarp acuminate, with the tip curved inwards [l]. The calyxes

[a] Withering, Lightf. [b] Pollich. [c] Withering, Lightf. [d] Withering. [e] Villars. [f] Villars. [g] Gærtner. [h] Linn. spec. [i] Krocker. [k] Linn. Iapp. & fuec. [l] Linn. Iapp.

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are by no means ferrate; and the corolla is very dark purple, eſpecially at the end [a]. Haller ſays that the upper petal or helmet is ferruginous; the lower or beard pale yellow.

Native of Lapland, Switzerland, Sileſia, Siberia.—Introduced in 1775, by Drs. Pitcairn and Fothergill [b].

10. Root perennial. Stem half a finger's length, thick, with oblong cluſtered ſcales at the baſe. Root-leaves almoſt linear ſcales. Stem-leaves a little longer than the ſcales, crenate at the end, the upper ones linear-lanceolate, tooth-pinnate beyond the middle, the reſt flat, broad, ariſing from a wide petiole, and embracing: the toothlets very narrow and very minutely crenated. Spike terminating, very ſhort, but thick and quadrangular: flowers ſix to twelve, ſeſſile: calyxes large, ovate, four-cleft beyond the middle, acute, aſh-coloured; the lower lip ſhorter, the upper upright blunt; pale fleſh-colour, with a deeper heart-ſhaped ſpot on the lower lip. It differs from the reſt in its wide embracing petioles, villoſe calyxes, the colour of the corolla, and the notches of the leaves [c].

Villars can ſcarcely think that the little Lapland plant is the ſame with that of Dauphiné and Piedmont. He deſcribes it to be only two or three inches high, with the ſtem and leaves ſmooth. Leaves bi-pinnate, very fine and flat: on the ſtem only one or two, pinnate. Flowers from five to ſeven, in a diſtinct ſpike. Calyx in five ſimple diviſions, very villoſe. Upper lip of the corolla blunt, a little curved: the whole bright red. It is allied to *P. incarnata*, but is only one ſixth of the ſize. Monſ. Villars found a plant at the Grande Chartreuſe, connecting theſe two, in the ſize, and the form of the leaves, but the calyx leſs villoſe than either.—Native of Lapland, Dauphiné, Piedmont, Siberia.

11. Root branched, yelloviſh white. Stems one, two or three, riſing amid abundance of root-leaves, not much ſhorter than the ſtems, and having the appearance of lanceolate bipinnate fronds. Pinnas very narrow, linear, pinnatifid-toothletted, ſeſſile, flat, decreaſing in ſize both ways, naked, deep green above, watery green underneath; the rachis firſt green, then red, and finally dark purple. On the ſtem one, or at moſt two leaves, like the others only much leſs. Stem upright, ſomewhat angular, changing colour like the rachis, ſmooth and ſhining, towards the ſpike, eſpecially when young, white-villoſe. Spike terminating, ſhort, compact; each flower riſes on a ſhort red pedicel from the axil of a leafy bractle, almoſt exceeding the calyx, green, pinnatifid-toothed; but in the upper bractles the teeth decreaſe to two and even one. Calyx from an ovate baſe tubularly cylindrical, five-toothed: teeth equal, ſimple, acute, red, as are alſo the nerves of the tube: the reſt of the calyx is green, but the villoſe hairs that cover it are white and tranſparent. Corolla elegant, red; with a tube longer than the calyx, fading away from red to white: helmet deep red, very blunt, ſtraight, compreſſed, half cloſed, bifid below the tip: lower lip three-lobed; lobes rounded, the middle one ſomewhat ſhorter, all entire. Anthers in front preſſed cloſe to each other, with the lateral edges white-villoſe, the villoſe hairs prominent beyond the helmet. Style roſe-coloured at top, with a bluntiſh yelloviſh ſtigma.—Native of Carinthia; flowering in July [d].

12. Stem from a foot to eighteen inches in height, upright, not branched, terminating in a very long ſpike. Midrib of the leaves wide; pinnas ſemipinnate, ſharply toothed. Spike when young cloſe, afterwards looſe, with ſmall bractles. Calyx half-five-cleft, with unequal ſegments, the lower longeſt, bearded with much cottony down. Helmet narrow, beaked. Corolla purple. Lower lip almoſt equally three-lobed, the middle lobe ſomewhat ſmaller [e].

This plant ſeldom has more than one ſtem from a root. Leaves large, bipinnate, thick and ſolid, ſmooth or very little villoſe; they are better furniſhed, and the diviſions are thicker and much leſs deeply cut than in *P. tomoſa* and *foliоſa*. Flowers many, red, in a long, looſe ſpike. Calyx villoſe, and its diviſions ſimple. Upper lip of the corolla falcated to form a pendant hook like a truncated beak, at the end of which appears the ſtigma. There is one variety, which is ſmaller and ſmooth: and another, with the leaves leſs cut and almoſt ſimple, the ſtem lower, and the flowers fewer, the colour of fire inclining more or leſs to yellow [f].

There is no doubt of this being the plant of Allioni and Haller; but Villars heſitates reſpecting Linnæus, who deſcribes the calyx as ſmooth.

Native of Switzerland, Auſtria, Dauphiné, Sileſia, Siberia.

13. Root perennial. Stem a ſpan high, upright, almoſt ſtraight, round, ſmooth. Root-leaves ſcarcely any. Stem-leaves ſeven or eight, lanceolate, acute, narrowed at the baſe into the petiole, alternate, divided to the middle into from fourteen to twenty pinnas, each having from two to five toothlets on each ſide, ſmooth. Spike terminating, looſe, four-cornered, compoſed of from ſix to ſixteen flowers, declining from the perpendicular, each furniſhed with its bractle; the lower bractles longer than the flowers, the upper ones ſcarcely ſo long as the calyx. Calyx ſmooth, tubular, with a bifid blunt mouth. Corolla yellow, with the upper lip compreſſed, produced at the tip, reflexed downwards, and prominent, like an eagle's beak [g].

In Flora Suecica it is deſcribed as a palm in height; all the leaves of the ſame ſize, and not the root-leaves larger; pinnatifid, ferrate; calyxes ſometimes quite entire, ſometimes with two or four teeth. It differs from *P. tuberoſa* in being ſmaller, in having more leaves on the ſtalk, ſmaller flowers, the root-leaves the ſame with thoſe of the ſtem, the pinnas not ſubdivided but merely ferrate, the calyxes not ferrate, but, excepting three or four teeth, quite entire at the edge, and the ſtems ſmooth not hirſute.

Native of the mountains of Lapland and Dalecarlia, Denmark and Siberia.

14. Calyx five-toothed, tubular, quite entire, a little hairy. Corolla yellow, with the upper lip ſharp but emarginate, the two teeth ſharp and nodding [h].

By its port, ſize and diſpoſition of the flowers it holds the place between *P. tuberoſa* and *foliоſa*. Lateral roots whitiſh, tuberous, thicker at the end, as repreſented in John Bauhin's figure (3. 438.); the middle root is bigger and blackiſh. Stems commonly two, a foot high. Root-leaves tripinnate, the laſt diviſions terminating in a white thread or ſpine a quarter or a third of a line in length. Stem-leaves two or three, ſmaller, and with the leaflets fewer and more ſeparated. Spike terminating, three or four inches long, with white or yellow flowers, ſeparated by bractles, which lengthen on their axis, and appear little beyond the flower though they are longer: helmet bent back like a ſickle, compreſſed, ending in a narrow but truncated point: they are inclined or roll round to the left, as in *P. roſtrata* and *gyroflexa* [i].

Native of the mountains of Italy, Dauphiné and Siberia.—Introduced in 1775, by the Doctors Pitcairn and Fothergill [k].

15. Leaves bipinnatifid. Calyxes with the angles and edge hairy. Corolla pale yellow: helmet not beaked, very blunt, hooked. Stem frequently a foot high [l].

This is loftier and ſtronger than moſt of the other ſpecies. Root ſimple, biennial. Stem from a foot to eighteen inches in height, ſtrong and thick, loſing the root-leaves, as ſoon as it riſes to flower. Leaves very large, tripinnate, with the diviſions very narrow, diſtinct and ſharp, without ſenſible points. Stem-leaves two or three, ſmaller and at the upper part only. The flowers form a conſiderable ſpike, are of a yellow colour, and ſeparated by large bipinnate leaves [m].

Gouan remarks, that this is very different from the other ſpecies, even when it is not in flower. For the root-leaves are pinnate, with the pinnas deeply pinnatifid, and the lobules ſharply toothed: the ſtem-leaves on the other hand, eſpecially the upper ones

[a] Lin. ſuec. & ſyſt. [b] Hort. kew. [c] Linn. lapp. [d] Jacqu. miſc. [e] Haller. [f] Villars. [g] Linn. lapp. [h] Lin. ſpec. [i] Villars. [k] Hort. kew. [l] Linn. [m] Villars.

are

are decurſively pinnate, the pinnas being confluent as in Tanſey, Achillea, &c. Petioles, at leaſt the young ones hoary and very hirſute: Helmet of the corolla blunt and villoſe as in *Phlomis Leonurus*. Haller's figure is good as to the calyx, ſpike and root-leaves; but the ſtem-leaves are very ill repreſented: but Gouan refers to *ſ.* 1. as Haller himſelf does.

Native of Switzerland, Auſtria and the South of France.—Introduced in 1786, by Edmund Davall, Eſq.[r]

16. Root perennial. Stem upright, a ſpan high, pubeſcent towards the top. Leaves alternate, pinnatifid, gaſhed, crenate, blunt, ſmooth. Spike terminating, ſeſſile, ovate, with leaflets a little longer than the calyx. Calyxes pubeſcent, truncated obliquely downwards. Corollas white: helmet ſomewhat ſickle-ſhaped, ſcarcely beaked, but in a manner cut off at the tip, with a tooth ſcarcely apparent at the upper edge, and a briſtly tooth on each ſide at the lower edge, much more lengthened out than that in *P. ſylvatica* and *tuberoſa*. Lower lip trifid, blunt.—Found by Kalm in North America[s].

17. Leaves like thoſe of *Achillea Millefolium* or Milfoil. Leaves and calyxes lanuginous. Corollas yellow[h].

Villars deſcribes a plant under this name of *P. tuberoſa*, which is ſo nearly allied to *P. comoſa*, that it may poſſibly be no more than a variety of it.—Root thick and a little tuberous, black, fibrous and thick. Stem ſimple, villoſe, and very thick. Height from eight inches to a foot. Leaves villoſe, almoſt tripinnate, the diviſions diſtinct, reſembling a ſmall fern: each laſt diviſion ends in a very ſhort, recurved, whitiſh thread. The ſtem has only a leaf or two: The flowers form a very thick ſpike, cloſer at top than at bottom: they are yellow or whitiſh. The leaves among the flowers and the diviſions of the calyx are both ſimple. (According to Allioni (*ſpec.* 50. *t.* 11. *f.* 1. they are divided.) The upper lip of the corolla is ſickle-ſhaped, and pointed at the end.—See the next ſpecies.

Haller deſcribes his n. 323. thus—Root compoſed of numerous round bulbs or tubers, almoſt woody, collected into one head. Root-leaves very numerous, long, pinnate, with twenty pairs of pinnas, ſemipinnate, pinnules having one or two teeth. Stems not branched, a long ſpan or a foot in height, hirſute, almoſt leafleſs, or having at moſt one or two pairs of leaves. Flowers in a cloſe ſpike, ſeparated by leaves, ſcarcely ſtanding out beyond the calyx. Fruit conical, compreſſed, imperfectly two-celled, with the partition ſhorter than the horn. Colour of the flowers very pale yellow. Helmet acutely beaked.

According to Linneus, it is a native of the Swiſs, Italian and Siberian mountains. But Villars doubts the exiſtence of it, and refers the *tuberoſa* of Linneus, Allioni and Scopoli to his *gyroflexa*.

18. Root perennial, compoſed of a dark black trunk, often carious, three or four lines in diameter, from which ſpring thick lateral fibres, horizontal, quite ſimple, pretty long, not at all ſwelling out, any more than the trunk of the root. Stems one, two, ſometimes ſeveral, riſe bending to the height of ſix or eight inches, ſeldom a foot; they are villoſe, firm, and have one or two bipinnate leaves at their baſe, and as many, but ſmaller, on the upper part; they are terminated by a ſpike of a beautiful red colour, truncated and villoſe, compoſed of pinnatifid bractes of ſeveral villoſe calyxes, the diviſions of which are toothed or pinnatifid. Helmet of the corolla turned to the left, pointed: the lower lip has three rounded diviſions, concealed one under the others. Root-leaves long, bipinnate; leaflets tooted; diviſions blunt, villoſe, frequently recurved upwards, hard and as it were dried, having often a white mealy border; they are all petioled, well furniſhed, and a little imbricate. Capſule oval, pointed, a little villoſe, containing whitiſh ſeeds.

There is a variety, with finer and more diſtinct leaves, a yellow flower, and the piſtil longer than the corolla, which according to Bellardi is the *tuberoſa* of Linneus.

It ſeems that Scheuchzer, adopting Tournefort's ſynonym of *P. alpina aſphodeli radice, purpuraſcente flore*, which is certainly not this plant, has deſcribed this ſpecies under John Bauhin's name of *P. bulboſa* (3. 438.), though the latter has figured and deſcribed *P. comoſa* under this name, and that never has a red flower. This miſtake of Scheuchzer, occaſioned perhaps by the vague obſervations of Cluſius, who mentions one ſpecies with a purple, and another with a yellow flower, has given riſe to ſeveral others. 1. Haller and Moriſon have found it difficult to reconcile theſe differences of colour in a genus where they are ſufficiently conſtant; and the former complains that Tournefort and Magnol have aſſigned a red colour to the flowers of theſe plants. 2. Haller at firſt deſcribed and gave the ſynonym of *P. bulboſa*, J. B. which is *P. comoſa*, Linn.; but his figure, which is the ſame in both editions, cannot agree with it, on account of the toothed calyx; and approaches nearer to *P. gyroflexa*, which Haller has under n. 324. 3. Linneus (*ſpec. ed.* 1. 610.) having given a *P. tuberoſa*, with the diviſions of the calyx toothed like a cock's comb, and that doubtleſs after the figure of Haller, without conſulting the deſcriptions; an apocryphal ſpecies has been produced, which has occaſioned a diſagreement even among the beſt informed botaniſts. Scopoli and Allioni have given the name of *P. tuberoſa* to our *P. gyroflexa*: the latter, and others have ſent it under this name to Juſſieu; whilſt Gmelin, Chaix and Seguier, conſulting John Bauhin, and the deſcriptions of Haller, have given the name of *P. tuberoſa* to the *comoſa* of Linneus, which deſerves that name better on account of its roots[t].

Native of the South of France, Switzerland, Carniola, Piedmont.

19. Native of Greenland. Firſt given by Retzius under the name of *P. incarnata*, from which it differs in the leaves, ſpike, calyx, and helmet of the corolla[x].

Miller mentions four kinds of Louſewort, without any names, but he inſiſts chiefly on the Yellow Rattle, which is *Rhinanthus Criſta galli*.

PEDICULARIS. See *Bartſia*, *Euphraſia*, *Gerardia*, *Hebenſtreitia*, *Rhinanthus*, *Salſola*.

PEE CAIONI. See *Verbeſina*.

—— CUPAMENI. See *Trapa*.

—— INOTA INODIEN. See *Phyſalis*.

—— KANDEL. See *Rhizophora*.

—— MOTTENGA. See *Sebecnus*.

—— TANDALE COTTI. See *Crotalaria*.

——TIANGA PULPANI. See *Ruellia*.]

PEGANUM. (Πηγανον of *Theophraſtus and Dioſcorides*. *From* πηγνυω *congelo*.)

Lin. gen. n. 601. *Reich. n.* 656. *Schreb. n.* 821. *Gærtn. t.* 95. *Juſſ.* 297. Harmala. *Tournef. t.* 133.

Claſſ. 11. 1. Dodecandria Monogynia.

Nat. order of *Multiſiliquæ*. *Rutaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* linear, often toothed, erect, the length of the corolla, acute, permanent.

COR. *Petals* five, oblong-ovate, from upright-ſpreading.

STAM. *Filaments* fifteen, awl-ſhaped, ſhorter by half than the corolla, dilated at the baſe into a nectary under the germ. *Anthers* oblong, erect.

PIST. *Germ* roundiſh-three-cornered, raiſed on a receptacle from the baſe of the flower. *Style* filiform, round, the length of the anthers. *Stigma* oblong, three-ſided.

PER. *Capſule* roundiſh-three-cornered, three-celled, three-valved, with contrary partitions.

SEEDS very many, ovate, acuminate.

OBS. Peganum *differs from* Ruta, *as* Celaſtrus *from* Euonymus; *for what is taken from the number of the piſtil, is added to the ſtamens, and vice verſa.*

ESSENTIAL CHARACTER.

Cal. five-leaved or none. *Cor.* five-petalled. *Capſ.* three-celled, three-valved, many-ſeeded.

[r] Hort. kew. [s] Linn. mant. [h] Linn. ſyſt. [t] Villars. [x] Retz. obſ.

SPECIES.

1. Peganum Harmala.
Lin. spec. 638. *fyſt.* 445. *Reich.* 2. 421. *hort. upſ.* 144. *cliff.* 206. *Gærtn. fruct.* 2. 87. *Gron. orient.* 165. *Gmel. ſib.* 4. 177. *n.* 96. *Fabric. helm.* 228. *Willich obſ.* 2. 50. *Giſeke ic. ſiſe.* 1. *n.* 11. *Blackw. t.* 310.
Ruta ſylveſtris, flore magno albo. *Bauh. pin.* 336.
Harmala. *Dod. pempt.* 121.—multifida. *Alſton. pedem. n.* 1652.
Rura quæ dici ſolet Harmala. *Bauh. hiſt.* 3. 200.
Leaves multifid.
[2. Peganum dauricum.
Lin. ſpec. 638. *fyſt.* 445. *Reich.* 2. 421.
Ruta foliis ſimplicibus alternis. *Gmel. ſib.* 4. 176. *t.* 68. *f.* 2.
Harmala montana daurica, &c. flore albo. *Amm. ruth.* 91.
β. H. mont. &c. floribus luteis. *Amm. ruth.* 92.
Leaves undivided.]

DESCRIPTION, *&c.*

1. Root as large as a man's little finger, by age becoming woody. The ſtalks decay every autumn, and new ones ariſe in the ſpring: they grow about a foot long, and divide into ſeveral ſmall branches. Leaves thick, oblong, cut into ſeveral narrow ſegments, dark green, gummy and of a bitteriſh taſte. The flowers are produced at the ends of the branches, ſitting cloſe between the leaves. Corolla white. [Capſule ſlightly umbilicated at top, three-grooved: partitions faſtened to the middle of the valves, anſwering to the grooves on the outſide. Seeds oblong, awl-ſhaped or angular, attenuated towards the navel, brown-bay, netted with very minute excavations, faſtened in a horizontal poſition to the central thickened edge of the partitions[1].
Native of Spain, in the county of Nice, Syria, Cappadocia, Galatia, Siberia.—It was cultivated here in 1570, as appears from Lovel, *adv.* 390.[2]] It flowers in july, and in warm ſummers the ſeeds will ripen here in the autumn.
[Willich remarks, that the calyx ſhould rather be conſidered as a floral leaf; for it has the ſame ſtructure with the leaves, and is perfect and expanded long before the opening of the flower: and that the ſtigma is curved in, twiſted and ſtraight, all on the ſame plant.
2. Native of Siberia.
Retzius and Vahl have each another ſpecies.]

PROPAGATION AND CULTURE.

They are propagated by ſeeds, ſown thinly on a bed of light earth, the beginning of april: when the plants come up, keep them clean from weeds: at the end of october or beginning of november, when the ſtalks decay, cover the bed with tanner's bark, aſhes or ſaw-duſt, to keep out the froſt, for the roots are ſomewhat tender when young. In march following tranſplant them into a warm ſituation and dry ſoil, where they will continue ſeveral years.

[PEREA. See *Rhizobolus.*

PELA. See *Pſidium.*

PELARGONIUM. (Πελαργος, Ciconia. *Ariſt. So called from the length of the beak to the fruit.*)
L'Herit. geran. Ait. hort. kew. 2. 417.
Gerania africana. *Linn.*
Claſſ. 16. 3. Monadelphia Heptandria.
Nat. order of *Gruinales. Gerania*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted: *ſegments* ovate, acute, concave, permanent; upper ſegment, ending in a capillary nectariferous tube, decurrent along the peduncle.
COR. *Petals* five, obcordate or ovate, ſpreading, large, irregular.
STAM. *Filaments* ten, awl-ſhaped, united at the baſe, ſpreading at top, unequal in length, all ſhorter than the corolla, three of them (ſeldom five) caſtrated. *Anthers* ſeven, oblong, verſatile.
PIST. *Germ* five-cornered, beaked. *Style* awl-ſhaped, longer than the ſtamens, permanent. *Stigmas* five, reflex.

PER. *Capſule* five-grained, beaked, the cells opening inwards, the beak ſpiral, bearded on the inſide.
SEEDS ſolitary, ovate-oblong.

ESSENTIAL CHARACTER.

Cal. five-parted, the upper ſegment ending in a capillary nectariferous tube running along the peduncle. *Cor.* five-petalled, irregular. *Filam.* ten, unequal, three of which (ſeldom five) are caſtrated. *Fruit* five-grained, beaked: beak ſpiral, bearded within.

SPECIES.

§ 1. *Stemleſs, root rapaceous, umbels compound.*

1. Pelargonium hirſutum. *Various-leaved Crane's-bill. Ait. hort. kew.* 2. 417.
Geranium hirſutum. *Burm. geran. n.* 68. *t.* 2. *Cavan. diſſ.* 4. 247. *t.* 101. *f.* 2. *Raii ſuppl.* 513. *n.* 31.
G. lobatum β. hirſutum. *Lin. ſpec.* 950. *Reich.* 3. 316.
Leaves obovate or lanceolate quite entire or pinnatifid rough-haired ciliate.
2. Pelargonium pinnatum. *Pinnated Crane's-bill. Ait. hort. kew.* 2. 417. *L'Herit. n.* 14.
Geranium pinnatum. *Lin. ſpec. ed.* 1. 677. *Burm. ger. n.* 66.
G. prolificum γ. pinnatum. *Lin. ſpec. ed.* 2. 950. *Reich.* 3. 315.
G. aſtragalifolium. *Cavan. diſſ.* 4. 257. *t.* 104. *f.* 2. *Jacqu. ic. vol.* 1. 3. 511. *collect.* 3. 184.
G. africanum, aſtragali folio. *Comm. præl.* 53. *t.* 3.
Umbel ſubcompound, leaves pinnate, leaflets roundiſh-ovate undivided birſute on both ſides.
3. Pelargonium rapaceum. *Caraway-leaved Crane's-bill. Ait. hort. kew.* 2. 418. *L'Herit. n.* 17. *Jacqu. collect.* 3. 190.
Geranium rapaceum. *Lin. ſyſt. ed.* 10. 1141. *Jacqu. ic.* 3. 510.
G. prolificum α. *Lin. ſpec.* 949. *Reich.* 3. 315.
G. africanum myrrhidis folio, flore albicante, rad. rapacea. *Comm. hort.* 2. 125. *t.* 63.
Leaves decompoundedly laciniate villoſe.

§. 2. *Almoſt ſtemleſs, root tuberous.*

4. Pelargonium lobatum. *Vine-leaved Crane's-bill. Ait. hort. kew.* 2. 418. *L'Herit. n.* 22.]
Geranium lobatum α. *Lin. ſpec.* 950. *Reich.* 3. 316. * *Mill. dict. n.* 39. *Comm. hort.* 2. 125. *t.* 62.
Stemleſs, umbel compound, leaves ternate or quinate lobed tomentoſe.
5. Pelargonium triſte. *Night-ſmelling Crane's-bill. Ait. hort. kew.* 2. 418. *L'Herit. n.* 23.
Geranium triſte. *Lin. ſpec.* 950. *ſyſt.* 615. *Reich.* 2. 317. *hort. cliff.* 344. *upſ.* 197. *Mill. dict. n.* 35. *Knorr. del. hort.* 1. *t.* S. 19. *Kniph. cent.* 7. *n.* 29. *Riv. pent.* 106. *Corn. canad.* 109. *t.* 110. *Breyn. cent.* 126. *t.* 58. *Raii hiſt.* 1057. *n.* 11, 12, 13.—foliis pinnatifidis. *Burm. ger.* 57.
G. indicum noctu odoratum flore maculato. *Ger. emac.* 948. *n.* 5.
Subcauleſcent, umbel ſimple, leaves multifid-laciniate villoſe, ſegments lanceolate.
[6. Pelargonium flavum. *Carrot-leaved Crane's-bill. Ait. hort. kew.* 2. 418. *L'Herit. n.* 24.
P. daucoides. *Jacqu. ic. rar.* 522. *collect. ſuppl.* 142.
Geranium flavum. *Lin. mant.* 257. *ſyſt.* 614. *Reich.* 3. 313. *Burm. prodr.* 19.
G. daucifolium. *Murr. in comm. gott.* 1780. *p.* 13. *t.* 4.
G. afr. fol. ſtaphylini. *Riv. pent. t.* 107.
Subcauleſcent, umbels ſimple, leaves decompoundedly laciniate birſute, ſegments linear.

§. 3. *Herbaceous or ſuffruticoſe.*

7. Pelargonium tabulare. *Rough-ſtalked Crane's-bill. Ait. hort. kew.* 2. 419. *L'Herit. n.* 25. *t.* 9.
Geranium tabulare. *Lin. ſpec.* 947. *ſyſt.* 614. *Reich.* 3. 312.
G. elongatum. *Cavan. diſſ.* 4. 233. *t.* 101. *f.* 3.
Peduncles few-flowered, leaves roundiſh-cordate five-lobed blunt, ſtems decumbent hairy.
8. Pelargonium alchemilloides. *Lady's-mantle-leaved Crane's-bill.*
Ait. hort. kew. 2. 419. *L'Herit. n.* 26.]

[1] Gærtner. [2] Hort. kew.

Geranium alchimilloides. *Lin. ſpec.* 948. *ſyſt.* 614. *Reich.* 3. 313. *vir. cliff.* 67. *hort. cliff.* 345. *upſ.* 197. *Burm. ger.* 55. *Mill. dict. n.* 33. *Knipb. cent.* 9. *n.* 40. *Herm. lugdb.* 282. *t.* 283. *Stiff. bot. t.* 107. *Riv. pent.* 104.

Peduncles four-flowered or thereabouts, leaves orbiculate palmate-gaſhed very hairy, ſtem herbaceous decumbent, ſtigmas ſeſſile.

9. Pelargonium odoratiſſimum. *Sweet-ſcented Crane's-bill.*

Ait. hort. kew. 2. 419. *L'Herit. n.* 28.

Geranium odoratiſſimum. *Lin. ſpec.* 948. *Reich.* 2. 313. *hort. cliff.* 345. *Burm. ger.* 45. *Mill. dict. n.* 34. *Knipb. cent.* 5. *n.* 34. *Dill. elth.* 157. *t.* 131. *f.* 158.

Pedicles five-flowered or thereabouts, leaves roundiſh-cordate very ſoft.

10. Pelargonium groſſularioides. *Gooſeberry-leaved Crane's-bill.*

Ait. hort. kew. 2. 420. *L'Herit. n.* 30.

Geranium groſſularioides. *Lin. ſpec.* 948. *Reich.* 3. 314. *mant.* 432. *Burm. ger.* 53. *Mill. dict. n.* 42. *Herm. lugdb.* 287. *t.* 289. *Riv. pent.* 110.

Peduncles ſubbiflorous ſiliform, leaves cordate roundiſh gaſhed toothed, ſtems very ſmooth.

[11. Pelargonium anceps. *Angular-ſtalked Crane's-bill.*

Ait. hort. kew. 2. 420. *L'Herit. n.* 31.

Umbels many-flowered, flowers in a ſort of head, leaves cordate-roundiſh obſoletely lobed, ſtem three-ſided-angular.

12. Pelargonium althæoides. *Althæa-leaved Crane's-bill.*

Ait. hort. kew. 2. 420. *L'Herit. n.* 39 *t.* 10.]

G. althæoides. *Lin. ſpec.* 949. *ſyſt.* 615. *Reich.* 2. 314. *mant.* 433. *hort. cliff.* 345. *Burm. ger.* 54. *Mill. dict. n.* 43. *Boerh. lugdb.* 1. 263.

Peduncles many-flowered, leaves cordate-ovate ſinuate toothed, the uppermoſt pinnatifid, petals equal to the calyx.

[13. Pelargonium ſenecioides. *Small white-flowered Crane's-bill.*

Ait. hort. kew. 2. 420. *L'Herit. n.* 42. *t.* 11.

Peduncles three-flowered, involucres and calyxes blunt, leaves bipinnatifid-laciniate, ſtem herbaceous.

14. Pelargonium coriandrifolium. *Coriander-leaved Crane's-bill.*

Ait. hort. kew. 2. 421. *L'Herit. n.* 43. *Jacqu. ic. rar.* 528. *collect. ſuppl.* 142.]

Geranium coriandrifolium. *Lin. ſpec.* 949. *Reich.* 3. 315. *mant.* 433. *Cavan. diſſ.* 263. *n.* 390. *t.* 116. *f.* 1. *Mill. dict. n.* 40. *Riv. pent. t.* 108. *Herm. lugdb.* 279. *t.* 280.

β. P. caucalifolium. *Jacqu. ic.* 529. *collect. ſuppl.* 145.

Peduncles ſubtriflorous, corollas ſubtetrapetalous, leaves bipinnate linear, ſtem herbaceous ſmoothiſh.

15. Pelargonium myrrhifolium. *Myrrh-leaved Crane's-bill.*

Ait. hort. kew. 2. 421. *L'Herit. n.* 44.

G. myrrhifolium. *Lin. ſpec.* 949. *ſyſt.* 615. *Reich.* 3. 315. *mant.* 433. *Berg. cap.* 178. *Mill. dict. n.* 36. *Herm. lugdb.* 279. *t.* 281. *Riv. pent.* 102?

Peduncle ſubtriflorous, corollas ſubtetrapetalous, leaves bipinnatifid, the lower ones cordate lobed, ſtem ſomewhat ſtrigoſe.

§. 4. *Shrubby, with a fleſhy or thick ſtem.*

[16. Pelargonium tenuifolium. *Fine-leaved Crane's-bill.*

Ait. hort. kew. 2. 421. *L'Herit. n.* 48. *t.* 12.

Umbels many-flowered, leaves decompoundedly pinnate multifid linear hirſute, ſtem fleſhy, flowering-branches ſlender.

17. Pelargonium carnoſum. *Fleſhy-ſtalked Crane's-bill.*

Ait. hort. kew. 2. 421. *L'Herit. n.* 49.]

G. carnoſum. *Lin. ſpec.* 946. *Reich.* 3. 310. *amoen.* 4. 281. *Burm. ger.* 51. *Mill. dict. n.* 29. *Dill. elth.* 153. *t.* 127. *f.* 154.

Umbels many-flowered, leaves pinnatifid laciniate, petals linear, joints fleſhy-gibboſe.

[18. Pelargonium ceratophyllum. *Horn-leaved Crane's-bill.*

Ait. hort. kew. 2. 422. *L'Herit. n.* 50. *t.* 13. *Curt. magaz.* 315.

Umbels many-flowered, leaves remotely pinnate fleſhy round, ſegments channelled obſoletely trifid.

19. Pelargonium crithmifolium *Sampire-leaved Crane's-bill.*

Smith ic. rar. 13.

Umbels many-flowered panicled, leaves bipinnate fleſhy dilated and jagged at the tips, petals obtuſe, the upper ones criſped at the baſe.

20. Pelargonium gibboſum. *Gouty Crane's-bill.*

Ait. hort. kew. 2. 422. *L'Herit. n.* 51.]

Geranium gibboſum. *Lin. ſpec.* 946. *ſyſt.* 613. *Reich.* 3. 311. *hort. upſ.* 345. *Mill. dict. n.* 30. *Knipb. cent.* 8. *n.* 46.

G. foliis aquilegiæ. *Riv. pent.* 100. *Herm. lugdb.* 284. *t.* 285. *Stiff. bot. t.* 111. *Burm. aſr. t.* 37. *f.* 2. *p.* 96.

Umbels many-flowered, leaves pinnate-pinnatifid-confluent at the tip, joints fleſhy gibboſe.

21. Pelargonium fulgidum. *Celandine-leaved Crane's-bill.*

Ait. hort. kew. 2. 422. *L'Herit. n.* 53.

Geranium fulgidum. *Lin. ſpec.* 945. *Reich.* 3. 307. *vir. cliff.* 67. *hort. cliff.* 498. *Burm. ger.* 52. *Mill. dict. n.* 31. *Dill. elth.* 156. *t.* 130. *f.* 157. *Till. piſ.* 68. *t.* 26.

Umbel twin, leaves three-parted, pinnatifid-gaſhed, middle ſegment very large.

[22. Pelargonium quercifolium. *Great Oak-leaved Crane's-bill.*

Ait. hort. kew. 2. 422. *L'Herit. n.* 54. *t.* 14.

Geranium quercifolium. *Linn. ſuppl.* 306. *ſyſt.* 619. *Cavan. diſſ.* 4. 246. *t.* 119 *f.* 1.

G. terebinthinaceum. *Murr. in comm. gott.* 7. (1785.) 88. *t.* 4.

β. P. quercif. pinnatifidum. *L'Herit. t.* 15. *Small Oak-leaved Crane's-bill.*

Umbels ſubmultiflorous, leaves cordate pinnatifid crenate, ſinuſes rounded, filaments aſcending at the tip.

23. Pelargonium Radula. *Multifid-leaved Crane's-bill.*

Ait. hort. kew. 2. 423. *L'Herit. n.* 55. *t.* 16.

Geranium Radula. *Cavan. diſſ.* 4. 262. *t.* 101. *f.* 1. *Curt. magaz. t.* 95.

G. revolutum. *Jacqu. ic.* 3. *t.* 133. *collect.* 1. 84.

Umbels few-flowered, leaves pinnatifid-laciniate rugged revolute, ſegments linear.

24. Pelargonium graveolens. *Strong ſcented Crane's-bill.*

Ait. hort. kew. 2. 423. *L'Herit. n.* 56. *t.* 17.

Geranium terebinthinaceum. *Cavan. diſſ.* 4. 250. *t.* 114. *f.* 1.

Umbels many-flowered ſubcapitate leaves palmate ſeven-lobed, ſegments oblong blunt crenulate at the edge.

25. Pelargonium papilionaceum. *Butterfly Crane's-bill.*

Ait. hort. kew 2. 423. *L'Herit. n.* 58.]

Geranium papilionaceum. *Lin. ſpec.* 945. *ſyſt.* 613. *Reich.* 3. 308. *hort. cliff.* 345. *upſ.* 197. *Burm. ger.* 49. *Mill. dict. n.* 27. *Knipb. cent.* 7. *n.* 27. *Dill. elth.* 124. *t.* 128. *f.* 155. *Mart. cent. t.* 15.

Umbels many-flowered, leaves roundiſh-cordate angular. corollas papilionaceous, wings and keel minute.

26. Pelargonium inquinans. *Scarlet-flowered Crane's-bill.*

Ait. hort. kew. 2. 425. *L'Herit. n.* 59.

Geranium inquinans. *Lin. ſpec.* 945. *ſyſt.* 613. *Reich.* 3. 307. *hort. upſ.* 195. *cliff.* 345. *Burm. ger. n.* 46. *Mill. dict. n.* 24. *Mill. illuſtr. Knipb. cent.* 3. *n.* 42. *Knorr. del.* 1. *t.* S. 19. *a. Dill. elth.* 151. *t.* 125. *f.* 151. *Mart. cent. t.* 3.

Umbels many-flowered, leaves orbiculate-reniform ſcarcely divided crenate tomentoſe and clammy.

[27. Pelargonium hybridum. *Baſtard Crane's-bill.*

Ait. hort. kew. 2. 424. *L'Herit. n.* 60.

Geranium hybridum. *Lin. mant.* 97. *ſyſt.* 613. *Reich.* 3. 308. *Dill. elth.* 152. *t.* 125. *f.* 152.

Umbels many-flowered, leaves obovate crenate ſmooth fleſhy, petals linear.

28. Pelargonium zonale. *Common Horſe-ſhoe Crane's-bill.*

Ait. hort. kew. 2. 424. *L'Herit. n.* 61.]

Geranium zonale. *Lin. ſpec.* 947. *ſyſt.* 613. *Reich.* 3. 311. *hort. upſ.* 196. *Burm. ger. n.* 43. *Mill. dict. n.* 23. *Comm. prael.* 51. *t.* 1.

Umbels many-flowered, leaves cordate-orbiculate ſcarcely lobed toothed zoned.

[29. Pelargonium heterogamum. *Red-flowered Crane's-bill.*

Ait. hort. kew. 2. 424. *L'Herit. n.* 62. *t.* 18.

*Umbels many-flowered, leaves ſubarbiculate, gaſh-lobed * toothed, ſtem erect ſhrubby.*

30. Pelargonium monſtrum. *Cluſter-leaved Crane's-bill. Ait. hort. kew.* 2. 425. *L'Herit. n.* 63.

Leaves orbiculate-reniform obſoletely lobed complicated curled.

31. Pelargonium bicolor. *Two-coloured Crane's-bill. Ait. hort. kew.* 2. 425. *L'Herit. n.* 64. *Curt. magaz.* 201.

Geranium bicolor. *Lin. ſyſt.* 614. *Jacqu. hort.* 3. 23. *t.* 39. *Cavan. diſſ.* 4. 248. *t.* 111. *f.* 1.

Umbels many-flowered, leaves ternatiſid lobed toothed waved villoſe.

32. Pelargonium vitifolium. *Balm-ſcented Crane's-bill. Ait. hort. kew.* 2. 425. *L'Herit. n.* 65.]

Geranium vitifolium. *Lin. ſpec.* 947. *Reich.* 3. 311. *hort. upſ.* 196. *Burm. ger. n.* 40. *Mill. dict. n.* 26. *Dill. elth.* 152. *t.* 126. *f.* 153.

β. G. vitifolium quinquelobum. *L'Herit. t.* 19.

Flowers in heads, leaves cordate three-lobed ſomewhat rugged, ſtems upright.

33. Pelargonium capitatum. *Roſe-ſcented Crane's-bill. Ait. hort. kew.* 2. 425. *L'Herit. n.* 66.

Geranium capitatum. *Lin. ſpec.* 947. *ſyſt.* 614. *Reich.* 3. 312. *hort. upſ.* 196. *cliff.* 345. *Burm. ger.* 41. *Mill. dict. n.* 25. *Knipb. cent.* 9. *n.* 41. *Herm. lugdb.* 277. *t.* 278. *Riv. pent.* 99.

Flowers in heads, leaves cordate lobed waved ſoft, ſtems diffuſed.

[34. Pelargonium glutinoſum. *Clammy Crane's-bill. Ait. hort. kew.* 2. 426. *L'Herit. n.* 67. *t.* 20. *Curt. magaz.* 143.

Geranium glutinoſum. *Jacqu. ic.* 1. *t.* 131. *collect.* 1. 85.

G. viſcoſum. *Cavan. diſſ.* 4. 246. *t.* 108. *f.* 2. *Scop. inſubr.* 2. 27. *t.* 14.

Umbels few-flowered, leaves cordate haſtate-quinquangular clammy.]

35. Pelargonium cucullatum. *Hooded Crane's-bill. Ait. hort. kew.* 2. 426. *L'Herit. n.* 68.

Geranium cucullatum. *Lin. ſpec.* 946. *ſyſt.* 613. *Reich.* 3. 310. *mant.* 432. *hort. cliff.* 345. *upſ.* 196. *Burm. ger.* 42. *Berg. cap.* 174. *Mill. dict. n.* 21. *Herm. lugdb.* 274. *t.* 275. *Seba muſ.* 1. *t.* 26. *f.* 2. *Riv. pent.* 98. *Knipb. cent.* 7. *t.* 27.

Umbels ſubmultiflorous, leaves kidney-form cowled toothed.

36. Pelargonium anguloſum. *Marſh-mallow-leaved Crane's-bill. Ait. hort. kew.* 2. 426. *L'Herit. n.* 69.

Geranium anguloſum. *Mill. dict. n.* 22. *Dill. elth.* 155. *t.* 129. *f.* 156. *Mart. dec.* 3. *t.* 28.

G. acerifolium. *Cavan. diſſ.* 4. 243. *t.* 112. *f.* 2.

Umbels many-flowered, leaves rounded cowled angular toothed.

[37. Pelargonium acerifolium. *Maple-leaved Crane's-bill. Ait. hort. kew.* 2. 427. *L'Herit. n.* 70. *t.* 21.

Umbels five-flowered or thereabouts, leaves palmate-five-lobed ſerrate wedge-ſhaped at bottom undivided.

38. Pelargonium cordatum. *Heart leaved Crane's-bill. Ait. hort. kew.* 2. 427. *L'Herit. n.* 71. *t.* 22.

P. cordifolium. *Curt. magaz.* 165.

Geranium cordifolium. *Cavan. diſſ.* 4. 240. *t.* 117. *f.* 3.

α. Leaves undivided very ſoft flat.

β. *Cut-leaved heart-leaved Crane's-bill.*

Leaves laciniated curled.

Umbels many-flowered, leaves cordate acute toothed, lower petals linear acute.

39. Pelargonium echinatum. *Prickly-ſtalked Crane's-bill. Curt. magaz.* 309.

Stem fleſhy, ſtipules ſpineſcent, leaves cordate-roundiſh from three to five-lobed, flowers umbelled, umbels ſeven or eight-flowered.

40. Pelargonium tetragonum. *Square ſtalked Crane's-bill. Ait. hort. kew.* 2. 427. *L'Herit. n.* 72. *t.* 23. *Curt. magaz.* 136.

Geranium tetragonum. *Linn. ſuppl.* 305. *ſyſt.* 619. *Jacqu. ic.* 1. *t.* 132. *collect.* 1. 92. *Scop. inſubr.* 1. 12. *t.* 5. (trigonum). *Cavan. diſſ.* 4. 231. *t.* 99. *f.* 2.

Peduncles two-flowered, branches four-cornered fleſhy, corollas four-petalled.

41. Pelargonium peltatum. *Peltated Crane's-bill. Ait. hort. kew.* 2. 427. *L'Herit. n.* 73.]

Geranium peltatum. *Lin. ſpec.* 947. *ſyſt.* 613. *Reich.* 3. 311. *hort. cliff.* 345. *Burm. ger.* 48. *Mill. dict. n.* 32. *fig. t.* 140. *Knipb. cent.* 6. *n.* 43. *Comm. præl.* 52. *t.* 2. *Curt. magaz.* 20. *Raii hiſt.* 3. 514. *n.* 38.

Umbels few-flowered, leaves five-lobed quite entire fleſhy peltated, branches angular.

[42. Pelargonium lateripes. *Ivy-leaved Crane's-bill. Ait. hort. kew.* 2. 428. *L'Herit. n.* 74. *t.* 24.

Umbels many-flowered, leaves cordate five-lobed ſomewhat toothed fleſhy, branches round.

43. Pelargonium cortuſæfolium. *Cortuſa-leaved Crane's-bill.*

Ait. hort. kew. 2. 428. *L'Herit. n.* 75. *t.* 25. *Jacqu. ic.* 539. *collect. ſuppl.* 134.

Umbels many-flowered, leaves cordate gaſh-lobed waved bluntly toothed, ſtipules awl-ſhaped.

44. Pelargonium craſſicaule. *Thick-ſtalked Crane's-bill. Ait. hort. kew.* 2. 428. *L'Herit. n.* 77. *t.* 26.

Umbels many-flowered, leaves kidney-form obcuminate, ſtem fleſhy branched even.

45. Pelargonium cotyledonis. *Hollyhock-leaved Crane's-bill.*

Ait. hort. kew. 2. 428. *L'Herit. n.* 81. *t.* 27.

Geranium cotyledonis. *Linn. mant.* 569. *ſyſt.* 614. *Reich.* 3. 313.

Umbels compound, leaves cordate peltate wrinkled, ſtem fleſhy.

§. 5. *Shrubby, with a woody ſtem.*

46. Pelargonium ovale. *Oval-leaved Crane's-bill. Ait. hort. kew.* 2. 429. *L'Herit. n.* 83. *t.* 28.

P. Oenotheræ. *Jacqu. ic. rar.* 525.

Geranium ovale. *Burm. cap.* 19.

G. ovatum. *Cavan. diſſ.* 4. 238. *t.* 103. *f.* 3. *Jacqu. collect.* 2. 355.

Umbels few-flowered, pedicels elongated, leaves elliptic toothed, ſtems biſpute.

47. Pelargonium betulinum. *Birch-leaved Crane's-bill. Ait. hort. kew.* 2. 429. *L'Herit. n.* 84. *Curt. magaz.* 148.]

Geranium betulinum. *Lin. ſpec.* 946. *ſyſt.* 613. *Reich.* 3. 309. *Burm. ger. n.* 38. *Berg. cap.* 175. *Mill. diſſ. n.* 43. *Burm. afr.* 86, 87. *t.* 33. *f.* 1, 2. *Raii ſuppl.* 513. 22. *Pluk. mant.* 1. 415. *f.* 3.

Umbels few-flowered, leaves ovate unequally ſerrate lobe-gated.

[48 Pelargonium glaucum. *Spear-leaved Crane's-bill. Ait. hort. kew.* 2. 429. *L'Herit. n.* 89. *t.* 29.

Geranium glaucum. *Linn. ſuppl.* 306. *ſyſt.* 614.

G. lanceolatum. *Cavan. diſſ.* 4. 235. *t.* 102. *f.* 2. *Curt. magaz.* 56.

Pedunc'es two-flowered, leaves lanceolate quite entire acuminate glaucous.

49. Pelargonium tricuſpidatum. *Three-pointed Crane's-bill. Ait. hort. kew.* 2. 430. *L'Herit. n.* 90. *t.* 30. *Jacqu. collect. ſuppl.* 139.

Peduncles two-flowered, leaves three-pointed, middle lobe more produced ſubſerrate, midrib muricated underneath.

50. Pelargonium acetoſum. *Sorrel Crane's bill. Ait. hort. kew.* 2. 430. *L'Herit. n.* 97. *Curt. magaz.* 103.]

Geranium acetoſum. *Lin. ſpec.* 947. *Reich.* 3. 308. *hort. cliff.* 345. *Burm. ger.* 47. *Mill. dict. n.* 28. *Knipb. cent.* 11. *n.* 28. *Comm. præl.* 53. *t.* 4.

Umbels few-flowered, leaves obovate crenate ſmooth fleſhy, petals linear.

[51. Pelargonium ſcabrum. *Rough-leaved Crane's-bill. Ait. hort. kew.* 2. 430. *L'Herit. n.* 99. *t.* 31.

Geranium ſcabrum. *Lin. ſpec.* 946. *Reich.* 3. 309. *amœn.* 4. 281. *Burm. ger.* 39. *Jacqu. ic. rar.* 3. *collect.* 2. 327.

Umbels few-flowered, leaves wedge-ſhaped ſemitrifid rugged, lobes lanceolate looſely ſerrate.

52. Pelargonium criſpum. *Curled-leaved Crane's-bill. Ait. hort. kew.* 2. 430. *L'Herit. n.* 100. *t.* 32, 33.

Geranium criſpum. *Lin. mant.* 257. *ſyſt.* 613. *Reich.* 3. 309. *Berg. cap.* 176.

G. hermanniæfolium. *Linn. ſuppl.* 305.

Peduncles ſubbifloreous, leaves doubly cordate three-lobed curled muricated.

53. Pelargonium

53. Pelargonium adulterinum. *Hoary-trifid-leaved Crane's-bill.*
Ait. hort. kew. 2. 431. *L'Herit. n.* 103. *t.* 34.
Peduncles subbiflorous, leaves cordate three-lobed waved villose soft.

54. Pelargonium exſtipulatum. *Soft-leaved Trifid Crane's-bill.*
Ait. hort. kew. 2. 431. *L'Herit. n.* 107. *t.* 35.
Geranium exſtipulatum. *Cavan. diſſ.* 4. 253. *diſſ.* 5. 271. *t.* 123. *f.* 1.
Umbels few-flowered, leaves cordate three-parted-lobed toothed hoary, ſtipules ſcarcely any.

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55. Pelargonium ternatum. *Ternate Crane's-bill.*
Lin. ſuppl. 306. *Cavan. diſſ.* 4. 255. *t.* 107. *f.* 2. *Curt. magaz.* 413. *Jacqu. ic. rar.* 544. *collect. ſuppl.* 135.
Stem ſhrubby biſpid, leaves oppoſite ternate, leaflets wedge-ſhaped gaſh-trifid ſerrate ſcabrous.

56. Pelargonium tricolor. *Three-coloured Crane's-bill.*
Curt. magaz. 240.
P. violaceum. *Jacqu. ic. rar.* 527. *collect. ſuppl.* 129.
The two upper petals rugged at the baſe with prominent ſhining dots.

57. Pelargonium carneum. *Fleſh-coloured Crane's-bill.*
Jacqu. ic. rar. 3. 512. *collect.* 4. 189.
Stemleſs; root rapaceous ſimple; leaves bipinnate, pinnules gaſhed ſmoothiſh; five filaments fertile.

58. Pelargonium barbatum. *Bearded Crane's-bill.*
Jacqu. ic. rar. 3. 513. *collect.* 4. 196.
Stemleſs; root rapaceous ſimple; leaves pinnate; pinnas pinnatifid, lanceolate-linear, acute, bearded at the tip; five filaments fertile.

59. Pelargonium melananthon. *Dark-flowered Crane's-bill.*
Jacqu. ic. rar. 514. *collect.* 4. 188.
Stemleſs; root rapaceous ſimple; leaves pinnate ſomewhat biſpid, pinnas lobe-gaſhed blunt; five filaments fertile.

60. Pelargonium triphyllum. *Three-leaved Crane's-bill.*
Jacqu. ic. rar. 515. *collect.* 4. 199.
Stemleſs; root rapaceous ſimple; leaves ternate crenate ſmooth; five filaments fertile.

61. Pelargonium heterophyllum. *Various-leaved Crane's-bill.*
Jacqu. ic. rar. 516. *collect.* 4. 197.
Stemleſs; root rapaceous ſimple; leaves ternate and entire ſmooth ciliate, leaflets often lobed; five filaments fertile.

62. Pelargonium nervifolium. *Nerve-leaved Crane's-bill.*
Jacqu. ic. rar. 517. *collect.* 4. 198.
Stemleſs; root rapaceous ſimple; leaves ternate three-lobed and entire many-nerved ſmooth prickly-ciliate at the edge; five filaments fertile.

63. Pelargonium longifolium. *Long-leaved Crane's-bill.*
Jacqu. ic. rar. 518. *collect.* 4. 192. *Cavan. diſſ.* 235. *t.* 102. *f.* 1. *Burm. ger. n.* 67. *t.* 2.
Stemleſs; root rapaceous ſimple; leaves lanceolate acute ſmooth, the older ones often pinnate; four filaments fertile.

64. Pelargonium ciliatum. *Ciliated Crane's-bill.*
Jacqu. ic. rar. 519. *collect.* 4. 195.
Stemleſs; root rapaceous ſubſimple; leaves lanceolate acute at both ends, ciliate, ſmooth underneath, hairy above, often appendiculed; five filaments fertile.

65. Pelargonium depreſſum. *Flat-umbelled Crane's-bill.*
Jacqu. ic. rar. 520. *collect.* 4. 193.
Stemleſs; root rapaceous ſimple; leaves narrow lanceolate acute ſmooth; umbels finally depreſſed ſmooth; four filaments fertile.

66. Pelargonium longiflorum. *Long-flowered Crane's-bill.*
Jacqu. ic. rar. 521. *collect.* 4. 194.
Stemleſs; root rapaceous ſimple; leaves lanceolate acute ſmoothiſh; petals very long; four filaments fertile.

67. Pelargonium charnædryfolium. *Germander-leaved Crane's-bill.*
Jacqu. ic. rar. 523. *collect. ſuppl.* 130.
Peduncles one or two-flowered, ſtems herbaceous decumbent, leaves oblong blunt ſerrate villoſe, five filaments fertile.

68. Pelargonium trichoſtemon. *Hairy-ſtamened Crane's-bill.*
Jacqu. ic. rar. 524. *collect. ſuppl.* 131.
Peduncles few-flowered, leaves roundiſh-ovate bluntly ſerrate velvety, ſtem biennial almoſt erect, filaments birſute, five fertile.

69. Pelargonium coronopifolium. *Buck's-horn Plantain-leaved Crane's-bill.*
Jacqu. ic. rar. 526. *collect. ſuppl.* 132.
Peduncles two-flowered, leaves lanceolate-linear toothed-ſerrate, ſmooth above, ſomewhat rough-haired underneath.

70. Pelargonium bullatum. *Bladder-leaved Crane's-bill.*
Jacqu. ic. rar. 530. *collect. ſuppl.* 124.
Peduncles two-flowered, corollas four-petalled, ſtem biennial, leaves ternate, pinnotifidly lobed, ſomewhat biſpid on both ſides, five filaments fertile.

71. Pelargonium betonicum. *Betony-leaved Crane's-bill.*
Jacqu. ic. rar. 531. *collect. ſuppl.* 127. *Cavan. diſſ.* 264. *n.* 391. *t.* 118. *f.* 1?
Geran. afr. fol. betonicæ. *Riv. pent. t.* 101.
Peduncles few-flowered, corollas four-petalled ſeldom five-petalled, ſtem biennial, leaves pinnatifidly lobed ſomewhat rough-haired, five filaments ſertile.

72. Pelargonium lacerum. *Jagged-leaved Crane's-bill.*
Jacqu. ic. rar. 532. *collect. ſuppl.* 122.
Peduncles five-flowered, corollas five-petalled, ſtem biennial hairy, leaves pinnate-lobed gaſhed, five filaments fertile.

73. Pelargonium longicaule. *Long-ſtalked Crane's-bill.*
Jacqu. ic. rar. 533. *collect. ſuppl.* 125.
Peduncles from one to five-flowered, corollas four-petalled ſeldom five-petalled, ſtem biennial birſute, leaves pinnate-lobed, ſeven filaments fertile.

74. Pelargonium multicaule. *Many-ſtalked Crane's-bill.*
Jacqu. ic. rar. 534. *collect. ſuppl.* 126.
Peduncles five-flowered or thereabouts, corollas four-petalled, ſtem biennial ſmooth, leaves pinnate-lobed ſmooth, ſeven filaments ſertile.

75. Pelargonium anemonæfolium. *Anemone-leaved Crane's-bill.*
Jacqu. ic. rar. 535. *collect. ſuppl.* 123.
Geranium aft. fol. anemones. *Riv. pent.* 102.
Peduncles four or five-flowered, corollas five-petalled, ſtem biennial, leaves pinnate-lobed ſomewhat rough-haired underneath, ſmooth above, ſeven filaments fertile.

76. Pelargonium hirtum. *Rough-haired Crane's-bill.*
Jacqu. ic. rar. 536. *collect. ſuppl.* 144.
Geranium hirtum. *Burm. ger.* 48. *n.* 64. *t.* 1. *Cavan. diſſ.* 258. *n.* 379. *t.* 117. *f.* 1.
Umbels five-flowered or thereabouts, leaves tripinnate birſute, pinnules linear, ſtem fleſhy.

77. Pelargonium tomentoſum. *Downy Crane's-bill.*
Jacqu. ic. rar. 537. *collect. ſuppl.* 140.
Umbels many-flowered ſimple and compound, leaves cordate moſtly five lobed ſerrate tomentoſe very ſoft, ſtem fleſhy.

78. Pelargonium ribiſolium. *Currant-leaved Crane's-bill.*
Jacqu. ic. rar. 538. *collect. ſuppl.* 141.
Umbels many-flowered depreſſed ſomewhat halved, leaves cordate three-lobed ſerrate ſomewhat birſute, lobes lobed gaſhed, ſtem fleſhy.

79. Pelargonium ſulcatum.
Jacqu. ic. rar. 540. *collect.* 4. 186.
Umbels four-flowered, leaves cordate-roundiſh moſtly five-lobed acutely ſerrate ſmoothiſh, ſtipules ovate, ſtem ſhrubby erect, when young rugged.

80. Pelargonium patulum.
Jacqu. ic. rar. 541. *collect.* 4. 187.
Peduncles two-flowered, leaves ſomewhat kidney-ſhaped lobe-gaſhed acutely crenate ſmooth above, ſtem ſhrubby, ſix filaments fertile.

81. Pelargonium balſameum.
Jacqu. ic. rar. 543. *collect. ſuppl.* 136.
Umbels few-flowered, leaves five-parted ſomewhat rough-haired, lobes lanceolate acute gaſhed ſomewhat rigid, ſtem ſhrubby.

82. Pelargonium hermanniæfolium.
Jacqu. ic. rar. 545. *collect. ſuppl.* 137.
Geranium herm. *Lin. ſyſt.* 613. *mant.* 569. *Berg. cap.* 177.
Peduncles two-flowered, leaves cuneate-roundiſh gaſhed rough-haired rigid diſtich, ſtem ſhrubby.

DESCRIPTIONS, &c.

These plants are natives of Africa, moſt of them from that inexhauſtible ſtore of curious, elegant and rare vegetables, particularly ſuch as are ſhrubby, or inclined to ſhrubbineſs, the Cape of Good Hope.

The diſtinctions between this genus and thoſe of *Erodium* and *Geranium*, into which the natural genus or family of *Geranium* is now divided, may be ſeen under the eſſential characters of the reſpective genera; and the reaſons for the modern diviſion, together with the circumſtances of agreement in the ſeveral branches of this natural family, are given under *Geranium*.

Erodium having by an overſight been omitted in its proper place is introduced at the end of letter E, with *Erotium* and *Erwum*.

1. Root turbinate, perpendicular, at the upper part thickened and imbricate as it were with red ſtipules. Stem none, except peduncles or ſcapes, on which there is one leaf near the origin of the umbels. Root-leaves numerous, ſome ovate almoſt entire, others laciniate and as it were pinnate, and all petioled. Stipules oblong, faſtened to the baſe of the petiole, biſid. Flowers umbelled; ſcape radical, two inches high, and divided into three or more pedicels; involucres many-leaved, acute, hairy; rays from ten to twelve, very ſhort. Calycine ſegments acute, reflex. Corolla ſmall, papilionaceous, pale in dried ſpecimens, but according to Burman, dark purple. Capſules five, ſhort, tomentoſe: the beak ſcarcely half an inch in length [a].

Introduced in 1788, by Mr. Francis Maſſon. It flowers in march [a].

2. Root thick, yelloviſh, deſcending, having few fibres. Stem ſcarcely any, except the ſcapes, which have ſometimes leaves ſometimes none. Leaves long, often with an odd leaflet: leaflets about ſixteen, ſubſeſſile, ovate-acute, aſh-coloured. Scape longer than the leaves: involucre many-parted, with ovate-acute parts; rays half an inch long, commonly ſix. Calyx deeply five-parted, the upper ſegment wider. Corolla papilionaceous, reddiſh white with deeper-coloured veins [b].

Introduced in 1788, by Maſſon. It flowers in april [b].

3. Root fleſhy, two inches thick and more, conſiſting of ſeveral irregular tubers, and frequently half a foot in width, white within, purple on the outſide, covered with a browniſh bark, and perennial. Root-leaves ſtipuled at the baſe, very many, hairy all over and ciliate, from ſix inches to a foot and more in length, ſcarcely two inches wide, petioled, bipinnate; the lower alternate, the upper oppoſite; pinnules lanceolate-linear, trifid, biſid and ſimple, acute. Umbel compound: common ſcape round, ſhort, hirſute: partial ſcapes ſeveral, ſomewhat hirſute and upright, commonly longer than the leaves: univerſal involucre conſiſting of many lanceolate, acute, hairy, ciliate, ſhort leaflets; and a few others, like the root-leaves, but much ſhorter: leaflets of the partial involucre lanceolate, acute, hirſute alſo and ciliate. Rays of the umbels or peduncles compreſſed, villoſe, an inch long. Flowers without ſcent. Calyx ſilky and ciliate, green. Petals at firſt whitiſh, but afterwards roſe-coloured; the two upper ones having blood-red ſpots at their baſe. Filaments pale; anthers deep purple. Germ villoſe, ending in a ſilky ſtyle; ſtigma purple [c].

Introduced in 1788 by Maſſon. It flowers here in april [c].

4. This has tuberous roots, from which come out three or four broad leaves, divided into ſeveral lobes, like a vine-leaf, ſpreading flat on the ground, crenated, on ſhort foot-ſtalks. Peduncles immediately from the root, about a foot high, naked, terminated by a bunch of dark-purple flowers, having long tubes, ſeſſile, and having a very agreeable odour in the evening.

[Cultivated in 1739, in the botanic garden at Chelſea. It flowers in july and auguſt [d].]

5. Root thick, roundiſh, tuberous, with ſeveral hairy leaves ſpringing from it, which are finely divided, almoſt like thoſe of the Garden Carrot, they ſpread near the ground, and among them come out the ſtalks, about a foot high, having two or three leaves of the ſame ſort, but ſmaller and ſitting cloſe: from the ſtalks ariſe two or three naked peduncles, terminated by a bunch of yelloviſh flowers, marked with dark-purple ſpots, which ſmell very ſweet after the ſun has left them.

[It was introduced before 1632, by Mr. John Tradeſcant, ſenior [e]. Johnſon ſaw it in flower about the end of july 1632, being the firſt time that it flowered with the owner [e].

6. This is a rough-haired plant. The leaves are multifid, like thoſe of Carrot. The two upper petals are aſcending; the middle ones concave, converging, incloſing the fifth petal [f].

Root tuberous: tubers oblong, gibbous, almoſt half an inch thick; ſkin of a deep brown colour; they become ſlender at bottom, and put out there many fibres. Stems ſeveral. Leaves ſpreading much or horizontal, often a ſpan long, petioled, pale green, ſmelling ſweet when handled, covered with very ſpreading, long diſtant hairs on both ſides, interruptedly and alternately tripinnate; leaflets pinnatifid, with acute, ſegments, often toothed, reflex; the lateral pinnas turned up: the bottom leaves are fewer, ſmaller, ſmoother, with wider ſegments; but the greater number are larger, more hairy, and have narrower ſegments. Petiole round, gibbous at the baſe, embracing, hairy, leaflets on a fourth part of it. At the baſe of the petioles and peduncles is a ſingle, triangular, ſhrivelling ſtipule. Peduncle obliquely aſcending, gibbous at the baſe, covered with longer thicker hairs than the other parts, ſuſtaining nine or ten flowers. Pedicels umbelled, divaricating, jointed not far from the baſe, compreſſed a little, ſwelling towards the top, two inches long, pubeſcent, ſupported by a many-leaved involucre; the leaflets lanceolate, ſhrivelling. Calycine ſegments linear, pubeſcent, reflex. Corolla ſtraw-white; petals wedge-ſhaped, ſlightly emarginate, at firſt flat, afterwards reflex; the two upper ones wider with an oblong purple ſpot; the three lower narrower with two purple diverging ſtreaks [g].

Cultivated in the Apothecaries garden at Chelſea in 1724. It flowers from july to ſeptember [g].

7. Stems proſtrate, ſtrigoſe or hiſpid, annual at the upper part. Leaves like thoſe of Alchemilla, naked but rough-haired at the edge, with the umbilicus contracted and purple. Peduncles very long, even. Flowers purple. It reſembles G. zonale, but the greateſt part of the ſtem periſhes above the root [h].

Cavanilles deſcribes it under the name of Geranium elongatum. Stem hardiſh, hiſpid, round, branched, proſtrate. Leaves oppoſite, and next the flowers ſimple, an inch and half in diameter, roundiſh-five-lobed, tooth-crenate, rugged, ſometimes glaucous, with a blackiſh or ruſeſcent zone: petioles half a foot long and more, ſometimes tinged with red. Stipules lanceolate, reflex. Common pedunle oppoſite to a leaf, upright, the length of the leaves; involucre commonly four-leaved; the leaflets acute: rays one, two or three, half an inch long, drooping when in fruit. Calyx oblong, divided deeply into five ciliate ſegments, ending in a very acute point: the upper ſegment wider, erect; the reſt from ſpreading reflex, and afterwards preſſed cloſe to the fruit: ſtreaks ten, not very conſpicuous. Corolla papilionaceous, yellow, twice as long as the calyx, with the upper petals wider, reflex, emarginate; the reſt linear. Anthers crimſon. Germ ſmall, five-cornered: ſtyle tomentoſe, green: ſtigmas reflex. Capſules very acute at the baſe: awn an inch and half long, bearded white. Seeds ruſeſcent.—It varies with a biennial ſtem, unſpotted leaves, more deeply lobed, and the common peduncles more than a foot long [i].

Introduced in 1775, by Maſſon. It flowers during the greater part of the ſummer [i].]

8. This ſends out ſeveral herbaceous ſtalks about a foot and half in length. Flowers pale bluiſh-colour, ſeveral together upon very long peduncles. There is a ſucceſſion of them during all the ſummer months, and the

[a] Cavanilles. [b] Hort. kew. [c] Cavanilles. [d] Hort. kew. [e] Jacquin. [f] Hort. kew. [g] Idem. [h] Hort. kew. [i] Gen. cmac. [k] Linn. mant. [l] Murray. [m] Hort. kew. [n] Linn. [o] Cavanilles. [p] Hort. kew.

ſeeds

ſeeds ripen about a month after the flowers are fallen. There is a variety of it, with a dark circle in the middle of the leaves.

[Cultivated in 1693, by Mr. Jacob Bobart[t].]

9. This has a very ſhort fleſhy ſtalk, dividing near the ground into ſeveral heads, each having many leaves, on ſeparate foot-ſtalks from the heads; they are ſoft and downy, and have a ſtrong ſcent like Aniſeed. From theſe heads come out ſeveral ſlender ſtalks, near a foot in length, proſtrate, with rounder leaves than thoſe near the root, but of the ſame texture and odour. The flowers are produced from the ſide of theſe ſtalks, three, four or five ſtanding together upon ſlender peduncles, they are white, and being ſmall make little appearance.

[It was cultivated in 1724, in the botanic garden belonging to the Apothecaries Company at Chelſea, and flowers during moſt part of the ſummer[f].

10. Stem proſtrate, four-cornered, ſmooth; as is alſo the whole plant. Leaves marked with lines. Peduncles capillary, with two or three ſmall flowers, of a pale fleſh-colour. Anthers four[g].]

This is a biennial plant, ſending out a great number of very ſlender trailing ſtalks, extending a foot and half in length. Leaves ſmall. Flowers on ſhort ſlender peduncles, coming out at every joint from the ſide of the ſtalks; they are very ſmall, and of a red-diſh colour, ſingle or ſometimes two or three together. They continue in ſucceſſion all the ſummer, and the ſeeds ripen in about five weeks after the flowers decay.

[Cultivated in 1731, by Mr. Miller[h].

11. Introduced by Mr. Francis Maſſon in 1788. It flowers here in may[i].

12. Plant depreſſed, wholly ſubtomentoſe. Petals the length of the calyx, dark purple on the outſide with a white edge, red within: the two upper ones with blood-red dotted ſtreaks at the baſe[k].

Branches long, ſimple, filiform, wrinkled, purple. Leaves petioled, ſhort, oppoſite, hirſute, odorous. Peduncles axillary, longer than the petioles, erect, ſupporting five or ſix, ſmall, irregular flowers. Calyxes hirſute. Beaks very ſhort[l].

Cultivated in the botanic garden at Chelſea in 1724[m].

13. This is an annual plant; introduced in 1775 by Mr. Fr. Maſſon. It flowers in june and july[n].]

14. This is an annual [or rather biennial] plant, with branching ſtalks near a foot high. The lower leaves ſtand upon long foot-ſtalks, but thoſe on the upper part ſit cloſe to the ſtalks. The flowers ſtand upon naked peduncles, which proceed from the ſide of the ſtalks, on the ſide oppoſite to the leaves: they grow three or four together upon ſhort ſeparate pedicels: the corolla is papilionaceous; the two upper petals, which are large, forming a kind of ſtandard, the three lower ones narrow and bent downwards; they are of a pale fleſh-colour, appear in july, and the ſeeds ripen in ſeptember; ſoon after which the plants decay.

[Linneus remarks, that the diſk of the leaf becomes browniſh, as in the next ſpecies; and that the anthers are five or ſeven.

It was cultivated in the Chelſea garden in 1724, and flowers from march to ſeptember[o].

15. Stem herbaceous, ſpreading a little, ſubpubeſcent. Leaves ternate, gaſhed, ſubſerrate, marked with lines, having almoſt upright hairs ſcattered over them, and a broad brown ſpot in the diſk; the middle leaflet wider and ſemipinnatifid. Two ſegments of the calyx have three nerves, two have one nerve, and one has two nerves. Petals four (the loweſt being wanting) pale fleſh-colour; the upper ones with purple veins. Anthers five, the alternate ones being barren[p].]

Root knobbed, tuberous, like *P. triſte*, from which come out ſeveral pretty large leaves, compoſed of many lobes, ſet along the midrib; they are narrow at the baſe, but are very much enlarged at their ends, which are rounded, and cut all along their ſide and top into many acute points. The peduncles ariſe immediately from the root, and ſometimes have one or two ſmall leaves towards the bottom, where they often divide into two naked peduncles, each terminated by a bunch of pale reddiſh flowers, which ſmell ſweet at night.

[Cultivated by Mr. Miller in 1731. It flowers from may to auguſt, and is ſomewhat ſhrubby[q].

16. Introduced in 1768, by Mr. William Malcolm. It flowers moſt part of the ſummer[r].

17. This has a thick fleſhy knotted ſtalk, riſing about two feet high, ſending out a few ſlender fleſhy branches, thinly ſet with leaves, which on the lower part of the ſtalk are petioled, but above are ſeſſile. The flowers are produced in ſmall cluſters at the ends of the branches: the petals are narrow and white, making no great appearance; they continue in ſucceſſion moſt part of the ſummer.

[Cultivated in Chelſea garden in 1724[s].

18. Native of the South-weſt coaſt of Africa. Introduced in 1786, by Mr. Anthony Hove. It flowers in may[t]; and continues to do ſo during moſt of the ſummer months: the ſeeds ripen here[u].

19. Root perennial. Stem a foot or two in height, nearly erect, ſimple, ſwelled, round, glaucous, ſmooth, leafy, flowering at the top. Leaves ſcattered, much ſpreading, glaucous, ſmooth: leaflets alternate, wedge-ſhaped, irregularly cut, and ending in ſharp teeth: foot-ſtalks round. Stipules in pairs, ſmall, acute, membranous, brown. Panicles one or more at the top of the ſtem, alternately ſuperdecompound, ending in numerous umbels of from three to five flowers. Peduncles and pedicels round, a little fleſhy, ſlightly downy. Bractes ſolitary or in pairs at each diviſion of the panicle, ſmall, ovate, acute, concave, membranous, brown. Involucres about five at the baſe of each umbel, ſhaped like the bractes, but leſs acute, ciliated on the margin, reflexed. Flowers very numerous, inodorous, rather elegant than ſplendid. Calyx-leaves blunt iſh, membranous at the edge, ſlightly downy at the tip, bent back in the middle; the uppermoſt a little broader, ending in a honey-bearing tube of its own length, and about one fifth of the length of the pedicel with which it is connected. Petals all of an equal length, white; the two upper ones criſped on each ſide at their baſe, and ſpotted with purple. Five filaments half as long as the other five, and deſtitute of anthers; the five fertile ones being ſcarcely ſo long as the petals, declining, the uppermoſt rather ſhorter than the reſt. Anthers large, incumbent, ſcarlet. Germ roundiſh, ſmall, with five furrows, clothed with thick down. Style ſtraight, ſcarcely ſo long as the fertile ſtamens, very woolly towards the baſe, perfectly ſmooth above. Stigmas blunt iſh, red.

This ſpecies is allied to the preceding, but appears to be diſtinct, on account of the dilated, pointed, and not obtuſe, diviſions of the leaves; more eſpecially from the criſping and waving of the upper petals, and all of them being obtuſe; not to mention its panicled (not ſolitary) umbels.

It flowered in april 1792, at the Marchioneſs of Rockingham's; to whom the ſeeds, brought by Captain Riou of the Guardian, were given by the Rev. Mr. Spragg[v].]

20. This has a round fleſhy ſtalk with ſwelling knots at the joints, riſing about three feet high, and ſending out ſeveral irregular ſmooth branches. Leaves thinly diſpoſed, ſmooth, fleſhy, gray, ending obtuſely, and ſtanding on ſhort foot-ſtalks. Flowers four or five on a peduncle. Petals dark-purple, broader than in *carnoſum*, and having a very agreeable ſcent in the evening.

[Cultivated in the Chelſea garden in 1712. It flowers moſt part of the ſummer[w].]

21. This has a fleſhy ſtalk, which ſeldom riſes a foot high, and puts out very few branches. Leaves ſmooth, light green. Peduncles ſhort, having at the top two or three flowers, with unequal petals of a deep ſcarlet colour. The leaves fall off, and the ſtalks being deſtitute of them for three or four months in ſum-

[a] Hort. kew. [b] Hort. kew. [c] Burm. [d] Idem. [e] Linn. mant. [f] Idem. [g] Idem. [h] Idem. [i] Linn. mant. [k] Idem. [l] Hort. kew. [m] Idem. [n] Linn. mant. [o] Idem. [p] Linn. mant. [q] Hort. kew. [r] Idem. [s] Curtis. [t] Idem. [u] Smith. [v] Idem. [w] Hort. kew.

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mer, appear as if they were dead, but in autumn they put out freſh leaves again.

[Cultivated in 1731, in the garden of James Sherard, M. D. at Eltham. It flowers during moſt part of the ſummer[a].

22. Stem ſhrubby, twiſted, branched, more than four feet high. Leaves oppoſite, often ſhorter than the petioles, oblong, with deep rounded ſinuſes; lobes oblique, wider above, roundiſh, crenate. Stipules ſhort, wide, half embracing, ſhrivelling. Peduncles axillary, ſolitary, longer than the petioles: involucre one-leafed, divided into ſix or ſeven ovate concave ſegments, rays commonly ſix, half an inch long. Calyx oblong-ovate, with the ſegments reflex. Anthers ſaffron-coloured, ſomewhat oblong[b]. There are two varieties, larger and ſmaller. Introduced in 1774 by Maſſon. It flowers from march to auguſt[b].

23. Stem ſhrubby, covered with an aſh-coloured bark, branched, two feet high. Leaves numerous, alternate, nearly equal to the petioles, very deeply five-cleft; the ſegments pinnate and bipinnate, linear. Stipules wide, acuminate and ſhrivelling. Peduncles axillary, ſolitary, with one, two or three flowers: involucre generally five-cleft, ſhrivelling. Calyx ovate-oblong, pubeſcent, cut deeply into five ovate ſegments. Corolla papilionaceous, roſe-coloured with red lines; the claws white; the two upper petals reflex and wider. Anthers deep-fleſh-coloured. Germ very ſmall, ovate-pentagon; ſtigmas villoſe, purple, revolute. Capſules villoſe, acute at the baſe: awn or tail bearded, twiſted, near four lines in length. The whole plant has a ſtrong ſmell of turpentine. The leaves in young plants are often three inches long; but in old ones only one third of the ſize and more numerous[c].

It takes the name *Radula*, from the rough raſp-like ſurface of its leaves. There are two varieties of this, as of the preceding, a larger and a ſmaller: and as it is readily raiſed from ſeeds, it affords many ſeminal varieties. The caſe is the ſame in other ſorts; inſomuch that we may hereafter find it difficult to reduce theſe plants to their proper ſpecies[d].

It was introduced by Maſſon in 1774; and flowers from march to july[e].

24. Stem arboreſcent, a fathom in height, branched; the tender branches pubeſcent. Leaves alternate, but ſometimes oppoſite, ſmooth underneath and whitiſh, above deep-green. Stipules wide, emarginate or acuminate, ſhrivelling. Peduncles ſolitary, oppoſite to the leaves, longer than the petiole: involucre five-leaved; rays about five. Calyx deeply cut into five ſegments, ſomewhat bent back. Corolla papilionaceous, pale purple, with deeper lines on the upper petals, which are wider and reflex. Seven of the filaments have anthers. The plant has a ſtrong ſmell, which varies, and reſembles turpentine, or lemon or roſes[f].

It was introduced by Maſſon in 1774, and flowers from march to july[g].]

25. This riſes with an upright ſhrubby ſtalk ſeven or eight feet high, ſending out ſeveral ſide branches, with large, angular, rough leaves, on ſhort foot-ſtalks. The flowers are produced in large panicles (umbels) at the end of the branches: the two upper petals, which are pretty large, turn upwards, and are finely variegated; but the three under ones are very ſmall, and being bent back, are ſcreened from ſight, unleſs the flower be viewed near.

[It was cultivated in the botanic garden at Chelſea in 1724: and flowers from april to july[h].]

26. This riſes with a ſoft ſhrubby ſtem to the height of eight or ten feet, ſending out ſeveral branches, which are generally erect. Leaves of a thick ſubſtance, and a lucid green, on pretty long foot-ſtalks, covered with ſoft hairs on their under ſide. Flowers in looſe bunches (umbels), on long, ſtiff, axillary peduncles. Corolla bright ſcarlet. The flowers make a fine appearance, and there is a ſucceſſion of them during all the ſummer months.

[a] Hort. kew. [b] Cavanilles. [c] Hort. kew.
[d] Cavanilles. [e] Curtis. [f] Hort. kew.
[g] Cavanilles. [h] Hort. kew. [i] Idem.

[The leaves, when bruiſed, ſtain the fingers of a ferruginous colour; hence Linneus's trivial name.

It was cultivated in 1714, by Biſhop Compton; and flowers from may to ſeptember[i].

27. In the flowers this perfectly reſembles the preceding; but the herb is ſmaller; the leaves are not tomentoſe, but are very like thoſe of *P. acetoſum*, but they are neither wedge-ſhaped at the baſe nor kidney-form, they are alſo leſs four[k].

Cultivated in 1732, by James Sherard, M. D. It flowers with the other[l].]

28. This riſes with a ſhrubby ſtalk four or five feet high, and divides into a great number of irregular branches, ſo as to form a large buſh, frequently eight or ten feet in height. Leaves indented on the edge in ſeveral obtuſe ſegments, cut into ſhort teeth: there is a purpliſh curved zone in form of a horſe-ſhoe, from one ſide of the baſe to the other, correſponding with the border: when gently rubbed, the leaves have a ſcent like ſcalded apples. The flowers are produced in pretty cloſe bunches, on axillary peduncles, five or ſix inches in length, coming out towards the ends of the branches; they are of a reddiſh purple colour, and continue in ſucceſſion great part of the ſummer. There is a variety with fine variegated leaves [and the flowers vary much in colour from purple, through the different ſhades of red to high ſcarlet.—Cultivated in 1710, by the Dutcheſs of Beaufort.

29. Cultivated in 1786, by Meſſrs. Lee and Kennedy.

30. Cultivated in 1784, by Mrs. Norman[m].

31. Stem ſhrubby, twiſted, covered with an aſh-coloured bark; branches round, villoſe, ſubherbaceous, a foot long. Leaves oppoſite, on long petioles, glaucous, rugged; lobes curled, toothed. Stipules almoſt embracing, acuminate. Common peduncle often oppoſite to a leaf or lateral, ſometimes axillary, longer than the leaf: involucre one-leafed, many-parted, ſhrivelling; rays about thirteen, ſcarcely an inch long. Calyx deeply five-parted: ſegments ovate, villoſe, reflex; ſtreaks obliterated. Corolla almoſt regular, papilionaceous-wheel-ſhaped; the upper petals a little wider, all quite entire, with a white border, and beautifully variegated with dark-purple ſpots. Three filaments barren; the other ſeven longer, fertile, with reddiſh-yellow anthers. Germ five-cornered, villoſe: ſtyle woolly at the baſe, and the reſt of it fleſh-coloured[n]. Jacquin obſerves, that the whole has a very ſtrong ſmell: and Curtis, that it obviouſly differs from all the other ſpecies, in the particular ſhape of its leaves, and the colour of the flowers, which are uſually of a rich and very dark purple edged with white.—Introduced in 1778, by John Earl of Bute. It flowers from june to auguſt[o].]

32. This riſes with an upright ſhrubby ſtalk to the height of ſeven or eight feet, ſending out many pretty ſtrong branches. Leaves ſomewhat like thoſe of the Vine; the lower on long petioles, the upper on ſhort ones; when rubbed, they have a ſcent of balm. The flowers grow in compact cluſters, on the top of long, naked, axillary peduncles, riſing much higher than the branches; being ſmall and of a pale blue colour, they make no great figure; but there is a ſucceſſion of them moſt part of the ſummer.

[It was cultivated in 1724, in Chelſea garden[p]. L'Heritier has figured a variety of it.]

33. This riſes with a ſhrubby ſtalk four or five feet high, dividing into ſeveral weak irregular branches. Leaves divided into three unequal lobes, which are hairy, and waved on their edges; they are placed alternately, and their foot-ſtalks are hairy. The flowers grow in cloſe roundiſh heads, forming a ſort of corymb; they are of a purpliſh blue colour, and continue in ſucceſſion great part of the ſummer. The leaves, when rubbed, have an odour like dried roſes.

[Introduced in 1690, by Mr. Bentick[q].

34. Stem ſhrubby, covered with a gray bark, three feet high and more; branches declining and decum-

[k] Hort. kew. [l] Linn. mant. [m] Hort. kew.
[n] Idem. [o] Cavanilles. [p] Hort. kew.
[q] Idem. [r] Idem.

bent,

bent, green, clammy, as is the whole plant. Leaves alternate, the uppermoſt ſometimes oppoſite, often ſhorter than the petioles, large, acute, ſinuate. Stipules wide-acuminate, ſhrivelling. Common pedunclés axillary, lateral, or oppoſite to a leaf, erect, ſolitary, longer than the leaves: involucre five-leaved, the leaflets ovate-acute, ſhrivelling: rays from three to eight, half an inch long. Calyx ovate, villoſe, deeply five-parted; the ſegments reflex. Corolla much larger than the calyx, papilionaceous, pale purple, variegated with red ſtreaks; the two upper petals wider, reflex. Seven of the filaments long, purple, villoſe, with oblong anthers; the other three very ſmall and barren. Germ ſmall, five-cornered, villoſe: ſtyle pyramidal, villoſe, white: ſtigmas purple. Capſule tomentoſe, ſharp at the baſe: awn an inch long, bearded white, ſpiral [f].

The middle of the leaf is generally ſtained with purple [g]. It was introduced about the year 1777, by Meſſrs. Kennedy and Lee, and flowers in may and june [h], even to ſeptember. Several varieties have been produced from ſeed [i].]

35. This riſes with a ſhrubby ſtalk eight or ten feet high, ſending out ſeveral irregular branches. Leaves roundiſh, with the ſides erect, ſo as to form a hollow or hood, whence Linnæus calls them cowled; they are heart-ſhaped at the baſe, or kidney-ſhaped, according to Linnæus, and from the footſtalk run many nerves ariſing from a point, but diverging towards the ſides; the borders are ſharply indented; thoſe on the lower part of the branches have long foot-ſtalks, and are placed without order on every ſide, but thoſe on the upper part have ſhorter foot-ſtalks, and ſtand oppoſite. The flowers are produced in large panicles or (umbels) on the tops of the branches. The calyx is deeply cut, and cloſely covered with ſoft hairs. The petals are large, entire, and of a purple blue colour. It flowers from june to ſeptember; and the ſeeds have ſhort hairy beaks.

[The whole plant is pubeſcent, higher than moſt of the other, ſtiffer and more upright. Leaves alternate, contracted at the baſe, without any apparent lobes, waved, crenate. Tube of the calyx ſhorter than the border. Petals fleſh-coloured with red veins; in the two upper ones the veins are very dark purple [k].

Introduced in 1690, by Mr. Bentick [l].]

36. This bears much reſemblance to the preceding, and has been confounded with it, but the leaves are of a thicker ſubſtance, divided into many acute angles, having purple edges, which are acutely indented. The ſtalks and leaves are very hairy. The branches are not ſo irregular as thoſe of the former, nor are the bunches of flowers near ſo large.

[It was cultivated in the Chelſea garden in 1724; and flowers in july and auguſt.

37. Cultivated in 1784, by Mr. Archibald Thompſon. It flowers in april and may [m].

38. Stem ſhrubby, branched; when young red, when very young green and villoſe, when old covered with an aſh-coloured bark. Leaves alternate, almoſt equal to the petioles, tomentoſe, whitiſh underneath. Stipules ſubovate. Flowers at the ends of the ſtem and branches in numerous umbels. Calyx ovate-oblong, very tomentoſe; the ſegments acute, ſtriated, the upper one wider. Corolla papilionaceous, large, pale purple, the two upper petals wider, longer, marked with deeper-coloured lines, red from the claws to the middle; the three lower whitiſh, linear. The ſeven fertile filaments much longer than the other three. Anthers ovate-oblong, yellow [n].

Introduced in 1774, by Mr. Maſſon. It flowers from march to july [o]. There are ſeveral varieties of it.

39. Stalk green, ſurface ſmooth and ſomewhat gloſſy, beſet with ſpines which bend back and terminate in browniſh weakiſh points; theſe appear to have been primarily the ſtipules, which become thus fleſhy and rigid. Leaves on long footſtalks, veiny, ſoft and downy, eſpecially on the under ſide, which is of a much lighter colour than the upper. The flowering ſtem proceeds from the ſummit of the ſtalk, and is a foot or more in height: as it advances it throws out its branches or peduncles, ultimately about five in number, each of which has a leaf at its baſe, ſimilar to the other leaves of the plant, but ſmaller, and terminates in an umbel of ſeven or eight flowers. When the corolla is expanded, the hindmoſt leaf of the calyx continues upright, the others are reflex, as is uſual in this genus; they are all beſet with fine long hairs. The three lowermoſt petals are pure white, with a little gibboſity at the baſe of each: the two uppermoſt are marked with three irregular ſpots, of a rich purple colour, inclining to carmine, the two lower ſpots narroweſt and of the deepeſt colour. Six filaments have anthers, and four have none. Stigma [illegible], divided into five parts, and a little longer than the fertile filaments. In its habit this plant ſomewhat reſembles the preceding. It flowers from may to ſeptember, and in favourable ſeaſons produces ſeeds here. It varies with petals of a rich purple colour, in which the ſpots are ſimilar, but not ſo conſpicuous.—It flowered in 1797, with Mr. Colvill, nurſeryman, in the King's-road, Cheliſea [p].

40. Stems angular, angles four, ſometimes three, ſucculent as is the whole plant, procumbent when they ſhoot out into length, at firſt hairy, afterwards very ſmooth, much branched, and three feet high. Leaves alternate, almoſt equal to the petioles, orbiculate, five-lobed; the younger villoſe, tooth crenate, violet-coloured underneath, and above having a dark red zone; the older crenate, fleſhy, dark green, with a few villoſe hairs, and frequently with a zone. Stipules ſhort, ſemicircular, ſpreading, ſhrivelling. Peduncles axillary, erect, rugged, with four ſubovate ſtipules at the forks. Calyx tubular, long; ſegments acute, ſpreading, the uppermoſt wider. Corolla very handſome, papilionaceous: the two upper petals an inch and half in diameter, ſemitubular at the baſe, upright, reflex at the tip, purple on the outſide, white within, having two oblong feathered ſpots, of a deep purple colour; the two others lateral, ſickle-ſhaped, parallel, with narrow claws; between theſe come out the ſtamens and piſtil, which are long, perpendicular to the upper petals, and thence from bowed upright. Seven of the filaments very long, deep red, with dark-purple, ovate-anthers; the other three ſhorter and barren. Germ five-cornered, pubeſcent: ſtyle pyramidal, at firſt green, then purple. Capſules oblong, villoſe, ſharp at the baſe: awn an inch long, bearded, ſpiral. Seeds ſmooth, reſembling a grain of wheat [q].

A vein of ſingularity, ſays Mr. Curtis, runs through the whole of this plant; its ſtalks are unequally and obtuſely quadrangular, ſometimes more evidently triangular; its leaves few, and remarkably ſmall; its flowers, on the contrary, are uncommonly large, and what is more extraordinary have only four petals; previous to their expanſion the body of filaments is bent ſo as to form a kind of bow. There is a variety with beautifully coloured leaves.

Introduced in 1774, by Mr. Francis Maſſon. It flowers from june to auguſt [r].]

41. This has many weak ſhrubby ſtalks which require ſupport, and extend to the length of two or three feet. Leaves on ſlender foot-ſtalks, faſtened into the diſk, they are ſmooth, of a lucid green, with a circular purple mark in the middle, have an acid flavour, and are placed alternate on the branches. The flowers are on pretty long axillary peduncles, each ſuſtaining four or five purple flowers, coming out in ſucceſſion during moſt of the ſummer months: and the ſeeds frequently ripen here. [It was cultivated in 1701, by the Dutcheſs of Beaufort [s].

42. Cultivated in 1787, by Meſſ. Grimwood and Barret, at Kenſington. It flowers moſt part of the ſummer [t].

43. Native of the ſouth-weſt coaſt of Africa. Introduced in 1786 by Mr. Anthony Hove. It flowers in july [u].

[f] Cavanilles. [g] Curtis. [h] Hort. kew. [i] Curtis.
[k] Linn. mant. [l] Hort. kew. [m] Idem. [n] Cavanilles.
[o] Hort. kew.

[p] Curtis. [q] Cavanilles. [r] Hort. kew.
[s] Ray ſuppl. [t] Hort. kew. [u] Idem.

Stem shrubby, woody, branched, almost upright, round, the thickness of a finger; three feet high and more, brown. Leaves alternate, except on the branches near the peduncles, which are opposite; they are acute, more or less five-lobed or seven-lobed, flat, glaucous underneath, above glaucous-green frequently with a dusky zone, on a long petiole, sometimes extending to six inches. Stipules ovate, acute, quite entire, glaucous with the tip of a blood-red. Common peduncles axillary, alternate, erect, firm, round, four or five inches long, ending in an umbel that has commonly four flowers. Leaflets of the involucre four or five, lanceolate, acute, quite entire, erect. Pedicels two inches long, round, grooved at top, jointed, and somewhat roughened. Flowers handsome. Leaflets of the calyx lanceolate, mucronate, ciliate; the uppermost twice as broad as the others and erect. The two upper petals large, widely wedge-shaped, purple with several branched streaks of a darker purple arising from the base, and above these a transverse band of the same colour: the three lower linear-lanceolate, blunt, flesh-coloured, spreading very much, twice as long as the calyx. Filaments purple, with flesh-coloured anthers. Germ roundish, hirsute. Stigma purple [1].

Jacquin gives Geranium tabulare of Burman and Cavanilles, with Herm. afr. p. 11. and Raii suppl. 514. 37. as synonyms of this. See n. 7.

44. Native of the south-west coast of Africa. Introduced in 1786, by Mr. Anthony Hove. It flowers in july [2].

45. Native of the island of St. Helena. Introduced in 1765, by Mr. John Bush. It flowers from may to july [3].

46. Stem shrubby, short. Root-leaves numerous, on very long petioles, tomentose: stem-leaves alternate, on short petioles. Stipules lanceolate-acuminate. Peduncles terminating, very long, three-flowered or thereabouts. Involucre of four acute converging leaflets: rays an inch and half long. Calyx ovate, tomentose; the upper segment wider. Corolla papilionaceous, twice as large as the calyx, red; the upper petals longer, wider, reflex. The pitcher of filaments ten-toothed; the teeth alternately shorter and barren: anthers dusky, oblong. Germ five-cornered; stigmas red. Capsules acute at the base; with the awn or tail an inch in length [4].

Introduced in 1774, by Masson. It flowers from may to july [5].]

47. Stem shrubby, four or five feet high, sending out several branches. Peduncles long, coming out from the side of the branches. Corolla large, red, with the two upper petals bigger than the three others.

[The flowers vary considerably both in size and colour: its foliage is different from that of the other species, and as its name imports, like that of the Birch-tree [6]. It flowers most part of the summer, and was introduced in 1786, by Masson [7]. Hence Mr. Miller's *betulinum* is supposed not to be this species.

48. The whole plant is very smooth, glaucous and in a manner whitish. Stem shrubby, with round, rod-like, declining branches, two feet high. Leaves opposite, often shorter than the petioles, which are round and erect. Stipules lanceolate-acuminate, fleshy, deciduous. Peduncles alternately axillary, very long, one or two-flowered. Segments of the calyx acuminate, the uppermost and two lower ones wider. Corolla papilionaceous, white: the upper petals wider, reflex; claws purple. Anthers pale saffron: sometimes there are only six [8].

It flowers from june to august; and was introduced in 1775 by Messrs. Kennedy and Lee [9]: from dried specimens in the possession of Sir Joseph Banks [10].

49. Root branched. Stem shrubby, two feet high and more, very much branched, smooth, round, the thickness of a reed or the little finger, almost upright, when old dusky, when young more or less blood-red. Leaves alternate, except a few of the upper ones which are opposite, petioled, three-lobed or three-parted, very seldom ternate, stiffish, veined, smooth above, muricated underneath at the midrib and principal veins, three inches long, taking in the petioles: lobes lanceolate, acute, very minutely serrated, gashed; but sometimes quite entire. The upper leaves are usually entire, lanceolate, quite smooth underneath, neither serrate nor gashed, or else one-toothed on one or both sides; but they vary so much, that the specific difference can only be taken from the lower leaves. Petioles round, the length of the leaves, smooth, seldom rough. Stipules lanceolate, acuminate, smooth, erect, first green, then red. Peduncles opposite to a leaf, smooth, slender, spreading, almost as long as the leaves, commonly one-flowered, but sometimes two-flowered. Involucre two-leaved, leaflets ovate-awned, erect, green. Pedicels half an inch long, grooved almost to the base, smooth, reddish. Leaflets of the calyx lanceolate, acuminate, four of them green with white edges; the uppermost wider, concave, erect, red. Petals wedge-shaped, rounded, whitish flesh-colour, above the claws having an oblong red spot, which in the two upper ones is wider and branched. Anthers rose-coloured. Stigma red [11].

Introduced in 1780, by Messrs. Kennedy and Lee. It flowers from may to august [12].]

50. Stem shrubby, six or seven feet high, sending out several side branches. Leaves of a grey colour, and having an acid taste like Sorrel. Peduncles axillary, long, sustaining three or four flowers, with narrow, unequal petals, of a pale bluish-colour, with some stripes of a light red. The flowers continue in succession most part of the summer.

A variety with scarlet flowers has been raised from seed.

[It was cultivated in Chelsea garden in 1724 [13].

51. Stem shrubby, round, three or four feet high, the thickness of a finger, upright, of a reddish bay colour, branching from the axils, very rough, as is the whole plant, but becoming smooth with age. Leaves on long petioles, very widely wedge-shaped, three-nerved, acute, stiffish, alternate except the upper ones next the flowers, which are opposite, the longer ones seven or eight inches in length reckoning the petioles; the lobes gashed or thinly toothed, but sometimes quite entire. Stipules small, ovate-acuminate, on each side next the petioles. Common peduncles terminating and axillary, short, sustaining commonly from four to six flowers. Calyx green: segments lanceolate, acuminate, spreading very much, shorter than the petals, very unequal in breadth. Petals blunt, of a purple rose-colour; the two upper ones twice as wide as the others, with a dark blood-red spot at the base. Anthers oblong, blood-red; as are also the stigmas. Seeds rough, with a rough beak, an inch in length [14].

Introduced in 1775, by Messrs. Kennedy and Lee. It flowers from august to november [15].

52. This is a stiff shrub. Leaves small, five-lobed, having the smell of Balm. Flowers violet. Peduncles commonly two-flowered [16]. Stipules cordate, almost imbricate on the branchlets. Involucels lanceolate [17].

Introduced in 1774, by Mr. Francis Masson. It flowers from july to november.

53. Introduced in 1785, by Mr. Archibald Thompson. It flowers in april and may [18].

54. The whole plant is very smooth and somewhat glaucous. Stem shrubby, a foot high, with round, upright branches. Leaves alternate, shorter than the petioles, mostly divided into three lobes, each of which are three-lobed at the tip, and crenate; the young ones are somewhat cowled, but afterwards become spreading. Stipules very small, in some specimens scarcely visible. Common peduncle axillary, and as it were terminating, longer than the leaves: involucre five-cleft, with the segments short and revolute:

[1] Jacquin. [2] Hort. kew. [3] Idem. [4] Cavanilles.
[5] Hort. kew. [6] Curtis. [7] Hort. kew. [8] Cavanilles.
[9] Hort. kew. [10] Curtis.

[11] Jacquin. [12] Hort. kew. [13] Idem. [14] Jacquin.
[15] Hort. kew. [16] Linn. mant. [17] Linn. suppl.
[18] Hort. kew.

pedicels from three to five, ſcarcely half an inch in length. Calyx deeply cut into five acuminate reflex ſegments, the upper one erect. Corolla papilionaceous, pale fleſh-colour, the three lower petals hanging down, without ſpots, and white on the outſide; the two others upright, bent back at top, having ſpots of a darker colour. The leaves have a very ſweet ſmell, not unlike Sweet Marjoram; when young, and in the open air whitiſh with a very fine nap, but in the ſtove ſmooth and green [a].

Found by Mr. William Paterſon, and introduced at Kew in 1779, by the Counteſs of Strathmore. It flowers from may to auguſt [b].

55. Stem ſuffruticoſe, dichotomous, round, purple, villoſe, erect, two feet high and more: branches ſimple, ſhort, reſembling the ſtem. Leaves rigid, ſtrigoſe-rugged, an inch long; ſerratures purpliſh: petioles villoſe, the length of the leaves. Stipules two or more, ovate-acute, concave, a line in length. Flowers lateral and terminating, umbelled: involucres lanceolate, purple, ſubciliate. Calyx ciliate-hairy. Corolla whitiſh-fleſh-colour; petals oblong, entire, equal, with a double purple ſtreak at the baſe [c].—It differs very materially from the other ſpecies in the unuſual roughneſs of the ſtalks, as well as in its whole habit [d].

56. The plants of this newly-introduced ſpecies ſcarcely exceed a foot in height here, growing up with a ſhrubby ſtem, and ſpreading widely into numerous flowering branches, ſo much diſpoſed to produce flowers in a conſtant ſucceſſion, that during moſt of the ſummer the plant is loaded with a profuſion of them. For the moſt part they go off without ſeed; and when any is produced, there is generally one perfect, and four abortive. The fertile ſtamens vary in number; four are moſt uſually apparent, three ſuperior, one and often two inferior. The whole plant is covered with ſhort white hairs, which give to the foliage a ſomewhat ſilvery hue. The two uppermoſt petals are of a beautiful red, having their baſes nearly black; the three lowermoſt are white. Inſtances occur in which one or more of the white petals have a ſtripe of red; and the dark colour at the baſe of the upper petals is, in a certain degree, ſoluble in water; for on the plants being watered, the white petals here and there become ſtained by the colouring matter, which in a diluted ſtate is purpliſh: as the flowers decay, this apparently black part, diſtinguiſhed by the roughneſs of its ſurface, ariſing from prominent lucid points, is ſometimes perforated with numerous ſmall holes.

Introduced by Maſſon at Kew in 1792. Raiſed alſo from Cape ſeeds by Mr. Williams nurſery-man at Hammerſmith [e].

The above ſpecies, with very few exceptions, are natives of the Cape of Good Hope. Theſe that follow are deſcribed by Jacquin in the laſt volume of his Collectanea, and figured in the third volume of his Icones Plantarum rariorum.

57. Root rapaceous, oblong, brown, two inches long, perennial. Root-leaves many, decumbent in a ring, with a few ſmaller that are upright, about five inches in length, oblong, of a duſky green colour, almoſt ſmooth, appearing ciliate at the edge when examined by a magnifier, having ſomething of a turpentine ſmell, bipinnate. Petiole two or three inches long, above and at the edges ſomewhat hiſpid with white hairs, ſmooth underneath, winged at the baſe with a lanceolate-linear acute and ſomewhat hirſute ſtipule on both ſides: pinnas oppoſite, often three on each ſide, with an odd one at the end: pinnules decurrent, cut into two or three oblong lobes. Scape round, upright, half a foot high, purple, thinly hairy. Umbel ſimple. Leaflets of the involucre about fifteen, linear-lanceolate, acute, ſhort, hirſute, ciliate, green. Peduncles two inches long, thickiſh, about ſeven in number, ſomewhat hairy, red. Calycine leaflets linear-lanceolate, acuminate, villoſe, ciliate, green, ſpreading, about half the length of the petals; which are ſomewhat wedge-ſhaped, blunt, ſpreading but not bent back; the two upper ones three times as wide as the others, emarginate, and having branched red veins; all pale the firſt day, but afterwards fleſh-coloured, expanded in the day time, but contracted and ſhut at night. Anthers ſcarlet. Germ ſilky. Stigma purple. It flowers in march and april.

58. Root rapaceous, roundiſh, brown, perennial. Root-leaves ſeveral, half a foot long and more, on long petioles, ſmooth, bright green, winged at the baſe on each ſide with a lanceolate-linear acute red ſmooth ſtipule. Pinnas of the leaves quite entire, decurrent, with two or three hairs at the tip, ſome ſimple, others forked with two or three lines. Scapes very ſhort, ſometimes ſcarcely an inch high, upright, ſomewhat hirſute. Umbel compound, with about three rays, villoſe, ſcarcely longer than the involucel, red. Calycine leaflets linear-lanceolate, acute, almoſt equal. Leaflets of the univerſal involucre ſeveral, hirſute, lanceolate-linear, acute, unequal; one or two of them often reſembling the root-leaves, but much ſhorter and ſomewhat hirſute. Leaflets of the involucel, ſeveral, lanceolate, acute, hirſute, almoſt equal. Peduncles villoſe, ciliate, four of them ſpreading and reflex, the fifth erect. Petals linear-wedge-ſhaped, blunt, half turned back, very pale roſe-colour; the two upper ones approximating, twice as broad as the reſt, ſometimes emarginate, and marked below with two red lines; the three lower ones have only one line. Anthers oblong, vermilion. Germ green, ſilky. Style purple, villoſe. Stigma purple. It flowers in april.

59. Root rapaceous, oblong, two inches in length, perennial. Root-leaves ſeveral, ſpreading, thickiſh, with white decumbent hairs on both ſides, ciliate, four or five inches long, duſky green. Petiole roundiſh, villoſe, about two inches in length, winged at the baſe on each ſide with a lanceolate acute villoſe ſtipule. Pinnas commonly oppoſite, the loweſt often ſlightly petioled, the reſt ſeſſile and decurrent; with oblong blunt lobes. Scape an inch high, thickiſh, upright, round, hirſute. Umbel compoſed of about three rays, four or five inches long, hirſute, purple. Leaflets of the univerſal involucre few, very unequal, hirſute, one or two lanceolate, acute, the others more or leſs reſembling the root-leaves, but ſhorter. Leaflets of the involucel about ten, lanceolate, acute, hirſute, ſpreading, almoſt equal. Peduncles very many, villoſe, half an inch long. Calycine leaflets lanceolate, acute, hirſute, ciliate, with hairs, eſpecially along the dorſal nerve glandularly headed. Petals wedge-linear, blunt, upright and white to the middle, reflex and very dark purple above. Anthers oblong, of a red bay colour. Germ and ſtyle hirſute. Stigma purple. It has but little ſmell when bruiſed, and flowers in april and may.

60. Root rapaceous, the length and thickneſs of a finger, brown, perennial. Root-leaves ſeveral, ſometimes but ſeldom one or two ſmaller and lobed: leaflets ovate, bluntiſh, on very ſhort petioles, very obſcurely ciliate at the edges when examined with a magnifier, the middle one an inch and half long, but the ſide ones ſmall. Common petiole two or three inches long, hirſute, winged at the baſe on each ſide with a linear acute hirſute ſtipule. Scape two inches high, round, hirſute, erect. Umbel compoſed of two or three rays coming out in ſucceſſion, half a foot long, hirſute. Leaflets of the involucre few, lanceolate, hirſute, unequal: of the involucels ſeveral, lanceolate, acute, hirſute, ciliate, reflex, ſmall. Peduncles about ten, an inch long, hirſute. Calycine leaflets reflex, lanceolate, acute, hirſute, ciliate, almoſt equal. Petals wedge-ſhaped, blunt, upright at bottom and thence ſpreading very wide, roſe-coloured, a little longer than the calyx; the two upper ones almoſt twice as wide as the others, a little longer, with blood-red dots below. Germ ſilky. Style and ſtigma of a very dark blood red colour. It flowers in april.

61. Root rapaceous, two inches long, black, perennial. Root-leaves ſeveral, in a ring. Petiole ſomewhat hiſpid, with a lanceolate-linear hirſute ſtipule at the baſe on each ſide, and from two to four inches long, the leaves varying much even on the ſame plant; being acute or obtuſe, ternate with the middle lobe more or leſs deeply three-lobed, very large or nearly equal to the lateral leaflets, which are ſometimes quite entire, ſometimes gaſhed; ſometimes

ſimple,

[a] Cavanilles. [b] Hort. kew. [c] Cavanilles.
[d] Curtis. [e] Idem.

ſimple, ovate, ſmall, entire or obſoletely three-lobed. Scape upright, ſomewhat hiſpid, an inch or two in length, green. Umbel compoſed of three or four rays, half a foot long, purple, hiſpid. Leaflets of the involucre ſeveral, lanceolate, acute, hirſute, reflex, unequal, with one leaflet often larger and ternate: leaflets of the involucels ſeveral, linear-lanceolate, acute, hirſute, reflex, equal. Peduncles about eight, an inch long, purple, ſomewhat hiſpid. Calycine leaflets pale green, linear-lanceolate, acute, hirſute, ſpreading very much; the uppermoſt erect and concave. Petals wedge-ſhaped, ſpringing from a long upright claw, turned back at top, blunt, twice as long as the calyx, white; the two upper ones a little wider, with a long dark blood-red ſpot above the claws. Anthers oblong, fleſh-coloured. Stigma red. Germ ſilky. It flowers in march and april, and when bruiſed has the ſmell of turpentine. Jacquin ſuſpects that it may perhaps be only a variety of *P. birſutum*, *n.* 1.

62. Root rapaceous, two inches long, brown, perennial. Leaflets bluntiſh, petioled; ſome ſimple and ſubovate; others ternate; others three-lobed, with the lateral lobes ſmaller; all of them ſometimes entire, ſometimes gaſh-bifid. Petiole ſomewhat hirſute below; with a lanceolate acuminate ſtipule at the baſe on each ſide, which is alſo ſomewhat hirſute. Scape almoſt upright, about three inches high, round, roughiſh, hairy. Umbel uſually compoſed of three rays, which are half a foot in length, hairy and round. Leaflets of the involucre about eight, lanceolate, acute, almoſt equal, hirſute: of the involucel ſimilar. Peduncles from five to ten, hirſute, two inches long. Calycine leaflets lanceolate, acuminate, hairy at the back, woolly at the edges, equal, ſpreading very much, pale green with whitiſh edges. Petals twice as long as the calyx, wedge-ſhaped, very blunt, reflex and ſpreading very much, white; the two upper ones wider, with two branching red ſtripes ariſing from the baſe. Anthers oblong. Germ ſilky. Stigmas purple. It flowers in march and april, and when bruiſed has a little ſmell of turpentine.

63. Root rapaceous, roundiſh, an inch in length, brown, perennial. Root-leaves ſeveral, quite entire, ſomewhat convex, appearing ſomewhat villoſe at the edges when examined by a magnifier, often turned back a little, two inches long. Petiole of the ſame length, ſomewhat villoſe in the lower part, winged at the baſe on each ſide with a ſcarioſe, whitiſh ſtipule, which is acute and tooth-ciliate. Sometimes a few leaves come out later which are ſmaller and pinnate, the pinnas lanceolate-linear, acuminate and decurrent. Scape round, ſlender, weak, green, almoſt upright, half a foot high. Umbel compoſed of about four rays, which are half a foot long, villoſe, and lengthen ſucceſſively. Involucre many-leaved: leaflets unequal, villoſe, acute, almoſt linear, one of them often much larger and lobed. Involucels the ſame number with the flowers, linear, acute, ſomewhat villoſe, upright. Peduncles purple, half an inch long, villoſe. Calycine leaflets linear-lanceolate, acute, villoſe, green, ſpreading. Petals wedge-ſhaped, blunt, half-reflex, uniformly red-purple, the two upper ones a little wider. Anthers oblong, red with a yellow pollen. Germ roundiſh, five-grooved, green, ſilky, with white hairs. Style and ſtigma red. It flowers in march and april.

64. Root rapaceous, fuſiform, brown, three inches long, perennial. Leaves narrowly and elongately lanceolate, quite entire, about three inches long, with a hirſute petiole of the ſame length, hairy above and at the edges; ſome have a ſmall linear-lanceolate ſharp leaflet or two at their baſe; at the origin of the petiole on each ſide they are winged with a lanceolate ſharp hirſute ſtipule. Scape half a foot high and more, round, upright, hirſute. Umbel compoſed of three or four rays, which are three inches long and hirſute. Leaflets of the involucre ſeveral, linear-lanceolate, acute, hirſute, with one of them commonly much larger than the reſt: thoſe of the involucel ſimilar, but all nearly equal. Peduncles five or more, half an inch long, hirſute. Calyx green, hirſute; leaflets lanceolate, acute, four of them ſpreading very much, the uppermoſt erect. Petals linear-cuneiform, bluntiſh, erect at bottom, but ſpreading very much at top, twice as long as the calyx, pale yellow; the three lower unſpotted, the two upper above the claw to the middle of the border dark blood red. Anthers red. Germ villoſe. It flowers in may.

65. Root rapaceous, roundiſh or oblong, brown, perennial. Root-leaves ſeveral, very much narrowed at the baſe, quite entire, appearing ſomewhat villoſe at the edge when examined by a magnifier, bright green, three or four inches long. Petiole two or three inches in length, ſomewhat villoſe, winged at the baſe on each ſide with an acute ciliate purple or white ſtipule. Scape ſlender, upright, round, almoſt ſmooth, half a foot high and more. Umbel compoſed of three or four rays, which are four inches long, round and villoſe. Leaflets of the involucre about five, lanceolate-linear, acute, ciliate, unequal: of the involucel linear, acute, villoſe, ſmall, ſpreading, about the ſame number with the flowers. Peduncles about eight, an inch long, ſomewhat villoſe, channelled, forming at firſt a convex umbel, but afterwards ſpreading out ſo much, that the umbel is flat and depreſſed. Calycine leaflets linear-lanceolate, acute, villoſe, ſpreading very much, green with white edges, one third only of the length of the petals: which are lanceolate-linear, ſharpiſh, half turned back, pale yellow; the two upper ones a little wider and dark blood red in the middle. Filaments nine only, of which five are ſhort and barren, the anthers on the other four are oblong and ſcarlet with a yellow pollen. Germ long ovate, villoſe, green. Style and ſtigma blood-red. It flowers in march and april.

66. Root rapaceous, oblong, brown, perennial. Root-leaves ſeveral, very much narrowed at the baſe, quite entire, appearing ſomewhat villoſe at the edge when magnified, from three to five inches long, with a ſmoothiſh petiole nearly of the ſame length, having a narrow-lanceolate, acute, ſmoothiſh ſtipule on each ſide. Scape round, ſmoothiſh, flexuoſe, weak, about half a foot in height. Umbel compoſed in general of two rays, which are villoſe and about half the length of the ſcape. Leaflets of the involucre few, linear-lanceolate, acute, villoſe, unequal, one or two reſembling the radical leaves, but ſcarcely two inches long: thoſe of the involucel equal. Peduncles from four to ſeven, villoſe, an inch or an inch and half in length. Calyx green: leaflets linear-lanceolate, acute, villoſe; the upper one erect, the reſt reflex. Petals linear, ſharpiſh, channelled, erect at bottom, but ſpreading very much above, an inch and half long, very pale yellow, with a longitudinal purple band above the claw, of a very deep colour in the two uppermoſt petals: the uppermoſt petal is ſometimes ſo deeply cloven that the corolla appears to be ſix-petalled. Filaments ten, extremely ſhort. Anthers four, oblong, obtuſe, red. Germ villoſe. It flowers in may.

All the above ſpecies from *n.* 57. inclufive, are natives of the Cape of Good Hope, and belong to the firſt diviſion.

67. Root branching, annual. The whole plant villoſe, and ſmelling rather diſagreeably. Stems ſeveral, branched, diffuſed, from ſix to ten inches in length, the thickneſs of a pigeon's quill at the baſe, round, jointed, knobbed, in the primary diviſions dichotomous, more or leſs of a duſky purple. Leaves petioled, oppoſite, entire, thickiſh, hoary green, the largeſt ſcarcely an inch long, but moſt of them only half that length. Stipules lanceolate, acute, ſmall, withering in a ſhort time. Peduncles axillary, alternate, longer than the leaves. Leaflets of the involucre about four, lanceolate, acute, ſmall. Pedicels ſhortly grooved above. Flowers very ſmall. Calyx green and ſomewhat rough-haired; leaflets lanceolate, drawn to a point and ending in a briſtle, erect, the uppermoſt a little wider. Petals the length of the calyx, wedge-ſhaped, blunt, upright, ſpreading a little at top, white with a dark-purple diſk; the two uppermoſt twice as broad as the other three. Anthers yellow. Germ hirſute. Stigma five-cleft, purple, ſomewhat villoſe. Seed hirſute; the tail half an inch long and bearded.

68. Root branched, biennial. Stem branching from the

the very bottom, ſo that it appears to be many-ſtemmed, the thickneſs of a reed, round, a foot high, when young very ſoft and like velvet, as are alſo the other parts of the plant. Leaves ſcattered, blunt, nerved and veined, flat except that they are often a little waved at the ſerratures, thickiſh, ſomewhat hoary on both ſides, an inch or an inch and half in length. Petiole round, from three to ſix inches long. The uppermoſt leaves are oppoſite. Stipules on each ſide of the petioles, ovate-acuminate, quite entire, upright, preſſed cloſe, often duſky purple, towards the bottom of the branches imbricate. Common peduncles erect, about three inches long, umbelled. Leaflets of the involucre few, ovate, acute, ſmall. Pedicels from one to three, erect, an inch and half long, very ſhortly grooved at top. Calycine leaflets ovate, bluntiſh, concave, three-ſtreaked, bearded at the tips, ſpreading, pale green, three of them twice as wide as the other two. Petals very blunt, uniformly red-purple, ſpreading very much above the claws, the two upper ones very wide and roundiſh, the other three oblong. Filaments united almoſt up to the middle, very cloſely villoſe on the outſide with capitate hairs; five of them alternately awl-ſhaped, white, and alſo a little capitately villoſe, have haſtate yellow anthers; of the five barren ones the three lower are very ſhort, the two upper are as long as the fertile ones, ſimply hairy, and purple at the tip. Germ hirſute. Stigma ſcarlet. It flowers in march and the following months.

69. Root branching, the thickneſs of a reed, brown, long. Stems few, procumbent, half a foot high, round, perennial, more ſlender by half than a reed, covered with the imbricate permanent brown ſtipules of fallen leaves; which are acute, ſimple, tooth-ſerrate towards the end, but quite entire in the other parts, thickiſh, often ſomewhat keeled, narrowing at the baſe into the petiole, the larger ones half a foot in length, ſpreading, cloſely imbricate on the ſtems, but on the flowering branches diſtant, alternate except the uppermoſt, which are oppoſite. Stipules lanceolate, acuminate, erect, quite entire, appearing ciliate and ſilky by a magnifier, growing to the petioles. Peduncles oppoſite to the leaves and axillary, alternate, erect, villoſe, ſoft, three inches long, the loweſt umbelled two-flowered, the reſt three-flowered. Leaflets of the involucre commonly five, lanceolate, acute, ciliate, a little rough-haired, as are alſo the pedicels and calyx. Pedicels two inches long, ſhortly grooved at top. Calycine leaflets lanceolate, acute, ſpreading very much and reflex; the uppermoſt a little wider. Petals blunt, ſpreading very much, white at the claws, the reſt purple; the two upper ones very wide, obovate, with the claw on each ſide produced and wedge-ſhaped; the three lower from a narrow claw oblong. Filaments declined, awl-ſhaped; five longer with anthers, which are oblong and tawny red: of the five barren ones, four are white and the upper one purple. Germ and ſtyle hirſute. Stigma ſmooth, purple. The little ſmell it has is unpleaſant. It flowers in june and july.

There is a variety which has ſmaller flowers, with the claw of the two upper petals white and crowned with a deep-red band: all the leaves are linear-lanceolate, and gaſh-ſerrate almoſt their whole length.

70. Root branched. Stem round, the thickneſs of a reed, duſky, dividing preſently into ſeveral branches or ſtems, procumbent, round, ſubdivided, herbaceous, a foot and half long, appearing very cloſely and ſhortly villoſe in the magnifier, but neither hairy nor hirſute. Lower leaves alternate, the reſt oppoſite, petioled, ſomewhat hiſpid on both ſides when viewed in a glaſs, ſhortly ciliate, above deep green with the diſk ſometimes browniſh, pale green underneath, oblong, blunt, gaſh-ſerrate, ſome of the lower ones entire, the next ternate, with the lateral leaflets more or leſs roundiſh and lobed, the middle leaflet ſubpinnatifid; upper leaves pinnatifid; almoſt all ſo rolled back as to be convex and reſemble a bladder. Stipules ovate, acute, thinly ciliate with long hairs. Common peduncles axillary, a few oppoſite to a leaf, round, ſomewhat villoſe, longer than the leaves. Leaflets of the involucre commonly four, lanceolate, acute, green, ſomewhat villoſe in the magnifier, ſpreading or reflex. Pedicels ſcarcely half an inch long, grooved almoſt to the baſe, ſomewhat rough-haired, duſky purple. Calycine leaflets lanceolate, acuminate, ſtriated, villoſe, ſpreading; the uppermoſt wider than the reſt. Petals always four, very pale purple or fleſh-colour, twice as long as the calyx; the two upper ones from a long claw widen into a rounded very broad lamina, ſtand erect, and from the bottom have two branching red lines; the two lower ones are long lanceolate, reflex above the claws, ſhorter than the upper ones and much narrower. Anthers ſcarlet. Stigma blood-red. Fruit hirſute, two inches long. Seeds acuminate at the baſe, hirſute with a feathered awn. It flowers in the ſummer, and when rubbed has an unpleaſant ſmell.

71. Root brown, round, the thickneſs of a reed, biennial. Stems ſeveral, procumbent or aſcending, branched, herbaceous, round, attaining the height of eighteen inches. Leaves oblong, blunt, crenate, ſtiffiſh, on long petioles, dark green with the diſk frequently browniſh, alternate except the uppermoſt. Stipules ovate, acute. Common peduncles axillary and oppoſite to a leaf, commonly two-flowered, ſeldom one-flowered or three-flowered, two or three inches in length. Leaflets of the involucre few, lanceolate, acute. Pedicels half an inch long, grooved almoſt to the baſe. Calycine leaflets lanceolate, acute, ſtriated; the uppermoſt twice as broad as the others. Petals wedge-ſhaped, blunt, ſpreading, fleſh-coloured or white, twice as long as the calyx; the two upper ones much larger and having two branching red lines. Anthers oblong, red. Stigma blood-red. Awn of the ſeed feathered and two inches long. It flowers in ſummer, has but little ſmell, and is rough-haired all over.

72. Root branched. Stem herbaceous, round, procumbent or almoſt erect, the thickneſs of a reed, a foot and half high, branched, blood-red next the ſun. Leaves on long petioles, alternate or oppoſite, oblong, blunt, hiſpid at the edges and underneath on the nerves and veins, having a few hairs ſcattered over the upper ſurface, ſpreading, the largeſt five inches long, with a petiole three inches in length and hirſute; the loweſt ſimple and pinnatifid; the reſt ternate, with the lateral leaflets roundiſh lobed and gaſhed, the middle one oblong and pinnatifid with the ſegments approximating and gaſhed, the loweſt of them even lobed. Stipules ſubcordate, acuminate, hirſute, ciliate, green, ſpreading very much. Common peduncles oppoſite to a leaf, a few of them axillary, round, ſomewhat hirſute, from three to ſix inches long, umbelliferous. Leaflets of the involucre about five, lanceolate-ovate, acute, ſomewhat hirſute, ciliate, reflex. Pedicels commonly five, round, ſomewhat compreſſed, rough-haired, grooved almoſt to the baſe, half an inch long. Calycine leaflets long-lanceolate, acute, ſomewhat rough-haired, ſtriated, ſpreading, the uppermoſt wider. Petals blunt, ſpreading, pale fleſh-colour; the two uppermoſt obovate, very wide, with two branching blood-red ſtreaks above the claw; the three lower ones much ſhorter and narrower, almoſt ſpatulate. Anthers oblong, red. Germ hirſute. Stigma blood-red. Fruit rough-haired. It flowers from may to july, and has an unpleaſant ſmell.

73. Root branched. Stems ſeveral, herbaceous, at moſt the thickneſs of a reed at bottom, round, often jointed and knobbed, duſky purple, wholly procumbent, and cloſely hirſute with white hairs, three feet high, branched. Leaves on long petioles, the lower alternate, the upper oppoſite, ciliate, ſomewhat hirſute underneath along the nerves and veins, the reſt ſmoothiſh, appearing dotted when examined by a magnifier; the nerve and veins on the back often purple; the lateral leaflets lobed and gaſh-ſerrate, the middle one lengthened out, three inches long, pinnatifidly cut into oblong diſtant lobes gaſh-toothed at top; petiole hirſute. Stipules ovate, acute or truncated, ciliate, hirſute. Common peduncles oppoſite to a leaf, axillary and terminating, umbelliferous, erect, from two to four inches long, hirſute. Leaflets of the involucre about four, lanceolate, acuminate, ſtriated, ciliate,

ſomewhat hirſute. Pedicels from one to five, grooved almoſt to the baſe, ſomewhat rough-haired, half an inch long. Calycine leaflets oblong-lanceolate, acuminate, ſtriated, ſpreading, ſomewhat rough-haired. It reſembles the preceding very much; but it has very ſeldom five petals, and has always ſeven fertile filaments. It flowers from may to july, and has a diſagreeable ſmell.

74. Root the thickneſs of a reed and more, about three inches long, round, branched, pale. Stems numerous, procumbent except at the end, where they aſcend in a bow ſtiffly, branched, round, ſmooth, ſomewhat villoſe towards the top, knobbed, blood-red at the joints, duſky purple at bottom, in other parts green with a tinge of purple here and there, herbaceous, two feet long, the thickneſs of a pigeon's quill. Leaves alternate, except the upper ones, which are oppoſite, two or three inches in length reckoning the petioles, three-lobed, gaſhed, blunt, ſmooth, green; the ſide-lobes on very ſhort petioles, ſubovate, in the larger ones three-lobed; the middle lobe lengthened out and pinnatifid. Stipules ovate, acuminate, ſmooth, blood-red. Peduncles round, appearing ſomewhat villoſe when magnified, terminating and axillary, erect, rigid, almoſt as thick as the ſtem, green, about two inches in length. Leaflets of the involucre commonly five, ovate, acute, concave, pale green with blood-red ſtreaks, ſpreading very much. Pedicels grooved two-thirds of their length, villoſe, ſcarcely longer than the involucre, almoſt upright, dark blood-red. Calycine leaflets oblong, mucronate, ſtreaked, ſpreading, blood-red, the uppermoſt twice as wide as the others. Petals ſpreading, deep purple, with deeper purple bands above the claw; the two upper ſpatulate, ſubemarginate, almoſt twice as long as the calyx; the two lower blunt, leſs than half the breadth and much ſhorter than the others. Filaments awl-ſhaped, ſhorter than the calyx, purple. Anthers oblong, erect, fleſh-coloured with a yellow pollen. Germ villoſe. Stigma purple. Fruit hirſute. Seeds villoſe, with a feathered awn an inch in length. It flowers in april and the following months, and is void of ſmell.

75. Root round, the thickneſs of a reed, browniſh. Stem round, the thickneſs alſo of a reed, a foot high, branched, ſomewhat rugged, rough-haired, hiſpid, erect, with the lower branches ſomewhat ſpreading. Leaves oblong, alternate except the upper ones, which are oppoſite, blunt, appearing dotted on both ſides when examined by a magnifier; underneath and at the edges roughiſh with white hairs, pinnatifidly lobed, gaſhed, crenate, the largeſt three inches in length, with a petiole two inches long and hirſute; the uppermoſt ſeſſile and ſtiffiſh; the loweſt lobes of the larger leaves commonly diſtinct; inſomuch that the leaves are then ternate: the uppermoſt leaves in ſome individuals are bipinnatifid. Stipules roundiſh, acute, ciliate. Peduncles oppoſite to a leaf or axillary, round, thickened at the baſe, ſomewhat rugged, two inches long. Leaflets of the involucre about ſeven, lanceolate, acute, ſtriated, ciliate, reflex. Pedicel rugged, roughiſh, erect, grooved almoſt to the baſe, half an inch long. Calycine leaflets lanceolate, acuminate, roughiſh, ciliate, ſpreading, green with purple ſtreaks, the upper one a little wider. Petals wedge-ſhaped, roſe-coloured, twice as long as the calyx, blunt, ſpreading; the two upper ones much wider and marked with branched blood-red lines. Anthers blood-red. Stigma of the ſame colour, villoſe above. Fruit hirſute: awn an inch and half in length. It flowers in the ſummer, and when bruiſed has an unpleaſant balſamic ſmell.

76. Root round, the thickneſs of the little finger, half a foot long. Stem procumbent, twiſted, ſhrubby, branched, the ſame ſize with the root, brown, rough with the indurated ſcars of fallen leaves; when young fleſhy and hirſute. Leaves on long petioles: pinnas oppoſite; pinnules linear, acute, quite entire, ſeſſile. Stipules lanceolate, acute, faſtened to the petiole on each ſide. Peduncles hirſute, roughiſh, ſpreading, three or four inches long, ſuſtaining from three to five flowers in an umbel. Leaflets of the involucre commonly five, lanceolate, acuminate, ciliate, ſpreading, green. Pedicels ſhort, hirſute, grooved to the middle. Calycine leaflets lanceolate, acute, hirſute, ſpreading, the upper one twice as wide as the reſt. Petals ſpatulate, blunt, ſpreading, red purple; the two upper ones nearly twice as wide as the others and of a deeper colour. Seven of the filaments have fleſh-coloured anthers with a yellow pollen. Germ hirſute. Stigma blood-red. It flowers in march and april; and has little ſmell, but that unpleaſant.

77. Root branched. The whole plant is covered very cloſely with villoſe hairs, and has a ſtrong unpleaſant ſmell. Stem ſhrubby, branched, erect, round, knobbed, two feet high and more. Leaves alternate, three-lobed or five-lobed, bluntiſh, veined, thickiſh, three or four inches in length and breadth; petioles as long or longer, round, the thickneſs of a pigeon's quill and ſpreading. Stipules from a wider baſe lanceolate-acuminate, in a ſhort time becoming dry and of a ruſt-colour. Peduncles terminating, ſolitary, in pairs or threes, about three inches in length, the thickneſs, at moſt, of a pigeon's quill, almoſt erect or ſpreading a little. Leaflets of the involucre to the compound umbel ſeveral; to the ſimple and partial umbels commonly ſix, lanceolate, acute, ſpreading very much, green. Peduncles of the particular umbels about two inches long. Pedicels about ſix, an inch long, very ſhortly grooved, green, duſky purple above. Calycine leaflets lanceolate, acute, hirſute underneath and at the edges, ſlightly ſtriated, ſpreading very much; the upper one twice as wide as the reſt. Petals oblong, blunt, a little longer than the calyx, white with a little longitudinal red band at the claw; the two upper ones ſpreading very much and three times as wide as the three lower ones, which are extended downwards. Filaments blood-red, the length of the calyx. Anthers oblong, fleſh-coloured. Germ hirſute. Stigma blood-red. It flowers in april and the following months.

78. Root branched. The whole plant has a ſtrong ſmell. Stem ſhrubby, the thickneſs of a finger, round, irregular with projecting ſcars, erect, firm, branched, three feet high, when young hirſute, when old ſmooth and brown. Branches hirſute, pale green. Leaves ſcattered, roughiſh, wrinkled underneath, ſtiffiſh; the uppermoſt oppoſite: lobes ſharpiſh: petioles round, hirſute, commonly longer than the leaf. Stipules from a broad ſubcordate baſe acuminate or cuſped, hirſute, ciliate, ſpreading very much. Peduncles oppoſite to a leaf and axillary, hirſute, an inch or two in length, ſpreading. Umbel from five to ten-flowered, having the pedicels bent outwards. Leaflets of the involucre five or more, lanceolate, acuminate, hirſute, ciliate, ſpreading very much, green. Pedicels at moſt an inch long, grooved to the middle and jointed, hirſute, ſpreading very much, green. Calycine leaflets lanceolate, acute, half rolled back, hirſute, green; the upper one twice as wide as the reſt. Petals blunt, ſnow white without any ſpot; the two upper ones longer, three times as wide as the others, wedge-ſhaped, emarginate, half turned back; the three lower ſublinear, quite entire, ſtretched forwards. Filaments awl-ſhaped, erect, white, ſeven fertile. Anthers oblong, incumbent, orange-coloured. Stigma purple. Fruit hirſute. It flowers from june to auguſt, and has a ſtrong ſmell.

79. Stem three or four feet high, round, branched, browniſh, with aſh-coloured ſcars from the fallen leaves. Stipules acuminate, toothed, ſmooth, appearing in the magnifier ciliate along the edge, often as broad as they are long. Leaves alternate, except on the flowering branches, where they are commonly oppoſite, three-lobed or almoſt five-lobed, a little rough-haired only along the dorſal veins, which are very protuberant; the lower ones leſs deeply divided into rounder lobes, much larger and unſpotted, the others more deeply divided into oblong lobes, with a ferruginous or browniſh blood-red zone on the upper ſurface. Petioles round, rough, the lower ones twice as long as the leaf. Peduncles axillary, alternate, erect, ſomewhat rugged, the lower often oppoſite to a leaf. Leaflets of the involucre four or five, ovate, ciliate, caducous. Pedicels an inch long, rough, green, jointed about the

middle, and thence to the top thicker and grooved. Calycine leaflets lanceolate, rough, acuminate, ciliate, green; the four lower reflex, the upper one wider and erect. Petals blunt, spreading: the three lower oblong, shorter, pale rose colour; the two upper wedge-shaped, three times as wide as the lower ones, twice as long as the calyx, all over dark red, with longitudinal bands of a much darker red. Filaments short, seven of them fertile. Anthers oblong, yellow. Germ hirsute. Style somewhat hairy. Stigma villose, blood-red. It flowers here in the summer. The leaves have hardly any smell. The flowers have rather a disagreeable scent.

80. From a branched root arise very many weak stems, two feet high and more, round, smooth, almost upright, of a pale bay colour, irregular from the scars of fallen leaves. Stipules lanceolate-oblong, acuminate, smooth, ciliate with whitish soft prickles, dusky purple. Leaves mostly opposite, three or five-lobed, beneath along the principal veins a little rough-haired, green above, glaucous or sometimes purplish underneath: petioles very long, round, somewhat rugged, spreading out horizontally. The floral leaves are sessile. Peduncles alternate. Leaflets of the involucre four or five, lanceolate, acuminate, smooth, ciliate, purple. Pedicels purple, an inch and half long, smooth, jointed, from the joint to the top thicker and grooved. Calycine leaflets lanceolate, acuminate, ciliate, green, four of them reflex, the upper one erect and a little wider than the others. Petals wedge-shaped, blunt, pale rose-colour, spreading; the two upper ones emarginate, almost twice as wide as the three others, and having a red band below the middle. Anthers blood-red. Germ hirsute. Stigma villose above, blood-red. It flowers in summer, and has little smell.

81. Stem upright, three feet high, woody, very much branched, ferruginous, when young red, round, roughish, appearing rough-haired in the magnifier, the thickness of a finger at the base. Leaves alternate except the uppermost which are opposite, approximating, numerous, rigid, petioled: lobes thickish, pinnatifidly and acutely gashed, a little converging or somewhat cowled, about an inch and half in length. Stipules in pairs or threes, lanceolate, acuminate, somewhat rough-haired, spreading very much, brownish. Peduncles axillary, round, somewhat rough-haired, sustaining from one to three flowers. Leaflets of the involucre few, lanceolate, acute, villose, spreading very much, of the same colour with the stipules. Pedicels half an inch long, jointed above and thence very shortly grooved. Calycine leaflets lanceolate, acuminate, villose, spreading. Petals flesh-coloured, spreading very much; the two upper ones obovate, emarginate or quite entire, twice as wide as the three lower, which are oblong, narrow, blunt, quite entire. Seven filaments fertile. Anthers oblong, yellow. Germ ovate, hirsute. Style white. Stigma blood-red. It flowers in summer, and the whole plant has a balsamic scent approaching to that of Tacamahaca.

82. Stem four or five feet high, almost upright: branches rod-like, round, ferruginous: these with the leaves, stipules, peduncles, involucres and calyxes are very shortly rough-haired. Leaves closely distich or in two rows all along the branches, the upper ones converging, the lower spreading, alternate, rigid, thickish, on very short petioles, three-nerved, from a quite entire wedge-form base widening above into a rounded gash-toothed prickly-ciliate circumference; the largest scarcely an inch in length. In the axils of these there are two or more very small ones, from the middle of which a new branch frequently arises. Stipules two, cordate, acuminate, small, ciliate. Peduncles terminating, solitary, short, erect. Leaflets of the involucre five lanceolate, acute, almost upright, green. Pedicels scarcely an inch long, erect. Calycine leaflets lanceolate, acuminate, green; four of them reflex, the upper one erect and wider. Petals white or tinged with flesh-colour, twice as long as the calyx; the two upper ones spatulate, rounded at top, erect, with two parallel lines at the base; the three lower linear-oblong, bent forwards, three times narrower than the others. Filaments flesh-coloured, one-third shorter than the petals, seven fertile. Anthers vermilion. Germ silky. Style blood-red, hirsute. Stigma blood-red. Seed acuminate at the base, silky with a bearded awn. It has little smell. After flowering whilst the seeds are growing, young branches are pushed out beyond them, and the peduncles cease to be terminating.

It is easily distinguished from *P. crispum* by having no smell, or at most a slight smell of turpentine when bruised: the leaves are larger, always on very short petioles, of a true wedge shape, scarce obsolerely three-lobed, scarce curled, and the stature of the whole is much greater.]

PROPAGATION AND CULTURE.

All the sorts of Pelargonium or African Crane's-bill may be propagated by seeds; they may be sown upon a bed of light earth towards the end of march, where the plants will appear in a month or five weeks after, and by the beginning of june the plants will be fit to remove; when they should be carefully taken up, and each planted into a separate pot, filled with light kitchen-garden earth, and placed in a shady situation till the plants have taken new root; then they may be removed into a sheltered situation, and placed among other of the hardier green-house plants, where they may remain till autumn, when they must be removed into the green-house, and treated in the same manner as other hardy kinds of green-house plants.

But those who are desirous to have their plants large, and flower soon, sow the seeds upon a moderate hot-bed in the spring, on which the plants will come up much sooner, and will be fit to remove long before those which are sown in the open air; but when these plants come up, there must be great care taken not to draw them up weak; and when they are transplanted, the pots should be plunged into another moderate hot-bed, observing to shade them from the sun till they have taken new root; then they must be gradually inured to bear the open air, into which they should be removed the beginning of june, and placed in a sheltered situation with other exotic plants. If these plants are brought forward in the spring, most of the sorts will flower the same summer, and the plants being strong before the winter, will make a better appearance in the green-house.

The shrubby African Geraniums are commonly propagated by cuttings, which, if planted in a shady border in june or july, will take good root in five or six weeks, and may then be taken up and planted into separate pots, placing them in the shade till they have taken new root; after which they may be removed into a sheltered situation, and treated in the same manner as the seedling plants. The seventeenth, nineteenth, twentieth, and thirty-fourth sorts, have more succulent stalks than the others, the cuttings therefore of these sorts should be planted in pots filled with light kitchen-garden earth, and plunged into a very moderate hot-bed, where they should be shaded from the sun in the heat of the day, and have but little water; for these are very apt to rot with much moisture. When these are well rooted, they may be separated and planted in pots filled with the same sort of earth, and placed in the shade till they have taken new root; then they may be removed into a sheltered situation, where they may remain till autumn. These four sorts should be sparingly watered, but especially in the winter, for they are apt to take a mouldiness with moisture, or in a damp air: they will thrive much better in an airy glass-case than in a green-house, because in the former they will have more sun and air than in the latter. But all the other shrubby sorts are proper furniture for the green-house, where they will only require protection from frost, but should have a large share of free air when the weather is mild, they will require water every week, in mild weather once or twice, but it should not be given them in too great plenty, especially in frosty weather. These plants should be hardened in the spring gradually, and towards the middle or end of may, they may be taken out of the green-house, and at first placed under the shelter of trees, where they may remain a fortnight or three weeks to harden;

harden; then ſhould be removed into a ſituation where they may be defended from ſtrong winds, and enjoy the morning ſun till eleven o'clock, where they will thrive better than in a warmer ſituation.

As theſe ſhrubby ſorts grow pretty faſt, they ſoon fill the pots with their roots; and if they ſtand long unremoved in ſummer, they frequently put out their roots through the holes at the bottom of the pots into the ground, and then the plants will grow vigorouſly; but when they are ſuffered to grow long in this manner, it will be difficult to remove them, for if their roots are torn off, all the younger branches will decay, and many times the plants are killed. Therefore the pots ſhould be moved once in a fortnight or three weeks, in the ſummer months, and the roots which may be then puſhing through the holes in the pots cut off, to prevent their ſtriking into the ground.

Theſe plants will alſo require to be new potted at leaſt twice in the ſummer; the firſt time ſhould be after they have been three weeks or a month out of the green-houſe; the ſecond ſhould be towards the end of auguſt, or the beginning of ſeptember, that the plants may have time to eſtabliſh their new roots before they are removed into the green-houſe.

When theſe are new potted, all the roots on the outſide of the balls of earth ſhould be carefully pared off, and as much of the old earth drawn away from the roots, as can be done with ſafety to the plants; then if they require it, they ſhould be put into pots a ſize larger than thoſe out of which they were taken, putting a quantity of freſh earth into the bottom of the pot; then place the plants upon that, being careful the ball about the roots of the plant is not ſo high as the rim of the pot, that ſome room may be left to contain the water which may be given to the plants. Then the cavity all round the ball ſhould be filled up with freſh earth, which ſhould be gently preſſed down, and the bottom of the pot beaten upon the ground, to ſettle down the earth; then the plant ſhould be well watered, and the ſtem faſtened to a rail, to prevent the wind from diſplacing the roots before they are fixed in the new earth.

The compoſt in which theſe plants thrive beſt (where there is not a conveniency of getting ſome good kitchen garden earth) is freſh hazel loam from a paſture, mixed with a fourth or fifth part of rotten dung; if the earth is inclinable to bind, then a mixture of rotten tan is preferable to dung; but if it is light and warm, then a mixture of neat's-dung is beſt: this compoſt ſhould be mixed three or four months before it is uſed, and ſhould be turned over three or four times, that the parts may be well mixed and incorporated; but where a quantity of good kitchen-garden earth can be had, which has been well worked, and is clean from the roots of bad weeds, there will need no compoſition, for in that they will thrive full as well as in any mixture which can be made for them, eſpecially if the earth has lain in a heap for ſome time, and has been two or three times turned over to break the clods, and make it fine: theſe plants ſhould not be planted in very rich earth, for that will cauſe them to grow very luxuriant, but they will not flower ſo well as in a poorer ſoil.

The ſhrubby ſorts muſt be looked over frequently during the winter, whilſt they are in the green-houſe, to pick off all decayed leaves from them, which, if left on, will not only render the plants unſightly, but by their falling off, will make a litter among the other plants; and if they are ſuffered to rot in the houſe, they will occaſion a foul, naſty, damp air, which will be very prejudicial to all the plants; therefore to avoid this, they ſhould be conſtantly picked off every week; and during the ſummer ſeaſon, they will require to be picked every fortnight or three weeks to keep them clean from dead leaves; for as the branches advance, and new leaves are produced on their tops, the under ones as conſtantly decay; and if left on till they drop off, will render the plants very unſightly.

The ſpecies of the two firſt diviſions are generally increaſed by parting the roots in auguſt. Every tuber will grow, if it has a bud or eye to it. They may be planted in the ſame ſort of earth as was before directed; and if the pots are plunged into an old tan-bed, under a good frame in winter, the plants will thrive better than in a green-houſe: the glaſſes may be drawn off every day in mild weather; and if in ſevere froſt the glaſſes are well covered, it is all the ſhelter they require: they ſhould have little wet in winter, and therefore the glaſſes ſhould be kept over them in heavy rains, or in mild weather raiſed only at the top. They may alſo be propagated by ſeeds.

8. This having herbaceous ſtalks is beſt propagated by ſeeds. The cuttings indeed will take root, but ſeedling plants are preferable. Where the ſeeds of this, and many other ſorts are permitted to ſcatter, there will be a ſupply of young plants the ſpring following, provided the ſeeds are not buried too deep in the ground.

9. This may be propagated by ſeeds, or from heads ſlipped off from the ſhort fleſhy ſtalk: theſe heads ſhould have their lower leaves ſtripped off, and then be planted ſingle in a ſmall pot; or if the heads are ſmall, two or three may be put into one pot. Plunge them into a very moderate hot-bed, ſhade them, and refreſh them gently with water; they will take root in a month or five weeks; then harden them gradually to the open air, where they may remain till autumn, when they muſt be removed into ſhelter for the winter ſeaſon.

10. Sow the ſeeds on a moderate hot-bed or on an open bed of light earth in the ſpring. The latter will require only to be kept clean from weeds, and to be thinned where they are too cloſe; they will flower in july and auguſt, and if the autumn prove favourable, the ſeeds will ripen in ſeptember. Thoſe which were raiſed on the hot-bed will come earlier to flower, and more certainly perfect ſeeds. Some of theſe plants put into pots, plunged into an old tan-bed under a frame, and treated as directed for the tuberous-rooted ſorts, may be preſerved through the winter.

14. Being an annual plant, is propagated by ſeeds, ſown on a gentle hot-bed in the ſpring. When the plants are ſtrong enough to remove, plant each in a ſeparate ſmall pot, plunged into a moderate hot-bed, ſhaded, and gradually hardened to the open air, into which they may be removed in june: when the plants have filled the pots with their roots, ſhake them out, preſerving a ball of earth to their roots, and put them into pots a ſize larger: in theſe they will flower and ripen ſeeds, ſoon after which the plants will decay.

[18. This may be increaſed both by ſeeds and cuttings, but is found to be more tender than many other ſorts, and more liable to be injured by damps.

23. Readily increaſed by cuttings.

31. This is not diſpoſed to ripen its ſeeds, nor is it very readily increaſed by cuttings.

34. Readily propagated by cuttings, and ſometimes raiſed from ſeeds.

38. Readily ſtrikes from cuttings.

39. In favourable ſeaſons produces ſeeds, but is more uſually increaſed by cuttings.

40. 47. Readily propagated by cuttings.

48. This ſpecies rarely ripens its ſeeds with us, and is therefore uſually raiſed from cuttings, which are not very free in ſtriking.

55. Raiſed from cuttings without difficulty.

56. Moſt of the branches in this ſpecies running out ſpeedily into flowering ſtalks, form few proper for cuttings, and theſe are ſtruck with difficulty. Perfect ſeeds are produced ſparingly[1].

PELECINUS. See *Biſtrnla.*

PELLITORY, BASTARD. See *Achillea.*

———— of Spain. See *Anthemis.*

———— of the Wall. See *Parietaria.*

PELORIA. See *Antirrhinum.*]

PELTARIA. (*From the form of the ſeed-veſſel, round and flat, like the* Pelta *or round ſhield.*)

Lin. gen. n. 806. *Reich. n.* 871. *Schreb. n.* 1083. *Jacqu. vind.* 260. *Gaertn. t.* 141. Clypeola. *Juſſ.* 240.

Claſſ. 15. 1. Tetradynamia Siliculoſa.

Nat. order of *Siliquoſæ, Cruciformes* or *Cruciferæ.*

[1] Curtis magaz.

GENERIC

GENERIC CHARACTER.

CAL. *Perianth* four-leaved: *leaflets* ovate, concave, erect, coloured, deciduous.

COR. four-petalled, cruciform. *Petals* obovate, entire, flat, with claws shorter than the calyx.

STAM. *Filaments* six awl-shaped: of these two opposite shorter, the length of the calyx. *Anthers* simple.

PIST. *Germ* roundish, compressed. *Style* short. *Stigma* simple, blunt.

PER. *Silicle* entire, suborbiculate, compressed-flat, one-celled, not opening.

SEED single, (one to three, *G.*) roundish, compressed-flat, emarginate.

ESSENTIAL CHARACTER.

Silicle entire, suborbiculate, compressed-flat, not opening.

SPECIES.

1. Peltaria alliacea. *Garlick-scented Peltaria.*
Lin. spec. 910. *syst.* 591. *ed.* 13. 494. *Reich.* 3. 239. *suppl.* 295. *Jacqu. austr.* 2. 14. *t.* 123. *Scop. carn. n.* 784. *Gærtn. fruct.* 2. 284.
Bohadschia. *Crantz. austr.* 5. *t.* 1. *f.* 1.
Clypeola. *Ard. spec.* 26. *t.* 16.
Thlaspi montanum glasti folio majus. *Bauh. pin.* 106. *Rais hist.* 841. *Park. theat.* 841.
T. montanum 1. *Clus. hist.* 2. 130.
T. pannonicum Clus. *Ger.* 208. 2. *emac.* 266. 2.
Leaves embracing oblong undivided.

[2. Peltaria capensis. *Cape Peltaria.*
Lin. syst. 591. *suppl.* 296.
Stem-leaves quinate-pinnate linear somewhat fleshy.]

DESCRIPTIONS, *&c.*

1. This is a biennial plant, and generally dies soon after the seeds are perfected. It rises with an upright branching stalk about a foot high. Leaves heart-shaped, smooth. White flowers terminate the stalk in form of umbels. [Silicle obovate or orbiculate-pedunculed, not emarginate, leafy-compressed, coriaceous, somewhat rigid, netted-veined, smooth, valveless, and not divisible into regular valves with a knife. Seeds one to three, seldom more, ovate-reniform, compressed a little, ferruginous, supported by capillary threads proceeding from each edge of the silicle and verging towards the centre [k].

Native of Austria. Cultivated in 1768 by Mr. Miller. It flowers in may [l].

2. Stem upright, branched, round, even, a foot high, leafy. Leaves alternate, pinnate; segments five, linear, smooth, acute. Racemes long, with the pedunculs and calyxes scarcely pubescent. Petals white, subemarginate, four times as big as the calyx, spreading, sessile. Silicle roundish or ovate, entire, with the partition parallel. Seeds in the centre as in *Clypeola*, solitary in each cell, compressed.—Native of the Cape of Good Hope [m].]

PROPAGATION AND CULTURE.

1. This is easily propagated by seeds, which ripen in july, and may be sown in small patches in the borders of the flower-garden at the beginning of april. When the plants are up, leave four or five in each patch; pulling the others out, to give these room to grow. Keep them clean from weeds.

[PEMPHIS. See *Lythrum.*

PENÆA. (*So named by Linnæus from Peter Pena, who in conjunction with Lobel published* Adversaria Botanica, 1570. Penæa *of Plumier, is a species of* Polygala, *according to Linnæus.*)
Lin. gen. n. 138. *Reich. n.* 144. *Schreb. n.* 182. *Juss.* 419.
Class. 4. 1. Tetrandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* two-leaved: *leaflets* opposite, lanceolate, concave, equal, coloured, shorter by half than the corolla, loose, deciduous.

COR. one-petalled, bell-shaped: *border* four-cleft, spreading a little, much shorter than the tube; *segments* sharp.

STAM. *Filaments* four, awl-shaped, extremely short, placed on the tube of the corolla between the divisions of it, upright, naked. *Anthers* upright, flattish, emarginate both ways.

PIST. *Germ* ovate, four-cornered. *Style* four-cornered by four membranaceous longitudinal wings. *Stigma* cruciform, blunt, permanent.

PER. *Capsule* four-cornered, furnished with the style, four-celled, four-valved.

SEEDS two, somewhat oblong, blunt.

ESSENTIAL CHARACTER.

Cal. two-leaved. *Cor.* bell-shaped. *Style* quadrangular. *Caps.* four-cornered, four-celled, eight-seeded.

SPECIES.

1. Penæa Sarcocolla. *Ovate-leaved Penæa.*
Lin. spec. 162. *Reich.* 1. 315. *Willd.* 626. *mat. med.* 51. *Pluk. mant. t.* 436. *f.* 6.
Leaves ovate flat, calyxes ciliate larger than the leaf.

2. Penæa mucronata. *Heart-leaved Penæa.*
Lin. spec. 162. *syst.* 138. *Reich.* 1. 315. *Willd.* 626. *hort. cliff.* 37. *Thunb. prodr.* 30. *Berg. cap.* 37.
Eriea africana Unedonis flore amplo, foliis cordiformibus in acumen desinentibus. *Sher. Raii dendr.* 97.
Flowers terminating, leaves acuminate smooth.

3. Penæa marginata. *Margined Penæa.*
Lin. mant. 199. *syst.* 154. *Reich.* 1. 316. *Willd.* 627.
Leaves cordate margined, flowers lateral.

4. Penæa lateriflora. *Side-flowering Penæa.*
Lin. suppl. 122. *syst.* 154. *Willd.* 627. *Thunb. prodr.* 30.
Leaves ovate, flowers lateral sessile.

5. Penæa tomentosa. *Downy-leaved Penæa.*
Lin. spec. ed. Willd. 627. *Thunb. prodr.* 30.
Leaves ovate tomentose, flowers lateral.

6. Penæa fucata. *Painted Penæa.*
Lin. mant. 199. *syst.* 154. *Reich.* 1. 316. *Willd.* 627. *Thunb. prodr.* 30.
P. Sarcocolla. *Berg. cap.* 25.
Leaves rhomb-ovate, bractles wedge-shaped acute coloured.

7. Penæa squamosa. *Scaly Penæa.*
Lin. spec. 162. *Reich.* 316. *Willd.* 628. *mant.* 331. *Thunb. prodr.* 30.
Leaves rhomb-wedge-shaped, fleshy.

8. Penæa fruticulosa. *Shrubby Penæa.*
Lin. suppl. 121. *syst.* 154. *Willd.* 628. *Thunb. prodr.* 30.
Leaves somewhat oblong blunt, bractles orbiculate acute.

9. Penæa Myrtoides. *Myrtle-leaved Penæa.*
Linn. suppl. 122. *syst.* 154. *Willd.* 628.
P. Myrtilloides. *Thunb. prodr.* 30.
Leaves lanceolate.

DESCRIPTIONS, *&c.*

These are shrubs, rugged below with the vestiges of fallen leaves, leafy above; leaves opposite cross-wise, sessile, approximating imbricately in a fourfold row, the upper ones near the flowers like scales and coloured, whence the calyx in some species is as it were many-leaved and imbricated; flowers terminating, sessile, solitary or several heaped together; fruit as in the order of *Acanthi*, but four-celled. Perhaps this genus may be allied to them, but having been hitherto little examined except in dried specimens, the natural order of the genus *Penæa* must yet remain uncertain [n].

1. Leaves blumtish. Corollas blunt. Calyx to the middle flower none. Style more awl-shaped than in the rest.

2. Flowers red. Style four-cornered [o]. Leaves on the stems and branches frequent, sessile. Flowers at the ends of the branches, heaped together [p].—Introduced in 1787, by Masson [q].

3. This is a stiff shrub, with the branches commonly in threes. Leaves opposite or in threes, subsessile, bluntish, shining, with the edge curved back, the size of Box-leaves. Flowers among the leaves, subsessile, not longer than the leaves, white [r].

4. Stems red, with elongated branches. Leaves sessile, exactly ovate, even, sharpish, quite entire, al-

[k] Gærtner. [l] Hort. kew. [m] Linn. suppl.
[n] Juss. gen. [o] Linn. spec. & syst. [p] Ray.
[q] Hort. kew. [r] Linn. mant.

moſt keeled under the baſe, longer than the interſtices. Flowers in the axils of the leaves, yellow, the length of the leaves. Calyx four-leaved, yellow, ſcariole, the length of the leaves. Segments of the corolla lanceolate, three-ſided or keeled within, the keel cut out at the baſe. Filaments none. Anthers in the throat of the corolla. Stigma blunt, four-cornered [1].

Willdenow doubts whether this be diſtinct from the preceding.

5. Of this we have no deſcription.

6. Branches very numerous, round; branchlets angular. Leaves ovate, narrower at the baſe, acute, ſpreading, even. Flowers purple, in terminating bundles. Bractes ſmaller than the leaf, purple.

7. Leaves even, with a longitudinal line, ſubglandular at the tip. Bractes of the ſpike, twice as broad as the leaf, ciliate, reſinous and unctuous. Corollas rather large [2].—Introduced in 1787, by Maſſon [3].

8. This is a little ſhrub with round branches. Leaves ſubpetioled, oval or ſomewhat oblong, thickiſh, veinleſs, remote. Floral leaves ſmall, rhomb-orbiculate, or orbiculate-acute. Flowers at the ends of the branches, ſubſolitary, on very ſhort peduncles, ſharpiſh.

9. Branches upright round red. Leaves ſeſſile cluſtered even, like thoſe of *Myrtus tarentina*, ſcarcely nerved underneath. Flowers terminating, ſubſolitary, ſurrounded by ſharp green bractes, under which are two ſmall leaves. Calyx acute, green, not at all coloured [4].

All theſe ſhrubs are natives of the Cape of Good Hope. Loureiro has added two ſpecies, natives of Cochinchina: Penæa nitida, which he thinks is allied Linnæus's P. Myrtoides; and Penæa ſcandens to P. marginata. He allows that they are not conformable to Linnæus's generic character: and indeed they certainly belong to another genus.

PENÆA. See *Polygala*.

PENAR-VALLI. See *Zanonia*.

PENNANTIA. (*So named by Forſter in honour of Thomas Pennant, Eſq. of Downing in Flintſhire, author of various works in Natural hiſtory, &c.*)

Lin. gen. Schreb. n. 1602. *Forſt. gen. t.* 67. *Juſſ.* 428.

Claſſ. 23. 2. Polygamia Dioecia.

GENERIC CHARACTER.

* *Hermaphrodite Flower.*

CAL. none.

COR. *Petals* five, lanceolate, acute, ſpreading very much.

STAM. *Filaments* five, capillary, the length of the petals. *Anthers* oblong, incumbent.

PIST. *Germ* ſuperior, obtuſely three-cornered. *Style* none. *Stigma* flat, peltated, ſubtrilobate.

PER. three-ſided, two-celled.

SEEDS ſolitary, ſubtriquetrous.

* *Male Flower.*

CAL. and COR. as in the Hermaphrodite.

STAM. *Filaments* five, capillary, twice as long as the petals. *Anthers* ovate, incumbent.

ESSENTIAL CHARACTER.

Cal. none. *Cor.* five-petalled. *Stam.* five. *Per.* three-ſided, two-celled, with ſolitary ſubtriquetrous ſeeds.

SPECIES.

1. Pennantia corymboſa.

Forſt. gen. 134. *flor. auſtral. n.* 396.

Native of New Zealand.

PENNY-GRASS. See *Rhinanthus*.]

PENNY-ROYAL. See *Mentha Pulegium*.

[PENNY-WORT. See *Hydrocotyle*.

PENTAGONIA. See *Campanula*.

PENTAGONOTHECA. See *Piſonia*.]

PENTAPETES (*of Pliny. Perhaps from* πεντε *five, and* πετομαι, *pando or* πετομαι, *volo.*)

Lin. gen. n. 834. *Reich. n.* 899. *Schreb. n.* 1122. *Juſſ.* 276. *Gærtn. t.* 134.

Claſſ. 16. 5. Monadelphia Dodecandria.

Nat. order of *Columniferæ*. *Malvaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* double: *outer* three-leaved, one-ſided, caducous; *leaflets* linear, acuminate: *inner* one-leafed, five-parted, permanent; *ſegments* lanceolate, acuminate, ſpreading, longer than the corolla.

COR. *Petals* five, roundiſh, ſpreading, faſtened to the pitcher of ſtamens.

STAM. *Filaments* fifteen, filiform, upright, ſhorter than the corolla, united below into a pentagon pitcher, but free above. *Anthers* ſagittate, upright. *Ligules* five, linear-lanceolate, petal-ſhaped, upright, each between every three ſtamens, ſpringing from the pitcher.

PIST. *Germ* ovate. *Style* filiform, thickened above, ſtriated, longer than the ſtamens, permanent. *Stigma* obſoletely five-toothed.

PER. *Capſule* membranaceous, ſubglobular, acuminate, five-celled, five-valved: *partitions* contrary.

SEEDS eight, ovate, acute, four on each ſide, faſtened within ſide to the partition.

ESSENTIAL CHARACTER.

Cal. double: outer three-leaved; inner five-parted. *Stam.* fifteen, with five ligules, petal-ſhaped. *Capſ.* five-celled, many-ſeeded.

SPECIES.

1. Pentapetes phœnicea. *Scarlet-flowered Pentapetes.*

Lin. ſpec. 958. *ſyſt.* 619. *Reich.* 3. 300. *Lour. cochinch.* 409. *Mill. fig. t.* 200. *Mill. illuſtr. Gærtn. fruct.* 2. 248.

Alceæ indicæ cognata. *Plak. phyt. t.* 255. *f.* 3. *Trew. var* 7. *t.* 5.

A. fruticoſa, &c. *Plak. phyt. t.* 126. *f.* 4.

Blattaria zeylanica, &c. *Comm. hort.* 1. 11. *t.* 6. *Raii ſuppl.* 523.

Flos impius. *Rumph. amb.* 5. 288. *t.* 100. *f.* 1.

Naga-puo. *Rheed. mal.* 10. 111. *t.* 56. *Plak. phyt. t.* 256. *f.* 3.

Leaves baſtate-lanceolate ſerrate.

DESCRIPTION, &c.

1. This is an annual plant which dies in the autumn, ſoon after it has ripened the ſeeds. It has an upright ſtalk from two to near three feet high, ſending out ſide branches the whole length; thoſe from the lower part of the ſtalks are the longeſt, the others gradually diminiſh, ſo as to form a ſort of pyramid. They are garniſhed with leaves of different forms; the lower leaves, which are largeſt, are cut on their ſides towards the baſe into two ſide lobes which are ſhort, and the middle is extended two or three inches farther in length, ſo that the leaves greatly reſemble the points of halberts in their ſhape; they are ſlightly ſerrate, and of a lucid green on their upper ſide, but paler on their under, ſtanding upon pretty long foot-ſtalks. The leaves which are on the upper part of the branches are much narrower, and ſome of them have very ſmall indentures on their ſides; they ſit cloſer to the ſtalks, and are placed alternately. The flowers are axillary; they come out for the moſt part ſingly, but ſometimes there are two ariſing at the ſame place from the ſide of the foot-ſtalk of the leaves. The peduncle is ſhort and ſlender. The flower is of one petal, cut into five obtuſe ſegments almoſt to the bottom, but as they are joined and fall off in one piece, the flower is monopetalous, according to Ray and Tournefort: [but Linneus makes it pentapetalous.] It is of a fine ſcarlet colour; appears in July, and the ſeeds ripen in the autumn.

Native of India, whence Mr. Miller received the ſeeds ſeveral times. [But it was cultivated at Hampton Court in 1690 [7].

It is alſo a native of Japan, according to Thunberg, and is cultivated both in China and Cochinchina according to Loureiro.

Linneus deſcribes the cotyledons as two-parted; the peduncles as axillary and twin; the involucre as one-flowered, three-leaved and deciduous; the flowers drooping; the ſtamens as fifteen, and between each three a caſtrated filament, the length of the corolla, petaloid and coloured.

[1] Linn. ſuppl. [2] Linn. mant. [3] Hort. kew. [4] Linn. ſuppl.

[7] Hort. kew.

Loureiro remarks, in correſpondence with the generic character as given above, that the five leaflets of the nectary are improperly called caſtrated filaments, being ſo different from them in ſize, figure and ſituation. He regards the tubular, five-cornered body on which the ſtamens are placed rather as the nectary, than as the coaleſcent filaments.

He deſcribes the ſtem as five feet high, upright, round, ſtraight, with few aſcending branches; the leaves as cared-haſtate at the baſe, thence awl-ſhaped and ſerrate; alternate, on ſhort petioles; the flowers as ſolitary, expanding at noon, and falling in the evening. Calyx inferior, five-leaved, ſpreading, permanent: leaflets lanceolate, curved in, ciliate-hairy, with a reflex acuminate point. Petals blunt, ſubequilateral, ſpreading out very much in a wheel-ſhape. Nectary tubular, five-cornered, ſhort, ſupporting five, lanceolate, erect, concolor leaflets. Filaments awl-ſhaped, placed on the nectary, ſhorter than the leaflets of it, and deciduous with it. Style turbinate-linear, five-cornered, equal to the petals. Stigma ſimple. Capſule ovate. Seeds in a double row, angular towards the centre, convex outwardly.]

PROPAGATION AND CULTURE.

1. The ſeeds of this plant muſt be ſown upon a good hot-bed early in march, and when the plants are fit to tranſplant, there ſhould be a new hot-bed prepared to receive them, into which ſhould be plunged ſome ſmall pots filled with good kitchen-garden earth; in each of theſe ſhould be one plant put, giving them a little water to ſettle the earth to their roots; they muſt alſo be ſhaded from the ſun till they have taken new root, then they ſhould be treated in the ſame way as other tender exotic plants, admitting the free air to them every day in proportion to the warmth of the ſeaſon, and covering the glaſſes with mats every evening to keep them warm. When the plants are advanced in their growth ſo as to fill the pots with their roots, they ſhould be ſhifted into larger pots, filled with the ſame ſort of earth as before, and plunged into another hot-bed, where they may remain as long as they can ſtand under the glaſſes of the bed without being injured; and afterwards they muſt be removed either into a ſtove or a glaſs-caſe, where they may be ſcreened from the cold, and in warm weather have plenty of freſh air admitted to them. With this management the plants will begin to flower early in july, and there will be a ſucceſſion of flowers continued till the end of ſeptember, during which time they will make a good appearance. The ſeeds ripen gradually after each other in the ſame ſucceſſion as the flowers were produced, ſo they ſhould be gathered as ſoon as their capſules begin to open at the top.

Theſe plants are ſometimes turned out of the pots, when they are ſtrong, and planted in warm borders, where, if the ſeaſon prove very warm, the plants will flower pretty well; but theſe very rarely perfect their ſeeds.

[PENTAPETES. See *Pteroſpermum*.]

PENTAPHYLLOIDES. See *Potentilla*. [*Sibbaldia*.

PENTAPHYLLUM. See *Cleome*, *Camarum*, *Potentilla*, *Tormentilla*.

PENTAPTERIS, and PENTAPTEROPHYLLUM. See *Myriophyllum*.]

PENTHORUM.

Lin. gen. 580. *Reich. n.* 630. *Schreb. n.* 790. *Gron. virg.* 51. *Gærtn. t.* 65. *Juſſ.* 308.

Claſſ. 10. 4. Decandria Pentagynia.

Nat. order of *Succulentæ*. *Sempervivæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five or ten-cleft, acute, permanent.

COR. *Petals* often five (ſeldom none) linear, very ſmall, between the ſegments of the calyx.

STAM. *Filaments* ten, briſtle-ſhaped, equal, twice as long as the calyx, permanent. *Anthers* roundiſh, deciduous.

PIST. *Germ* coloured, ending in five, conical, upright *Styles*, the ſame length with the ſtamens, and diſtant. *Stigmas* blunt.

PER. *Capſule* ſimple, five-cleft, with conical, diſtant angles, five-celled.

SEEDS numerous, very ſmall, a little compreſſed.

OBS. *It differs from* Sedum *in having no nectaries.*

ESSENTIAL CHARACTER.

Cal. five (or ten) cleft. *Pet.* none or five. *Capſ.* five-culped, five-celled: (compound, five-beaked, *G.*)

SPECIES.

1. Penthorum Sedoides. *American Penthorum.*
Lin. ſpec. 620. *ſyſt.* 431. *Reich.* 2. 386. *mant.* 389. *Gron. virg.* 51. 71. *Ait. upſ.* 1744. *p.* 12. *t.* 2. *Gærtn. fruct.* 1. 312.

DESCRIPTION, *&c.*

Stalks about a foot high. Leaves oblong, alternate, Flowers greeniſh-yellow in terminating cluſters, making little appearance. [Stem herbaceous, diffuſed or ſtraight, angular; the angles rugged. Branches alternate, like the ſtem. Leaves alternate, ſubpetioled, ſerrate, ſcarcely fleſhy, green on both ſides. Peduncle terminating with a few revolute ſpikes. Flowers alternate, pedicelled, aſcending. The ſegments of the calyx for the moſt part alternately larger and ſmaller. Anthers red. Styles none [a]. Capſule undivided, compoſed of five partial capſules, ventricoſe at bottom, rounded-five-cornered, ſtarred at top, five-beaked, opening five ways between the beaks: beaks filiform, ſhort, conical at the baſe, with a ſmall head at top, ſpreading out horizontally. Partitions ſimple, faſtened to the axis and grooves of the valves. Seeds irregular like ſawduſt, or linear acuminate, ſhagreened with raiſed dots, ruſcent, faſtened to the partitions on every ſide [b].

Native of Virginia. Biennial, according to Miller, who cultivated it in 1768 [c]. Others reckon it to be perennial.] It flowers at the end of july, and the ſeeds ripen in the autumn.

[PENTSTEMON. (*So named from the flower having a fifth imperfect ſtamen.*)

Lin. gen. Schreb. n. 1758. *p.* 808. *Mitchell in act. nat. cur.* 8. *app.* 214. *Ait. hort. kew.* 3. 511.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ*.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted, permanent: *ſegments* lanceolate, almoſt equal.

COR. one-petalled, two-lipped: *tube* longer than the calyx, gibbous above at the baſe, wider at top, and there ventricoſe underneath: *upper lip* upright bifid; *ſegments* ovate, blunt, ſhorter than the lower lip: *lower lip* three-parted; *ſegments* ovate, blunt, bent down, ſhorter than the tube.

STAM. *Filaments* four, filiform, diverging at the tip, inſerted into the baſe of the tube, and ſhorter than it; the two lower longer. *Anthers* roundiſh, diſtant, included, bifid; with the lobes divaricating.

The *Rudiment* of a fifth filament between the upper ones inſerted into the tube, the ſame length with the ſtamens, filiform, ſtraight, bearded above at the tip.

PIST. *Germ* ovate. *Style* filiform, the length of the tube, bent down at the tip. *Stigma* truncate.

PER. *Capſule* ovate, acute, compreſſed, two-celled, two-valved.

SEEDS numerous, ſubglobular. *Receptacle* large.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* bilabiate, ventricoſe. *Rudiment* of a fifth ſtamen bearded above. *Capſ.* two-celled.

SPECIES.

1. Pentſtemon lævigata. *Smooth Pentſtemon.*
Ait. hort. kew. 2. 361.
Chelone Pentſtemon. *J. F. Miller ic.* 4. *Ard. anim.* 1. 14. *t.* 5.
Digitalis perfoliata glabra, flore violaceo minore. *Mor. hiſt.* 2. 479. *ſ.* 5. *t.* 8. *f.* 6.
Stem ſmooth, barren filament bearded above.
2. Pentſtemon pubeſcens. *Hairy Pentſtemon.*
Ait. hort. kew. 2. 360.
Chelone Penſtemon. *Lin. ſpec.* & *Diſt. noſtr.*
a. Latifolia; foliis ovato-oblongis. *Broad-leaved.*
Mor. hiſt. 3. 417. *ſ.* 11. *t.* 21. *f.* 3. *Dracocephalus.*

[a] Linn. mant. [b] Gærtner. [c] Hort. kew.

β. Anguſtifolia; fol. lanceolatis. *Narrow-leaved. Mor. ſ.* 2.
Stem pubeſcent, barren filament bearded from the tip below the middle.

DESCRIPTIONS, &c.

1. Root perennial, creeping, fibrous, white. Stem a foot and half high and more, round, purple below, brachiate. Lower leaves ovate-acuminate, quite entire, petioled, ſometimes purple underneath, on petioles winged to the baſe. Stem-leaves ovate-lanceolate, oppoſite, embracing, toothletted, ſmooth on both ſides. Flowering branches in a manner dichotomous, with the flowers two together. Corolla pale purple, ſomewhat hirſute on the outſide [a].

2. See Chelone.

PROPAGATION AND CULTURE.

See CHELONE.]

PEONY. See *Pæonia*.

[PEPLION and PEPLIOS SPECIES. See *Euphorbia*.

PEPLIS. (Πεπλις *of Dioſcorides.*)
Lin. gen. n. 446. *Reich. n.* 482. *Schreb. n.* 605. *Gærtn. t.* 51. *Jaſſ.* 333. Portula. *Dill. gen.* 7. Glaucoides. *Mich.* 18.
Claſſ. 6. 1. Hexandria Monogynia.
Nat. order of *Calycanthemæ. Salicariæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, permanent, very large, with the mouth twelve-cleft, toothlets alternate, reflex.
COR. *Petals* ſix, ovate, very ſmall, inſerted into the throat of the calyx.
STAM. *Filaments* ſix, awl-ſhaped, ſhort. *Anthers* roundiſh.
PIST. *Germ* oval. *Style* very ſhort. *Stigma* orbiculate.
PER. *Capſule* ſuperior, cordate, two-celled: partition oppoſite.
SEEDS very many, three-ſided, very ſmall.
OBS. *In many flowers on the ſame plant the corolla is entirely wanting.*
In P. tetrandra *the parts of fructification are left by one-third.*

ESSENTIAL CHARACTER.

Cal. bell-ſhaped, with a twelve-cleft mouth. *Pet.* ſix, inſerted into the calyx, (or none.) *Capſ.* two-celled.

SPECIES.

1. Peplis Portula. *Water Purſlane.*
Lin. ſpec. 474. *ſyſt.* 345. *Reich.* 2. 112. *ſ. lapp. n.* 128. *ſuec. n.* 312. *Hudſ. angl.* 147. *Wither. arr. ed.* 3. 352. *Curt. lond.* 4. 27. 288. *Lightf. ſcot.* 187. *Relh. cant. n.* 267. *Sibth. oxon. n.* 328. *Hall. helv. n.* 856. *Fl. dan. t.* 64. *Neck. gallob.* 172. *Pollich pal. n.* 355. *Krock. ſileſ. n.* 562. *Villars dauph.* 3. 267. *Gærtn. fruct.* 1. 237.
Portulaca. *Dill. giſſ.* 120. *Raii ſyn.* 368.
Glaucoides paluſtre portulacæ folio flore purpureo. *Mich. gen.* 21. *t.* 18. 1.
Glaux paluſtris, flore ſtriato clauſo, foliis portulacæ. *Petit. gen. t.* 43.
G. aquatica folio ſubrotundo. *Loeſ. pruſſ.* 106. *t.* 20.
G. altera ſubrotundo folio. *Vaill. par.* 80. *t.* 15. *f.* 5. *Bocc. muſ. t.* 84.
Anagallis ſerpilliſolia aquatica. *Bauh. hiſt.* 3. 372. 3.
Aſſine fluviatilis. *Tabern.* 713.
A. paluſtris minor ſerpilliſolia. *Bauh. pin.* 251.
A. rotundifolia ſ. Portulaca aquatica. *Ger. emac.* 614. 11. *Raii hiſt.* 1035.
A. aquatica minor folio oblongo, ſ. Portulaca aquatica. *Park. theat.* 1260. 4.
Flowers apetaleus.
2. Peplis tetrandra.
Lin. ſpec. 474. *ſyſt.* 345. *Reich.* 2. 113. *amoen.* 5. 412. *Jacqu. amer.* 100. *t.* 180. *f.* 29. *pict.* 52. *t.* 103.
Hedyotis tuberoſa. *Swartz obſ.* 136.
Anmannia hirta, &c. *Brown. jam.* 145.
Flowers one-petalled four-ſtamened.

DESCRIPTIONS, &c.

1. This is an annual creeping plant. Stems numerous, branched, dichotomous, from half a foot or a ſpan to a foot in length, ſmooth, angular, jointed, of a reddiſh colour. Leaves oppoſite, obovate, orbiculate or ſpatulate tapering into the petiole, ſmooth, quite entire. Flowers very ſmall, ſolitary, oppoſite, ſeſſile. Corolla and filaments pinky red. Petals deciduous, regularly ſix, but more frequently one, two or three, and ſometimes none. Calyx greeniſh white, ſmooth, angular-plaited, ſtriated. Anthers dark coloured. Stigma white [a]. Capſule ſmall, globular, membranaceous, very thin, knobbed on account of the protuberant ſeeds, valveleſs; partition membranaceous, correſponding with the external groove of the capſule. Receptacle fleſhy, roundiſh, compreſſed a little, faſtened to the partition on both ſides. Seeds about thirty in each cell, obovate acuminate, convex on one ſide, flat on the other, pale [b].

Native of many parts of Europe, in bogs, marſhes, ditches, and eſpecially where water has ſtagnated in winter and becomes dry in ſummer. It flowers from july to ſeptember.

2. Calyx bell-ſhaped, with the border eight-cleft. Corolla tubular, with the border four-parted. Stamens four. Germ growing to the tube of the calyx. Stigmas two. Capſule inferior, two-celled, crowned [c].

According to Juſſieu, the corolla is monopetalous, four-ſtamened, the germ inferior, the ſtigma double; the capſule two-celled, two-valved, many-ſeeded; with a ſtipule between the leaves: it is therefore more nearly allied to the *Rubiaceæ*, and particularly to *Oldenlandia* or *Gonozia*; but it is diſtinguiſhed from them by its eight-toothed calyx.

In the opinion of Swartz, the corolla, fruit, number and habit do not admit of its ranging with *Peplis*. It ſeems rather to be a *Hedyotis*, and differs little in appearance from *H. pumila*. He thus deſcribes it—The root conſiſts of globular diſtinct tubers. Stem ſubdivided, divaricated, round. Stipules ſmall, ſheathing, acuminate. Leaves ſubſeſſile, the upper ones in fours, ovate-cordate, ſubſpatulate, entire, ſomewhat hiſpid above, ſmooth beneath. Flowers terminating, peduncled, the ſize of a pin's head. Peduncles ſhort, one-flowered. Perianth four or five-cleft, ſuperior: ſegments biſid, ſo that it ſeems to be eight or ten-toothed, permanent. Corolla one-petalled, ovate, ſcarcely longer than the calyx, four-parted; ſegments blunt, upright. Filaments four, awl-ſhaped, ſhorter than the corolla. Anthers ovate, ſmall, concealed by the diviſions of the corolla. Germ twin. Style cloven almoſt to the baſe. Stigmas awl ſhaped. Capſule twin, globular, two-celled, ſurrounded and crowned by the calyx, opening at top by four valves. Seeds two in each cell, orbiculate covered by the valves. It is an annual plant, native of the Weſt Indies, in dry ſhady places at the foot of mountains and trees.

PEPLIS and PEPLUS. See *Euphorbia*.
PEPO. See *Cucurbita* and *Momordica*.
PEPPER. See *Piper*.
——— Graſs. See *Pilularia*.
———, Guinea. See *Capſicum*.
———, Jamaica. See *Myrtus*.
——— Mint. See *Mentha*.
——— Wort. See *Lepidium*.
PERA. See *Perula*.
PERADO. See *Ilex*.
PERAGU. See *Clerodendrum*.
PERAGUA. See *Coſſine*.
PERALU. See *Ficus*.
PERAMA. See *Mattuſchkæa*.
PERCEPIER. See *Aphanes*.
PERDICIUM. (*The name of a plant in Theophraſtus.* Περδικιον *is alſo a young or little partridge.*)
Lin. gen. n. 960. *Reich. n.* 1040. *Schreb. n.* 1298. *Gærtn. t.* 170. *Juſſ.* 181. Trixis. *Brown.*
Claſſ. 19. 2. Syngeneſia Polygamia Superflua.
Nat. order of *Compoſitæ Diſcoideæ. Corymbiferæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Common* oblong, imbricate: *leaflets* lanceolate, the inner ones ſcarcely longer than the corolla.
COR. *Compound* imbricate, rayed: *corollets* hermaphrodite in the diſk; female in the ray.

[a] Krocker, Withering. Lyons M.S. in Relh.
[b] Gærtner.
[c] Linn. ſyſt.

[a] Ardaini.

Proper of the hermaphrodite tubular, semibifid: *inner lip* two-parted, acuminate, equal; *outer* semitrifid, linear, equal: of the female linear, ligulate, three-toothed, two-toothed within at the base.

STAM. in the hermaphrodites: *Filaments* five, short. *Anther* cylindric, tubular, five-toothed.

PIST. in the hermaphrodites: *Germ* small. *Style* simple. *Stigma* bifid, blunt. In the females—*Germ* small. *Style* semibifid. *Stigmas* blunt.

PER. none. *Calyx* unchanged.

SEEDS solitary, obovate. *Down* capillary, sessile, very copious, the length of the calyx, fastigiate.

REC. naked.

OBS. *The flower resembles a semifloscular corolla though it is really rayed.*

The character is taken from P. semifloscular, *which is very distinct in the genus.*

P. radiale *agrees with the genus in its bilabiate capsules, but differs in the whole habit.*

P. brasiliense *has subradiate flowers, and hermaphrodite bilabiate florets in the disk and ray.*

ESSENTIAL CHARACTER.

Corollets bilabiate. *Down* simple. *Recept.* naked.

SPECIES.

1. Perdicium semifloscular.
Lin. spec. 1248. *syst.* 769. *Reich.* 3. 836. *amoen.* 6. *asr.* 72.
Flower semifloscular, scape one-flowered naked.

2. Perdicium radiale.
Lin. spec. 1248. *syst.* 769. *Reich.* 3. 837.
Inula Trixis. *Lin. amoen.* 5. 406.
Trixis frutescens, &c. *Brown. jam.* 312. *t.* 33. *f.* 1.
Flowers subradiate, outer calyx four-leaved, stem shrubby.

3. Perdicium brasiliense.
Lin. mant. 115. *syst.* 769. *Reich.* 3. 837.
Flowers subradiate, calyxes simple, stem herbaceous.

4. Perdicium magellanicum.
Lin. suppl. 376. *syst.* 769.
Leaves runcinate, stem two-leaved simple one-flowered.

5. Perdicium tomentosum.
Vahl. jap. 319. *Lin. syst.* 769.
Leaves lyrate tomentose underneath.

6. Perdicium lævigatum.
Gærtn. fruct. 2. 450. *Berg. act. holm.* 1772. 236. *t.* 7.
Flowers subradiate, stem suffruticose, leaves lanceolate acute quite entire.

DESCRIPTIONS, &c.

1. Root fibrous. Stature of *Leontodon*. Root-leaves of *Taraxacum*, naked. Scape the length of the leaves. Flower the size of *Leontodon*. Calyx of *Scorzonera*. Corolla rayed. Corollets between those of semifloscular and radial flowers, semibifid, with the inner lip two-parted, the outer three-parted. Down simple. Receptacle naked.—Native of the Cape of Good Hope [a].

2. Habit of the flowers as in *Inula* or *Conyza*. These two species differ in their whole appearance, and are scarcely allied; but the singular division of the corollets, in the outer segments smoother, almost as in *Elephantopus*, made Linnæus unite them, till they were examined more carefully in a living state [b].

Browne, who calls it shrubby Trixis, says that this little shrub is very common in the savannas about Kingston in Jamaica, and seldom rises above four or five feet in height. The common receptacles are disposed at the extremities of the branches, and the outer divisions of the flowers grow gradually smaller, and curl more downwards as they approach the centre; which gives the whole something the appearance of a radiated flower, at the first appearance.

3. Root-leaves lanceolate-ovate, repand-toothed, subpubescent, viscid. Stem-leaves alternate, sessile, lanceolate, narrow, somewhat toothed. Flowers at the top of the stem, naked, several. They have the appearance of *Arnica montana*, with the proper peduncles elongated and submonophyllous. Calyx twelve to sixteen-leaved; the leaflets lanceolate, blunt, equal. Corolla yellow. Florets both in the disk and ray bilabiate hermaphrodite.—Native of Brasil [c].

4. This is a pretty little plant. Leaves small, radical, several, runcinate-pinnatifid, and ciliate on the rachis, whence they are scabrous. Stem quite simple, tomentose, with two alternate serrate leaves. Flower white, rayed.—Native of Terra del Fuego [d].

5. This is a small, stemless, herbaceous plant. Leaves radical, several, petioled, erect, a finger's length; lobes toothed, the end tooth rounded. Scape tomentose, erect, one-flowered, a little longer than the leaves. Calyx many-leaved, imbricate, smooth. Flowers with a purple ray. Corollets of the disk yellow, four-cleft; one segment longer, linear, more deeply divided from the rest; the two lateral ones similar and equal; the middle one wider, rounded, scarcely longer than the lateral ones. Down simple.—Native of Japan; flowering there in april and may [e].

6. Calyx cylindric, consisting of eight equal leaves in one row; besides which it has often at the base two or four similar leaflets, a little longer than the others. All the florets androgynous, bilabiate, fertile; in the *disk* four or five, tubular, bifid at top, with the lips equal, concave, quite entire, villose on the outside; in the *ray* eight, unequally bilabiate; the outer lip ovate-oblong, with two or three teeth, and rayed; inner lip linear, quite entire, rolled back at the tip. Receptacle narrow, flat, densely and very shortly villose. Seeds uniform, oblong, obsoletely angular, with very minute bristles scattered over them, bay-coloured. Down bristle-shaped, with very many toothlets, twice as long as the seed. This differs from the others in the shape of the florets [f].

Stem round, smooth, ash-coloured, naked, striated, with warted scars: branches greenish, smooth, leafy at top, alternate, spreading out at a right angle. Leaves alternate, on short petioles, an inch long, smooth on both sides, ciliate, spreading. Stipules none, but a callus, from which the petiole springs, is permanent. Flowers two or three, often five, terminating; on smooth capillary divaricating peduncles. Bractes spatulate, acute, smooth, solitary; but near the calyx two or three together [g].

PRESKIA. See *Cattus*.

PERFOLIATA. See *Brassica, Bupleurum, Ophrys*.

PERFOLIATUM. See *Bupleurum*.

PERGULARIA. (*From* Pergula, *an arbour or trellis, the first species was named* Vallaris pergularis *by Burman, and* Flos pergulanus *by Rumphius. Linnæus altered these names to* Pergularia.)
Lin. gen. Reich. n. 329. *Schreb. n.* 428. *Juss.* 146. *Smith rar. t.* 6.
Class. 5. 2. Pentandria Digynia—potius Gynandria.
Nat. order of *Contortæ. Apocineæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-cleft, upright, acute, permanent.

COR. one-petalled, salver-shaped: *tube* cylindrical, longer than the calyx: *border* five-parted, flat, with oblong segments.

Nectaries five, semisagittate, erect, compressed, attenuated into a dagger point, curved inwards, with a nodding tooth at the outer base.

STAM. *Filaments* — —. *Anthers* two to each gland, curved upwards, divaricating, obovate, pellucid, yellow, with scarcely any discernible pollen. *Stn. Tubercles* (glands) five, immersed in the stigma.

PIST. *Germs* two, ovate, acuminate. *Styles* none, (two, very short, united, villose. *Stigmas* obsolete. *Stn.*)

PER. *Follicles* two.

SEED — —

OBS. *Allied to* Periploca græca.—*The character wants correction.* S. and Juss.—*See description of* P. odoratissima *by Smith.*

ESSENTIAL CHARACTER.

Contorted. Nectary surrounding the genitals with five sagittated cusps. *Cor.* salver-shaped.

[a] Linn. amoen. & spec. [b] Linn. spec. [c] Linn. mant. [d] Linn. suppl. [e] Thunberg. [f] Gærtner. [g] Bergius.

SPECIES.

1. Pergularia glabra. *Smooth Pergularia.*
Lin. mant. 53. *fyſt. Reich.* 1. 602. *Willd. ſpec.* 1247.
Vallaris pergulans. *Burm. ind.* 51.
Flos pergulanus. *Rumph. amb.* 5. 51. *t.* 29. *f.* 2.
Leaves ovate acute ſmooth, ſtem ſhrubby.

2. Pergularia edulis. *Eatable Pergularia.*
Lin. ſpec. ed. Willd. 1247. *Thunb. prodr. cap.* 38.
Leaves ovate acuminate ſmooth, ſtem herbaceous.

3. Pergularia odoratiſſima. *Sweet-ſcented Pergularia* or *Creeper.*
Smith ic. rar. t. 16.
P. tomentoſa. *Lin. mant.* 53. (quoad deſcr.) *fyſt. Reich.* 1. 602. *ſpec. Willd.* 1247. *Vahl ſymb.* 1. 23. *Deſfont. fl. atlant.* 209.
Cynanchum odoratiſſimum. *Lour. cochinch.* 166.
Flos Siamicus. *Rumph. amb.* 6. 58. *t.* 26. *f.* 1.
Leaves heart-ſhaped nearly ſmooth, nectary and genitals ſhorter than the tube of the corolla, ſtigma conical obtuſe.

4. Pergularia purpurea. *Purple Pergularia.*
Lin. ſpec. ed. Willd. 1248. *Vahl ſymb.* 3. 44.
Aſclepias cordata. *Burm. ind* 72. *t.* 27. *f.* 2.
Leaves heart-ſhaped ſmooth, ſegments of the corolla linear-oblong ſmooth, umbels proliferous.

5. Pergularia japonica.
Thunb. jap. 111. *Lin. fyſt.* 256. *ſpec. Willd.* 1248.
Leaves heart-ſhaped ſmooth, ſegments of the corolla ovate villoſe within, umbels ſimple.

DESCRIPTIONS, &c.

1. Stem twining, even. Leaves oppoſite, petioled, quite entire. Peduncles axillary, ſubdivided, alternate. Native of the Eaſt Indies [p].

2. The ſtem of this is alſo twining, but herbaceous, whereas in the preceding it is ſhrubby.—Native of the Cape of Good Hope.

3. Root branched, much ſpreading, whitiſh. Stem ſhrubby, twining, branched, round; its bark aſh-coloured, ſpongy, full of longitudinal fiſſures; branches nearly oppoſite, very long, flaccid, moſtly ſimple, round, brown, downy, leafy. Leaves oppoſite, ſpreading and bent downwards, pointed, entire, ſlightly concave, opaque, veiny, downy on the veins and margin, paler beneath: footſtalks one fourth of the length of the leaves, round, downy, with a furrow along the upper ſide, furniſhed at the baſe on each ſide and at the top with two or three acute brown-tipped glands. Stipules none. Panicles axillary, ſolitary, on longiſh flower-ſtalks, dichotomous, ſomewhat corymboſe, many-flowered, downy: general flower-ſtalks round; partial ſlightly angular. Bractes ſolitary at each diviſion of the panicle, lanceolate, obtuſe, brown on the back and at the tip. Flowers the ſize of a Primroſe, yelloviſh green, with a ſweet lemon-like ſmell, eſpecially in an evening. Calyx bell-ſhaped, deeply five-cleft; ſegments lanceolate, veined, ſlightly downy, minutely ciliated, tipped with brown. Tube of the corolla a little longer than the calyx, ſlightly downy, ſtriped; inflated, and with five ſwellings in the baſe; having a pervious orifice, ſet with numerous hairs pointing backwards. Border ſpreading, five-cleft; ſegments the length of the tube, obtuſe, ſmooth, ciliated, oblique, their margin turned down, the under ſide paleſt. Outer nectary half as long as the tube, green, conſiſting of five triangular bodies, ſomewhat arrow-ſhaped at their baſe; concave behind, and with two notches in the upper part; keel-ſhaped within; their ſummits pointed, bent in, thin, white, and ſticking together: inner nectary ſomewhat ſhorter, of five membranous leaves, dilated at the baſe, hollowed at the back, united by their ſides, attached together by their pointed membranous tips, embracing the organs of fructification, and on their inſide towards the top having two yellow membranous hoods, connected by their backs, formed to embrace the anthers in their natural ſituation. Column of the fructification rather ſhorter than the nectaries. Germs ſuperior, diſtinct but cloſe together, ſmall, ſmooth, green, ſurrounded at the baſe with a ſingle row of numerous, probably nectariferous glands. Styles terminating in one denſely villoſe, conical, obtuſe (not truncated) body; on the ſides of which ſtand five glands, alternate with the portions of the nectary, dark purple, with one anther on each ſide.

In the natural order to which this plant belongs the eſſential parts of fructification are more than commonly obſcure. It ſeems to be of the claſs Gynandria, as perhaps are all the true *Contortæ*, whoſe anthers have a great affinity, in appearance as well as ſtructure, with thoſe of the Orchis tribe.

Its native place is uncertain; but it is cultivated in China, whence Lady Hume received the plant. It flowered in her ſtove in auguſt 1791.

A variety of this, with ſomewhat rounder leaves, and more tawny flowers, is cultivated for its agreeable fragrance in the gardens of the Eaſt Indies, and is commonly called there *Weſt Coaſt Creeper*. It was brought to the Kew garden about the ſame time that Lady Hume had the Chineſe plant. The ſpecimen in the Linnean herbarium is from China, whence it appears to have been brought to the Upſal garden; and to this belongs the deſcription in the Mantiſſa, where the leaves are, not much amiſs, deſcribed as ſmooth: but the ſpecific character and place of growth relate to a widely different plant, *Aſclepias cordata* of Forſkall (*Vahl. ſymb.* 1. 23.) the leaves of which are clothed with extremely thick down (as in the Bankſian herbarium); and it appears from Forſkall's deſcription, (*Flora Ægypt. Arab.* 49.) that the ſtructure of its flowers perfectly agrees with the Aſclepias [s].

4. Branches twining, ſlender, aſh-coloured, appearing villoſe when examined by a glaſs. Leaves oppoſite, nerved and veined, two inches long; the upper one leſs. Petiole the length of the leaves. Umbels lateral, peduncle, ſhorter than the leaves. Peduncle thicker than the petiole, rigid. Pedicels filiform, pubeſcent like the calyxes. Corollas funnel-form: throat villoſe; ſometimes alſo the border is a little villoſe. It is allied to *P. japonica*, but the umbels are proliferous, not ſimple; the ſegments alſo of the border are linear, not ovate: ſtill it may be doubted whether they be actually diſtinct.—Native of the Eaſt Indies and of China [t].

5. Stem twining, round, ſmooth, ſimple. Leaves oppoſite, acute, quite entire, nerved, ſpreading, an inch long, on round, ſmooth petioles. Flowers axillary, peduncled, erect. Calyx parted almoſt to the baſe, ſhorter than the corolla; the parts lanceolate, rough-haired. Tube of the corolla bell-ſhaped, a little ſhorter than the calyx: ſegments of the border blunt, ſpreading and bent back, ſmooth on the outſide but villoſe within. Nectaries ſubſagittate, connate with the anthers into a cylinder, and alſo with the ſtigma. Filaments ſcarcely any. Anthers connate with the nectary into a cylinder, and together covering the other parts of fructification. Germs upright, ſmooth, the length of the calyx. Styles none, except the elongation of the germs. Stigma covering the piſtils, connate with the ſummits of the nectary, terminating in a long upright thread, attenuated at the tip, flexuoſe, white, the length of the corolla. The reſt as in the generic character.—Native of Japan, where it flowers in auguſt [u].

Loureiro has two ſpecies, both natives of China, which he names *divaricata* and *ſinenſis*. He remarks, that in all the ſpecies of Pergularia and Apocynum which he had ſeen, the flowers have one piſtil only.

PERICLYMENI FLORE. See *Spigelia.*

——— SIMILIS. See *Volkameria.*

PERICLYMENO ACCEDENS. See *Cinchona* and *Pſychotria.*

PERICLYMENUM. See *Chiococca, Commelina, Cornus, Hamelia, Lantana, Lonicera, Loranthus, Morinda, Varronia.*

PERILLA.
Lin. gen. n. 1236. *p.* 578. *Reich. n.* 772. *Schreb. n.* 968. *Juſſ.* 113.
Claſs. 14. 1. Didynamia Gymnoſpermia.
Nat. order of *Verticillatæ. Labiatæ*, Juſſ.

[p] Linn. mant.

[s] Smith. [t] Vahl. [u] Thunberg.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, upright, half-five-cleft: *segments* equal, the uppermoſt very ſhort; permanent.

COR. one-petalled, irregular, four-cleft: upper ſegment emarginate, lateral ones ſpreading, loweſt longer, blunt.

STAM. *Filaments* four, ſimple, diſtant, ſhorter than the corolla. *Anthers* biſid.

PIST. *Germs* four. *Styles* two, filiform, connected, the length of the ſtamens. *Stigmas* ſimple.

PER. *Calyx* unchanged.

SEEDS four.

ESSENTIAL CHARACTER.

Cal. uppermoſt ſegment very ſhort. *Stam.* diſtant. *Styles* two connected.

SPECIES.

1. Perilla ocymoides.
Lin. ſyſt. 533. *Reich.* 3. 47. *gen.* 578.
Meliſſa maxima. *Arduini animadv.* 2. 28. *t.* 13.

DESCRIPTION, *&c.*

Stem ſimple, ſtiff, blunt, quadrangular, rough-haired. Leaves ovate, almoſt naked, ſerrate; on petioles the length of the leaves. Racemes lateral and terminating, rough-haired, upright. Flowers ſmall, white, ſolitary or by threes, rough-haired in the calyx, with leafy bractes longer than the flower.

It is an annual plant, native of the Eaſt Indies[a].

PERIM KAKU-VALLI. See *Mimoſa.*

PERIM-TODDAL. See *Rhamnus.*

PERIN-KARA. See *Elæocarpus.*]

PERIPLOCA. (*From* περι *circum, and* πλοκη, *nexus. The branches twining round each other.*)
Lin. gen. n. 303. *Reich. n.* 330. *Schreb. n.* 427. *Tournef. t.* 22. *Juſſ.* 146. *Jacqu. miſc. t.* 1. *f.* 2, 3.
Claſſ. 5. 2. Pentandria Digynia.
Nat. order of *Contortæ*, *Apocineæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-cleft, very ſmall, *ſegments* ovate; permanent.

COR. one-petalled, wheel-ſhaped, five parted: *ſegments* oblong, linear, truncated, emarginate.
Nectary very ſmall, five-cleft, ſurrounding the genitals, putting out five *threads*, curved inwards, ſhorter than the corolla, and alternate with it.

STAM. *Filaments* ſhort, curved inwards, converging, villoſe. *Anthers* twin, acuminate, converging over the ſtigma; with lateral cells. *Pollen bags* five, at the notches of the ſtigma, each common to two anthers.

PIST. *Germs* two, ovate, approximating. *Styles* united at top. *Stigma* capitate, convex, five-cornered, with the corners notched.

PER. *Follicles* two, large, oblong, ventricoſe, one-celled, one-valved, glued together at the tip.

SEEDS very many, imbricated, crowned with a *down*. *Receptacle* longitudinal, filiform.

OBS. *The above character is taken from* P. græca.

ESSENTIAL CHARACTER.

Order of *Contortæ*. *Neft.* encircling the genitals, and putting forth five threads.

SPECIES.

1. Periploca græca. *Common Virginian Silk* or *Periploca.*
Lin. ſpec. 309. *Reich.* 1. 603. *Willd.* 1248. *hort. cliff.* 78. *Pallas it.* 3. 589. *Du Roi harbk.* 2. *p.* 1. *Medic. in obſ. ſoc. æcon. Lutr.* 1774. *p.* 233. *Kniph. cent.* 2. *n.* 52. *Jacqu. miſc.* 1. 11. *t.* 1. *f.* 2. *Hort. ang. t.* 15. *Duham. arb.* 2. *t.* 11.
P. repens. *Ger.* 754.—anguſtifolia. *Ger. emac.* 902. 1.
Apocynum folio oblongo. *Baub. pin.* 303.
A. ſ. Periploca ſcandens, fol. longo, flore purpurante. *Baub. hiſt. Raii hiſt.* 1087.
A. 2. anguſtifolium. *Cluſ. hiſt.* 1. 125.
A. anguſtif. f. repens. *Park. theat.* 386. *f.* 2.
Flowers internally hirſute terminating.

[2. Periploca Secamone. *Green Periploca.*
Lin. ſyſt. 256. *Reich.* 1. 603. *Willd.* 1249. *mant.* 216.
P. foliis oblongis anguſtioribus. *Tournef. inſt.* 93.
Secamone. *Alp. ægypt.* 133. *t.* 134.

[a] Lin. gen. and ſyſt.

Flowers internally hirſute panicled, leaves lanceolate-elliptic.

3. Periploca lævigata. *Smooth Periploca.*
Ait. hort. kew. 1. 301. *Lin. ſpec. ed. Willd.* 1249.
P. punicæfolia. *Cavan. ic.* 3. 9. *t.* 217.
Corollas ſmooth with blunt ſegments, cymes trichotomous, leaves oblong-lanceolate veined even, ſtem ſmooth.

4. Periploca anguſtifolia. *Narrow leaved Periploca.*
Billard. ic. fyr. 2. 13. *t.* 7. *Lin. ſpec. ed. Willd.* 1249. *Duſont. fl. atlant.* 209.
P. lævigata. *Vahl ſymb.* 4. 45.
Corollas ſmooth, ſegments emarginate, cymes trichotomous, leaves lanceolate veinleſs even, ſtem ſmooth.

5. Periploca eſculenta. *Eſculent Periploca.*
Lin. ſuppl. 168. *ſyſt.* 256. *ed. Willd.* 1250. *Roxb. corom.* 1. 13. *t.* 11. *Pluk. amalth.* 19. *t.* 359. *f.* 6. (Apocynum).
Corollas ſmooth wheel-ſhaped, racemes axillary, leaves linear-lanceolate veined.

6. Periploca emetica. *Emetic Periploca.*
Willd. ſpec. 1250. *phyteg.* 1. 6. *n.* 21. *t.* 5. *f.* 2. *Retz. obſ.* 2. 14.
Corollas ſmooth, corymbs few-flowered axillary, leaves linear-lanceolate veinleſs.

7. Periploca indica. *Indian Periploca.*
Lin. ſpec. 309. *Reich.* 1. 603. *Willd.* 1251. *fl. zeyl. n.* 113. *Burm. zeyl.* 187. *t.* 83. *f.* 1. *Pluk. mant.* 17. *t.* 359. *f.* 2. (Apocyni genus, &c.)
Spikes axillary imbricated, leaves elliptic obtuſe mucronate, ſtem ſmooth.

8. Periploca capſularis. *New Zealand Periploca.*
Forſt. prod. ſtor. auſtral. n. 126. *Lin. ſpec. ed. Willd.* 1251.
Leaves lanceolate quite entire oppoſite, cymes axillary diffuſed.]

9. Periploca africana. *African Periploca.*
Lin. ſpec. 309. *Reich.* 1. 604. *Willd.* 1251. *Jacqu. miſc.* 1. 13. *t.* 1. *f.* 3. *hort. cliff.* 79. (Cynanchum).
Comm. rar. t. 18. *Pluk. phyt. t.* 137. *f.* 4. *Mor. hiſt.* 3. 611. *ſ.* 15. *t.* 3. *f.* 62. (Apocynum).
β. Burm. afr. 34. *t.* 14. *f.* 2. (Cynanchum).
Leaves ovate acute, flowers corymbed, ſtem hirſute.

[10. Periploca tunicata.
Lin. ſpec. ed. Willd. 1252. *phyteg.* 1. 7. *n.* 22. *t.* 5. *f.* 1. *Retz. obſ.* 2. 15.
Leaves oblong heart-ſhaped acuminate, flowers umbelled.

11. Periploca ſylveſtris.
Lin. ſpec. ed. Willd. 1252. *phyteg.* 1. 7. *n.* 23. *t.* 5. *f.* 3. *Retz. obſ.* 2. 15.
Leaves roundiſh ovate netted-veined pubeſcent underneath, flowers umbelled.

12. Periploca cochinchinenſis.
Lour. cochinch. 167.
Stem arboreous, leaves fleſhy, racemes terminating.]

13. Periploca fruticoſa.
Mill. dict. n. 3.
P. foliis cordatis holoſericeis, floribus parvis albis campaniformibus. *Houſt. Mſs.*
Leaves oblong-cordate pubeſcent, flowers axillary, ſtem ſhrubby climbing.

DESCRIPTIONS, *&c.*

1. Stems ſhrubby twining round any ſupport more than forty feet in height, covered with a dark bark, and ſending out ſlender branches which twine round each other. Leaves ovate-lanceolate, near four inches long, and two broad in the middle, of a lucid green on their upper ſide, but pale on their under, oppoſite, on ſhort foot-ſtalks. The flowers come out towards the ends of the ſmall branches in bunches, and are of a purple colour.

[Jacquin, in his miſcellanies, has given a very particular and accurate deſcription, accompanied with figures, of the extraordinary ſtructure of the flower, in this ſpecies and *africana*, n. 9.—Native of Syria. Cultivated by Gerarde in 1597[a]. "My loving friend," ſays he, "John Robin, herbariſt in Paris, did ſend me plants for my garden, where they flower and flouriſh." He calls it *Cuming Dog's bane.*]

It flowers in july and auguſt, but rarely ripens ſeeds in England.

[a] Hort. kew.

[2. Stem

[2. Stem twining, ſhrubby, even. Leaves oppoſite, petioled, even, underneath paler veined tranſverſely. Panicles axillary, alternate, dichotomous, ſhorter than the leaves. Flowers ſmall. It differs at firſt ſight from the preceding in its ſmall copious flowers [a].

Said to be a native of Egypt—but its place of growth is uncertain. It was cultivated in 1775, by John Fothergill, M. D. It flowers in july [b].

3. Corolla greeniſh-yellow within; the ſegments linear, blunt, with an orange dot above. Leaves ſimply veined [c].

Native of the Canary iſlands, where it was found by Maſſon. Introduced in 1779 [d].

4. Stem fruteſcent, from three to five feet high, upright, branched, ſometimes ſcandent by the top. Leaves ſome oppoſite, others in bundles, evergreen, ſmooth, ſharp at both ends, but ſometimes blunt, quite entire. Petioles ſhort, with two oppoſite tubercles at the baſe. Panicle axillary, the length of the leaves. Segments of the calyx blunt, falling with the ripe fruit. Segments of the corolla more produced on one ſide, purple within, the edges pale yellow, with a whitiſh ſubtomentoſe dot towards the middle. Scalelers (of the nectary) purple, ſomewhat fringed; and between them five purple bowed filaments, from the ſinuſes of the corolline ſegments: beſides theſe, there are five villoſe pedicelled ſcales, which are two-celled and ſurround the germ: they are the ſtamens (or anthers) of Linneus. There are alſo five ſmall bodies (which perhaps may be the ſtamens) club-ſhaped at the baſe, faſtened underneath to the peſta of the ſtyles; the apex cloven, and mealy or containing pollen, lodged in the cells of the ſcales: probably theſe are the anthers. Germ very ſmall, bifid. Styles two, ſhort. Stigmas two, covered with a fleſhy five-cornered pelta, within which the little club-ſhaped bodies are lodged. Capſules (or follicles) lanceolate, acute, even, horizontal, ſeſſile, oppoſite at the baſe. Seeds oblong, compreſſed; crowned with a white briſtly down [e]. Though very like the preceding, yet it is ſufficiently diſtinct from it, by its narrower veinleſs leaves, and the emarginate ſegments of the corolla [f].

Found by Billardiere near Laodicea by the ſea, and in the iſland Lampedoſa; by Desfontaines on mount Atlas; alſo on mount Shibel Iſchel in the kingdom of Tunis.

5. Root filiform, fibrous. Stems and branches numerous, twining, round, ſmooth, running over buſhes of conſiderable ſize. Leaves oppoſite, ſpreading, ſhort-petioled, linear tapering to a fine point, rounded at the baſe, entire, ſmooth, from four to ſix inches long, and about three-eighths of an inch broad. Racemes lateral, long, few-flowered. Flowers large, beautiful white with a ſmall tinge of the roſe, and ſtriated with purple veins; inodorous. Nectary and ſtamens as in Aſclepias and Pergularia. Follicles oblong, inflated [g].

Willdenow adds, that there are but two or three flowers in a raceme, and that they are pedicelled; that the corolla is yellow with ferruginous ſtreaks; the nectary five-horned, the genitals yellow, and the follicles ſmooth. His deſcription of the colour of the flower is taken from a dried ſpecimen. He ſays farther, that it varies in the width of the leaves; that he has ſpecimens with oblong-lanceolate, linear-lanceolate and linear-ſubulate leaves, but the ſecond predominate.

Native of the Eaſt Indies, called Oudy-palla by the Telingas. It grows in hedges, and among buſhes, on the banks of water-courſes, pools, &c. caſts its leaves during the dry ſeaſon, and is in flower and foliage during the rainy ſeaſon. Cattle eat it, but the natives do not, nor do they apply it to any purpoſe whatever. Its elegant flowers render it deſerving of a place in the flower garden [h].

6. Stem ſhrubby, with diffuſed rod-like, even branches. Leaves entire, ſmooth, ſhort-petioled, oppoſite. Peduncles ſhort, many-flowered, ſcaly with little bracteæ, eſpecially at the ends of the branches. Flowers ſmall, ſmooth.

Native of the Eaſt Indies, at the foot of mountains. Koenig ſent it from Tranquebar. Thunberg ſays that the root is uſed as an emetic in the Eaſt Indies [i].

7. Stem twining, round. Leaves oppoſite, ſmooth, quite entire, on very ſhort petioles: from the axils of them ſimple ſpikes come out imbricated with ſharp ſcales [k].

According to Burman, the ſtem is aſh-coloured, rugged with many very ſmall tubercles. A pair of leaves from each joint, almoſt ſeſſile, bright green above, pale and aſh-coloured underneath, oblong, acute, entire, veined; at the axils of theſe there are many flowers ſitting cloſe.—Native of the iſland of Ceylon.

8. Native of New Zealand [l].]

9. This has many ſlender ſtalks, which twine about each other, and by a ſhrub or other ſupport will riſe near three feet high, putting out ſeveral ſmall ſide-branches: theſe are hairy, as are alſo the leaves; which are about three quarters of an inch long, and half an inch broad, ſtanding by pairs upon very ſhort foot-ſtalks. The flowers come out in ſmall bunches from the ſide of the ſtalks; they are ſmall, of a dull purple colour, and have a ſweet ſcent. It flowers in the ſummer, but does not produce ſeeds here.

[Native of the Cape of Good Hope. Cultivated by Mr. Miller in 1726 [m].]

There is a variety of it with ſmooth leaves and ſtalks from the ſame country.

[10. Stem twining, even. Leaves oppoſite, petioled, ſmooth on both ſides. Stipules cordate, petioled. Flowers ſmooth in axillary few-flowered umbels (two to five.) Koenig ſent it from Tranquebar.

11. Stems ſhrubby, tomentoſe. Leaves ovate, ſomewhat hirſute on both ſides, entire. Flowers ſmall in oppoſite axillary umbels, ſmooth within. Calyx tomentoſe, with the ſegments ovate, obtuſe.—Native of the Eaſt Indies; found by Koenig [n].

12. This is a middle-ſized tree, with ſpreading branches. Leaves heart-ſhaped, oblong, acute, quite entire, large, ſmooth, oppoſite. Flowers blueiſh white, on ſhort racemes. Calyx five-leaved; leaflets lanceolate, ſpread out. Nectary ſurrounding the genitals with five filiform upright little columns, curved at the baſe.

Native of Cochinchina, to the ſouth of Huæa the metropolis. It occurs alſo in Bengal, but of a ſmaller ſize [o].]

13. This riſes with a ſtrong woody ſtalk to the height of five or ſix feet, covered with a gray bark, putting out many weak branches, which twiſt themſelves about any neighbouring ſupport, and riſe to the height of twenty feet; they are garniſhed with heart-ſhaped leaves three inches long, and two broad near their baſe; they are of a yellowiſh green, covered with ſilky hairs, which are ſoft to the touch; and ſtand oppoſite upon pretty long foot-ſtalks. The flowers come out in ſmall bunches from the wings of the leaves; they are ſmall, white, and of the open bell ſhape; theſe are ſucceeded by ſwelling taper pods, filled with ſeeds crowned with long feathery down.

Diſcovered by Dr. Houſtoun at Vera Cruz in America.

PROPAGATION AND CULTURE.

1. This is eaſily propagated by laying down the branches, which will put out roots in one year, and may then be cut from the old plant, and planted where they are to remain. Theſe may be tranſplanted either in autumn, when the leaves begin to fall, or in the ſpring before they begin to ſhoot, and muſt be planted where they may have ſupport, otherwiſe they will trail on the ground, and faſten themſelves about whatever plants are near them.

9. The ninth ſort is hardy enough to thrive in this country, with a little protection from the froſt in winter. If the plants are ſheltered under a common frame or placed in a green-houſe during the winter ſeaſon, and

[a] Linn. mant. [b] Hort. kew. [c] Roxburgh. [d] Idem. [e] Willdenow. [f] Billardiere. [g] Willdenow.

[h] Retzius. [i] Linn. zeyl. [k] Retzius. [l] Forſter. [m] Loureiro. [n] Hort. kew.

placed

placed abroad with other hardy exotic plants in ſummer, they will thrive and flower very well; but as all the plants of this genus have a milky juice, ſo they ſhould not have much wet, eſpecially in cold weather, leſt it rot them. They are eaſily propagated by laying down their branches, which in one year will have roots enough to tranſplant; theſe ſhould be planted in a light ſandy loam not rich, and the pots muſt not be too large, for when they are over potted they will not thrive.

13. The thirteenth ſort being tender, will not thrive in England, unleſs the plants are placed in a warm ſtove. They may be propagated by laying down their branches in the ſame manner as the former; or from ſeeds, when they can be procured from the places where they naturally grow. Theſe ſhould be ſown upon a good hot-bed, and when the plants come up, they muſt be treated in the ſame manner as other tender exotic plants.

If theſe plants are conſtantly kept plunged in the tan-bed of the ſtove, they will thrive and flower much better than in any other ſituation, but the ſtove ſhould not be kept too warm in winter; and in the ſummer the plants ſhould have a large ſhare of free air admitted to them; for when they are kept too cloſe, their leaves will be covered with inſects, and the plants will become ſickly in a ſhort time.

[PERIPLOCA. See *Ceropegia*, *Cynanchum*, *Echites*.

PERIPU. See *Delima*.]

PERIWINCLE. See *Vinca*.

[PEROLA. See *Mowardica*.

PERÖTIS. (*From* περοι, *mancus*; *the flowers being deficient, as wanting the calyx.*)

Ait. hort. kew. 3. 506. *Lin. gen. Schreb. n.* 1714. *p.* 786.

Claſſ. 3. 2. Triandria Digynia.

GENERIC CHARACTER.

CAL. none.

COR. *Glume* two-valved: *valves* oblong, acute, almoſt equal, awned at the tip.

STAM. *Filaments* three, capillary. *Anthers* oblong.

PIST. *Germ* ſuperior, oblong. *Styles* two, capillary, ſhorter than the corolla. *Stigmas* feathered, divaricating.

PER. none. *Corolla* incloſing the ſeed.

SEED one, linear-oblong.

ESSENTIAL CHARACTER.

Cal. none. *Cor.* two-valved: *valves* equal, awned.

SPECIES.

1. Perotis latifolia.
Ait. hort. kew. 1. 85. *Lin. ſpec. ed. Willd.* 324.
Saccharum ſpicatum. *Lin. ſpec.* 79. *Syſt.* 103. *Reich.* 1. 147.
Alopecurus malabarica foliis undulatis, ſpica prætenui. *Scheuch. gram.* 91.
Gramen paniculatum brevifolium criſpum, ſpica purpureo-ſericea maderaſpatanum. *Pluk. phyt. t.* 199. *f.* 1. *Mor. hiſt.* 3. 191. *n.* 7.
Tſjeria-Kuren-pullu. *Rheed. mal.* 12. *p.* 117. *t.* 62.
β. With flat lanceolate leaves.
Saccharum ſpicatum. *Burm. ind. t.* 9. *f.* 3.
Culm ſimple, leaves waved, joints ſmooth.

2. Perotis polyſtachya.
Lin. ſpec. ed. Willd. 324.
Saccharum paniceum. *Lamark, encycl.* 1. 588. *t.* 40. *f.* 3.
Culm branching, leaves flat, joints bearded.

DESCRIPTIONS, &c.

1. Culm a foot and half high, frequently jointed to a third part of its height, the joints half an inch and an inch diſtant from each other; from each joint ſprings a branch, which is alſo frequently jointed, and terminated by a ſpike. Leaf at each joint waved and as it were curled, an inch long or leſs, a line and half or two lines wide, ſmooth, with a white line, and ſhort looſe ſtiffiſh hairs at the edge. Sheath half an inch or an inch in length, whitiſh eſpecially towards its origin; ending in a ſcarcely viſible whitiſh ligule. Spike a hand or half a foot in length, very thin. Florets pedicelled, a line long, livid or purpliſh; awn very ſlender, yellowiſh or purple, four or five lines in length. Seed very ſlender, acuminate, brown, near a line long[1]. Petiver ſent it to Scheuchzer from London.—It is an annual graſs, native of the Eaſt Indies. Introduced in 1777 by Daniel Charles Solander, L. L. D. It flowers in auguſt and ſeptember[2].

The variety, according to Willdenow, is a diſtinct ſpecies of this genus.

2. Culm branched. Leaves linear, not waved. Sheaths bearded at the edge.—Native of the Eaſt Indies[3].

PERPENSUM. See *Gunnera*.

PERSEA. See *Laurus*.

PERSIAN LILY. See *Fritillaria*.

PERSICA. See *Amygdalus*.

PERSICÆ SIMILIS. See *Mangifera*.

PERSICARIA. See *Polygonum*.

——— SILIQUOSA. See *Impatiens*.

PERSIMON. See *Diospyros*.

PERSONATA. See *Arctium*.

PERSOONIA. (*So named by J. E. Smith, M.D. Preſident of the Linnean Society, in honour of C. H. Perſoon, author of ſeveral treatiſes on Fungi, and editor of the 15th edition of* Syſtema Vegetabilium, *Gotting.* 1797.)

Smith in Linn. tranſ. 4. 215.

Claſſ. 4. 1. Tetrandria Monogynia.

ESSENTIAL CHARACTER.

Cal. none. *Pet.* four, ſtaminiferous towards the baſe. *Glands* four at the baſe of the germ. *Stigma* blunt. *Drupe* one-ſeeded.

OBS. *This genus differs from* Loranthus, *to which it is nearly allied, in the number of parts and in the want of a calyx. It can ſcarcely be aſſociated with the* Caprifolia *of Juſſieu.*

It conſiſts of ſubvimineous ſhrubs. Leaves commonly alternate, without ſtipules. Corolla ſmooth within. Anthers linear, finally bent back. Style permanent, ſmooth. Drupe eatable in moſt. Flowers yellow. Natives of the iſlands in the Southern Ocean. Smith.

PERU. See *Dolichos*.]

PERVINCA. See *Vinca*.

[PERULA. (*A little ſcrip, bag or ſatchel; from the form of the ſeed-veſſel.*)

Lin. gen. Schreb. n. 1549.

Pera. *Mutis act. holm.* 1784. *p.* 299. *t.* 8.

Claſſ. 22. 12. Dioecia Polyandria.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* two-leaved, very ſmall: *leaflets* oppoſite, oblong, ſomewhat concave, ſpreading, the upper one twice as big as the other.

COR. *Petal* one, ſemiglobular-concave, hanging down, heart-ſhaped at the baſe, ſcarcely emarginate at the tip. *Nectary*; membranes multifid, ſomewhat plaited, erect, inſerted into the receptacle between the rows of ſtamens.

STAM. *Filaments* very many (24 to 30), ſet tranſverſely in a double row, thickiſh, upright, the height of the nectary. *Anthers* thickiſh, four-cornered, oblong, blunt, upright, raiſed above the nectary.

PIST. *Germs* four, barren, very ſmall, ſubglobular, very ſhortly pedicelled, placed at the angles of the receptacle above the nectary. *Style* very ſhort, upright. *Stigmas* three: with ſegments peltate, ſtanding out at the tips.

* *Female* on a diſtinct tree.

CAL. *Perianth* as in the male, deciduous.

COR. as in the male.

Nectary as in the male, with the membranes approximating, ſomewhat inflated, filling the diſk of the receptacle.

PIST. *Germs* four, fertile, inſerted into the receptacle, as in the male, a little larger, ſhortly pedicelled. *Style* to each, upright, ſhort, three-cornered. *Stigmas* as in the male.

PER. *Capſule* obovate, ſubtrigonal, hanging down from the elongated pedicel, three-celled, three-valved: *valves* bifid, at length two-parted.

SEEDS ſolitary, obovate-truncated, ſmooth, ſmall.

[1] Scheuchzer. [2] Hort. kew. [3] Willdenow.

Obs. *Is not the calyx rather a double bractle? Corolla before it unfolds globular, with a longitudinal future, when that opens the orifice of the petal becomes tranſverſe, the receptacle is almoſt prominent beyond the corolla, and the flower hangs down from the nodding apex of the incurvated peduncle.* Mutis.

SPECIES.

Perula arborea.

Pera arborea. *Mutis in act. holm.* 5. 299. *t.* 8.

Native of New Granada, about Mariquita, where it was found by Mutis.

PERUVIAN MASTICK TREE. See *Schinus.*

PES ANSERINUS. See *Chenopodium.*

—— CAPRÆ. See *Convolvulus* and *Oxalis.*

—— EQUINUS. See *Hydrocotyle.*

—— LEONIS. See *Alchemilla.*

—— TIGRIDIS. See *Ipomœa.*

PETAGLOSSUM. See *Lythrum.*

PETALOMA. (*From πέταλον, a leaf.*)

Lin. gen. Schreb. n. 1750. *p.* 802. *Swartz prodr.* 73. Mouriri. *Aubl. guian. t.* 180. *Juſſ.* 320.

Claſſ. 10. 1. Decandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, goblet-ſhaped, five-toothed, ſuperior, permanent: *teeth* ſharp, almoſt upright.

COR. *Petals* five, oblong, ſpreading, each inſerted by the claw between the teeth of the calyx, deciduous.

STAM. *Filaments* ten, placed on the margin of the calyx, longer than the corolla. *Anthers* oblong, incumbent.

PIST. *Germ* ovate, in the bottom of the calyx. *Style* long, awl-ſhaped. *Stigma* ſimple, acute.

PER. *Berry* globular, fleſhy, crowned with the calyx, one-celled.

SEEDS ſolitary or in fours, angular on one ſide, convex on the other.

Obs. *It ſhould be ſeparated from* Myrtus *on account of the form of the calyx, and the inſertion of the ſtamens.*

ESSENTIAL CHARACTER.

Cal. goblet-ſhaped, five-toothed. *Petals* five, inſerted between the teeth of the calyx. *Stam.* on the margin of the calyx. *Berry* one-celled. *Seeds* one or four.

SPECIES.

1. Petaloma myrtilloides.

Swartz prodr. 73. *Sloan. jam.* 2. 78. *t.* 187. *f.* 3.

Peduncles ſolitary one-flowered, leaves ſubſeſſile ovate attenuated obliquе at the baſe.

2. Petaloma Mouriri.

Lin. ſyſt. Gmel. 678. *Swartz prodr.* 73.

Mouriri guianenſis. *Aubl. guian.* 453. *t.* 180.

Peduncles corymbed axillary, leaves petioled ovate acuminate, berries four-ſeeded.

DESCRIPTIONS, *&c.*

1. Trunk ſtraight, twenty feet high, no thicker than the human leg; bark almoſt ſmooth, gray, with ſome very white ſpots, whence its name of *Silver-wood.* Leaves in pairs, ſmooth, very thin, yelloviſh green, an inch long, and almoſt as broad at the baſe, entire. Flowers axillary, ſmall, white, on crooked pedicels. The wood is hard, tough, heavy, and good for looms, handles, ſtaves for oars, or ſcouring rods for guns.

Native of Jamaica, and other parts of the Weſt Indies [a].

2. This is a tree from thirty to forty feet in height, and a foot and half in diameter; with a grayiſh bark, and a whitiſh hard compact wood; with a great number of branches at top, ſome ſtraight, others inclined, ſpreading out in every direction, and ſubdividing into knobbed branchlets. Leaves at each knot in pairs ovate-acuminate, ſmooth, entire, ſtrong, thick, on ſhort petioles. Flowers axillary on oppoſite corymbs. A very ſmall bractle at the baſe of the common peduncle and pedicels, and two under the calyx. Corolla yellow.

Native of Guiana, in the foreſts bordering on the river Sinemari; flowering in november, and fruiting in january. Named by the natives *Mouriricbira* [b].]

[a] Sloane. [b] Aublet.

PETASITES. [(*From πέτασος, a hat, on account of the great ſize of the leaves.*) See *Clerodendrum, Gunnera,*] *Tuſſilago.*

PETESIA.

Lin. gen. n. 133. *Reich. n.* 139. *Schreb. n.* 170. *Juſſ.* 199. *Brown. t.* 2. *f.* 2, 3. & *t.* 3. *f.* 2.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Rubiaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, ſuperior; with the mouth toothed.

COR. one-petalled, funnel-form: *tube* cylindrical, longer than the calyx: *border* four-parted; *lobes* rounded, blunt.

STAM. *Filaments* four, awl-ſhaped, the length of the tube. *Anthers* ſomewhat oblong.

PIST. *Germ* inferior. *Style* filiform. *Stigma* bifid, acute.

PER. *Berry* globular, crowned, two-celled.

SEEDS very many, roundiſh.

ESSENTIAL CHARACTER.

Cor. one-petalled, funnel-form. *Stigma* bifid. *Berry* many-ſeeded.

SPECIES.

1. Peteſia ſtipularis.

Lin. ſpec. 160. *Reich.* 1. 312. *Willd.* 612. *Brown. jam.* 143. *t.* 2. *f.* 2.

Leaves lanceolate-ovate tomentoſe underneath, flowers in lateral thyrſes.

2. Peteſia carnea.

Lin. ſpec. Willd. 613. *Forſt. prodr. n.* 51.

Leaves oblong-lanceolate even, flowers in terminating trifid cymes.

3. Peteſia tomentoſa.

Lin. ſpec. 161. *Reich.* 1. 313. *Willd.* 613. *Jacqu. amer.* 18.

Leaves oblong tomentoſe on both ſides.

DESCRIPTIONS, *&c.*

1. This is a ſhrub. Leaves oppoſite, quite entire. Racemes axillary, brachiate, ſhorter than the leaf.—Native of Jamaica [a].

According to Swartz, it is allied to *Rondeletia,* and ſhould be referred to the claſs Pentandria, as appears from Browne's figure and deſcription.

2. Native of the iſland of Namoka in the great Southern Ocean [b].

3. Native of the woods about Carthagena in New Spain [c].

Loureiro has two ſpecies, natives of Cochinchina, which he names *ſimpliciſſima* and *triſida.*

PETESIA LYCISTUM. See under *Manettia.*

PETESIOIDES. See *Wallenia.*

PETILIUM. See *Fritillaria.*

PETITIA. (*So named by Jacquin, in memory of Francois Petit, a ſurgeon at Paris, who in* 1710 *publiſhed Letters containing ſome botanical remarks.*)

Lin. gen. Schreb. n. 172. *Jacqu. amer.* 14.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Vitices,* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ſmall, upright, four-toothed, inferior, permanent.

COR. one-petalled: *tube* cylindrical, upright, long: *border* four-cleft; *ſegments* ovate, acute, flat, reflex, half the length of the tube.

STAM. *Filaments* four, awl-ſhaped, very ſhort, in the upper part of the tube. *Anthers* upright.

PIST. *Germ* roundiſh, ſuperior. *Style* awl-ſhaped, upright, the length of the ſtamens. *Stigma* ſimple.

PER. *Drupe* roundiſh.

SEED. *Nut* ovate, blunt, two-celled: *kernels* ſolitary, oblong.

Obs. *Flowers often three-ſtamened, with the calyx and corolla triſid.*

ESSENTIAL CHARACTER.

Cal. four-toothed, inferior. *Cor.* four-parted. *Drupe* with a two-celled nut.

SPECIES.

1. Petitia domingenſis.

Lin. ſpec. Willd. 614. *Jacqu. amer.* 14. *t.* 182. *f.* 6.

[a] Linn. ſpec. [b] Forſter. [c] Jacquin.

DESCRIPTION, &c.

This is a small tree, with four-cornered striated branches. Leaves ovate-oblong, acuminate, quite entire, opposite. Flowers panicled, axillary.—Found in the island of St. Domingo, in woods, by Jacquin [1].]

PETIVERIA. *(So named by Plumier in honour of James Petiver, apothecary of London, author of* Museum, 1695, Gazophylacium, 1702, *collected into one volume folio, with many plates.)*

Lin. gen. n. 459. *Reich. n.* 494. *Schreb. n.* 623. & *p.* 828. *Plum.* 39. *Gærtn. t.* 75. *Juss.* 84.

Class. 6. 4. Hexandria Tetragynia. — Heptandria Monogynia. *Swartz.*

Nat. order of *Holoraceæ. Atriplices*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved: *leaflets* linear, blunt, equal, spreading, permanent.

COR. none (except the coloured calyx.)

STAM. *Filaments* six or eight, unequal, awl-shaped, converging. *Anthers* erect, linear-sagittate, bifid at top.

PIST. *Germ* ovate compressed, emarginate. *Style* very short, lateral, in the groove of the germ. (Styles four, permanent, finally bent outwards, spinescent, *G.*) *Stigma* pencil-shaped.

PER. none, except the crust over the seed.

SEED single, oblong, narrower below, roundish, compressed, emarginate: with four barbed hooks, bent back outwards, rigid, acute, the middle ones longer: (naked, but armed above with reflex spines. *G.*)

OBS. *The flowers have mostly seven stamens.* Sw.

ESSENTIAL CHARACTER.

Cal. four-leaved. *Cor.* none. *Seed* one, with reflex awns at top.

SPECIES.

1. Petiveria alliacea. *Common Guinea-hen weed.*

Lin. spec. 486. *Syst.* 350. *Reich.* 2. 131. *hort. cliff.* 141. *upsal.* 91. *Act. holm.* 1744. *p.* 287. *t.* 7. *Swartz obs.* 138. *Gærtn. fruct.* 1. 363. *Trew. Ehret.* 33. *t.* 67. *Mill. illustr. ic. Knipb. cent.* 2. *n.* 53. *Plenck, ic.* 291. *Brown. jam.* 274. *Sloan. jam.* 1. 172. *Raii suppl.* 287.

Flowers six-stamened.

2. Petiveria octandra. *Dwarf Guinea-hen weed.*

Lin. spec. 486. *Syst.* 350. *Reich.* 2. 131. *Jacqu. amer.* 201. *pict.* 52. *t.* 104. *Plum. gen.* 50. *ic.* 219.

Flowers eight-stamened.

DESCRIPTION, &c.

1. Root strong, striking deep into the ground. Stems from two to three feet high, jointed and becoming woody at bottom. Leaves oblong, three inches long and an inch and half broad, of a deep green and veined, placed alternately on short foot-stalks. The flowers are produced in slender spikes at the ends of the branches; they are very small and make no figure.

[Seed cuneiform-oblong, round-flatted, with an obscure ridge on one side and a depressed line on the other, armed at top with four pungent spines, at first almost upright, but afterwards reflected to the back; of a bay or pale-green colour [2].]

It is a common plant in most of the islands in the West Indies, where it grows in shady woods, and all the savannas, in such plenty as to become a troublesome weed. As this plant will endure much drought, it remains green when others are burned up: the cattle then feed on it, and it gives their milk the taste of Garlick, and an intolerable rankness to their flesh. It flowers here in june.

[Browne informs us that it is very common in all the lower lands of Jamaica, and that it is so remarkably acrid, as to render the smell and taste hardly tolerable. On chewing a little of the plant, it burns in the mouth, and leaves the tongue black, dry and rough, as it appears in a malignant fever. It is however thought to be coveted by Guinea Hens, and hence its name of *Guinea-hen weed.* It thrives most in a dry gravelly soil and a shady situation. Cultivated in 1758, by Mr. Miller [2].]

2. This is very like the first, but differs in having a shorter and narrower stalk, and in the flowers having eight stamens; but except to a nice observer, they may both pass for the same species. [Linnæus adds, that the leaves are more rigid and quite smooth, the filaments purple and not white. It is a mere variety of the preceding, according to Swartz.

Jacquin describes it as a shrubby plant, smelling strong of Garlick, differing from the common sort only in having eight filaments, which are all unequal, and the pencil-shaped body placed on the germ red, where as in the other it is white.

Native of the West Indies: according to Jacquin frequent in Martinico and the other Caribbee islands, flowering almost all the year.—It was cultivated in 1739, by Mr. Miller [3].]

PROPAGATION AND CULTURE.

These plants may be increased by slips or cuttings, as well as seeds; which must be sown on a hot-bed early in the spring. When the plants are come up, transplant each into a separate pot, and plunge the pots into a moderate hot-bed. When the plants have obtained a good share of strength, inure them by degrees to the open air, into which remove them towards the end of june, placing them in a warm situation, where they may remain till autumn, when they should be placed in the stove, and during winter have a moderate degree of warmth. They will produce flowers and seeds every summer, and will continue several years, remaining constantly green throughout the year.

[PETOLA. See *Momordica.*]

PETREA. *(So named by Houstoun, who discovered the plant at Vera Cruz in New Spain in* 1731, *in honour of Lord Petre, who possessed a noble collection of exotic plants, and was a great encourager of botany.)*

Lin. gen. n. 764. *Reich. n.* 822. *Schreb. n.* 1024. *Houst. reliq.* 11. *Jacqu. amer.* 180. *Juss.* 108.

Class. 14. 2. Didynamia Angiospermia.

Nat. order of *Personatæ. Vitices*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-shaped: *border* five-parted, spreading, very large, coloured, permanent: *segments* oblong, blunt, closed at the throat by five doubled, truncated scales.

COR. one-petalled, wheel-shaped, unequal, less than the calyx: *tube* very short: *border* flat, five-cleft: *segments* rounded, almost equal, spreading very much; the middle one larger and of a different colour.

STAM. *Filaments* four, concealed within the tube of the corolla, ascending, two shorter. *Anthers* oval, erect.

PIST. *Germ* ovate. *Style* simple, the length of the stamens. *Stigma* blunt.

PER. *Capsule* obovate, flat at top, two-celled, concealed at the bottom of the calyx.

SEED single, fleshy.

ESSENTIAL CHARACTER.

Cal. five-parted, very large, coloured. *Cor.* wheel-shaped. *Capf.* two-celled, at the bottom of the calyx. *Seeds* solitary.

SPECIES.

Petrea volubilis.

Lin. spec. 873. *Syst.* 565. *Reich.* 3. 163. *hort. cliff.* 319. *Jacqu. amer.* 180. *t.* 114. *pict.* 89. *t.* 173.

DESCRIPTION, &c.

It rises with a woody stalk to the height of fifteen or sixteen feet, covered with a light-gray bark, and sending out several long branches, having a whiter bark than the stem. Leaves at each joint, on the lower part of the branches placed by threes, but higher up by pairs; they are five inches long, and two inches and a half broad in the middle, drawing to a point at each end; they are stiff, and their surface is rough, of a light green, having a strong dark midrib, with several transverse veins running to the borders, which are entire. The flowers are produced at the ends of the branches in loose bunches, nine or ten inches long; each flower upon a slender pedicel about an inch in length. Calyx composed of five narrow obtuse segments, an inch long, of a fine blue colour, and much more conspicuous than the petals, which are white, and not more than half their length.

[1] Willdenow. [2] Gærtner. [3] Hort. kew. [4] Hort. kew.

Dr. Houſtoun found a variety of this with blue petals, of the ſame bright colour with the calyx, and making a fine appearance, each branch being terminated by a long ſtring of theſe flowers; whence he has ranked it among the firſt claſs of beautiful American trees.

[Jacquin deſcribes it as a ſhrubby plant, with rugged, round, brachiate branches, climbing trees to the height of twenty feet. Leaves ovate, acute, quite entire, very rugged on both ſides, petioled, oppoſite, three or four inches long. Racemes ſimple, looſe, the flowers pointing one way, handſome, terminating, pendulous, nine inches long, containing about thirty flowers; which are inodorous, open ſucceſſively, on long peduncles: calyx blue or blueiſh purple, corolla deep violet and caducous. The ſeeds very ſeldom ripen, the calyxes falling prematurely.

Native of South America and the Weſt Indian iſlands.

Linneus does honour to the nobleman from whom this plant was named, in the following words:—— "Periit egregius Petreus 1742, ætatis 32, variolis "correptus, longiori vita digniſſimus, utpote qui floræ "indicæ domicilia extruxit in Europa omnium ſplen-"didiſſima."]

PROPAGATION AND CULTURE.

This is propagated by ſeeds, which muſt be obtained from the places where the trees grow naturally, and very few of them are good; for, from the ſeeds which Dr. Houſtoun ſent to England, there were but two plants raiſed, though the ſeeds were diſtributed to ſeveral perſons; and this is a ſort of confirmation of the ſpikes of flowers being of different ſexes, and that the ſeeds gathered by the Doctor, were taken either from trees at ſome diſtance from the male, or ſuch parts of the ſame tree which were remote from the male flowers. The ſeeds muſt be ſown in a good hot-bed, and when the plants come up, they ſhould be each planted in a ſeparate ſmall pot filled with light loamy earth, and plunged into a hot-bed of tanners bark, and afterwards placed in the bark-bed in the ſtove, where they ſhould conſtantly remain, and be treated like other plants of the ſame country.

[PETROCARYA. (*From πέτρος, a ſtone; and καρυον, a nut; the ſhell of which is as hard as a ſtone.*)
Lin. gen. Schreb. n. 629. Parinari. *Aubl. t.* 204. Parinarium. *Juſſ.* 342.
Claſſ. 7. 1. Heptandria Monogynia.
Nat. order of *Pomaceæ*. *Roſaceæ*. Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, turbinate, five-cleft: *ſegments* ovate, acute, rigid, ſpreading (the two upper ones more erect?) *Leaflets* two, oblong, concave, at the baſe of the perianth.
COR. *Petals* five, ovate, acute, unequal, leſs than the calyx, and inſerted into it between the ſegments.
STAM. *Filaments* fourteen, capillary, longer than the calyx, inſerted into the edge of it below the petals; ſeven antheriferous, the other ſeven in the oppoſite (upper!) part of the calyx, barren. *Anthers* roundiſh, gaping inwardly.
PIST. *Germ* ovate, villoſe. *Style* cylindrical, curved in, villoſe, longer than the ſtamens. *Stigma* capitate.
PER. *Drupe* large, ovate, compreſſed, fleſhy-fibrous, one-celled.
SEED. *Nut* ovate, compreſſed, ſinuous wrinkled longitudinally, tubercled: *ſhell* thick, very hard, two-celled: *kernels* oblong.

ESSENTIAL CHARACTER.

Cal. turbinate, five-cleft, with two bractes at the baſe. *Cor.* five-petalled, leſs than the calyx. *Filam.* fourteen, ſeven of which are barren. *Drupe* incloſing a two-celled nut, with a ſtony ſhell.

SPECIES.

1. Petrocarya montana.
Lin. ſyſt. ed. Gmel. 596.
Parinari montana. *Aubl. guian.* 514. *t.* 204, 205.
Leaves ovate.
2. Petrocarya campeſtris.
Lin. ſyſt. ed. Gmel. 596.
Parinari campeſtris. *Aubl. guian.* 517. *t.* 206.
Leaves cordate.

DESCRIPTIONS, *&c.*

1. This is a very lofty tree, with a trunk eighty feet high, dividing at the top into very thick, wide-ſpreading branches; the ramulets or ſmaller branches being villoſe and reddiſh. The leaves are ovate and acuminate, perfectly entire and beſet on their under ſurface with a whitiſh down. The ſtipules are two, very broad, ſharp, oblong, and deciduous; and are ſemi-amplexicaul at the baſes of the leaves. The flowers are raceme-terminal; the common footſtalk being downy and whitiſh. The flowers are white. The drupe ſmooth and fulvous; it has a thick acid bark; and the nut or kernel in each loculament of the putamen is ſweet and edible. Sometimes one of the ſeeds is abortive.

A native of woods in Guiana.

2. A tree, with a trunk from thirty to forty feet high, branching at top: ramulets villoſe and whitiſh: leaves alternate, ſubſeſſile, green above, whitiſh beneath. Stipules as in the former. Flowers racemoſe, axillary, terminal, and reſembling thoſe of the former ſpecies. Drupe ovate, ſmall, with a thick, brown-green bark, which is alſo acid. Putamen very hard, compreſſed, wrinkled and unequal. A ſingle edible ſweet ſeed in each loculament.

In woods in Guiana.]

PETROSELINUM. See *Apium*, [*Bubon*, *Liguſticum*, *Siſon*.
PETTY WHIN. See *Geniſta*.
PETUM. See *Nicotiana*.]
PEUCEDANUM (*of Pliny. Πευκέδανον of Theophraſtus and Dioſcorides: from πευκη picea, and δανος humilis.* Linn.—*Rather ab amaritudine, from its bitterneſs,* πικρον *amarus and* δανος *munus.* Πτολεμαιος ρητιν ἑλαιαν πιτυδανον. *Hom. il.* κ.)
Lin. gen. n. 339. *Reich. n.* 370. *Schreb. n.* 472. *Gærtn. t.* 21. *Tournef. t.* 169. *Juſſ.* 223.
Claſſ. 5. 2. Pentandria Digynia.
Nat. order of *Umbellatæ* or *Umbelliferæ*.

GENERIC CHARACTER.

CAL. *Umbel univerſal* manifold, very long, ſlender: *partial* ſpreading.
Involucre univerſal many-leaved, linear, ſmall, reflex: *partial* leſs.
Perianth proper five-toothed, very ſmall.
COR. *univerſal* uniform. *Florets* of the diſk abortive. *Proper* of five equal oblong incurved entire petals.
STAM. *Filaments* five capillary. *Anthers* ſimple.
PIST. *Germ* oblong, inferior. *Styles* two, ſmall. *Stigmas* obtuſe.
PER. none. *Fruit* ovate, girt with a wing, ſtriated on both ſides, bipartile.
SEEDS two, ovate-oblong, compreſſed, more convex on one ſide, with three raiſed ſtreaks, girt with a wide entire membrane, emarginate at top.

ESSENTIAL CHARACTER.

Fruit ovate, ſtriated on both ſides, girt with a membrane. *Involucres* very ſhort.

SPECIES.

1. Peucedanum officinale. *Common Sulphur-wort.*
Lin. ſpec. 353. *Reich.* 1. 679. *Willd.* 1405. *hort. upſ.* 60. *cliff.* 93. *mat. med.* 78. *Gærtn. fruct.* 1. 89. *Hudſ. angl.* 116. *Wither. arr. ed.* 3. 294. *Sauv. monſp.* 182. 257. *Gmel. ſib.* 1. 188. *t.* 41. *Pollich pal. n.* 280. *Hoffm. germ.* 96. *Allion. pedem. n.* 1295. *Pieteck, ic.* 180.
Peucedanum. *Ger.* 896. 1. *emac.* 1054. 1. *Fuchſ.* 599. *Dod. pempt.* 317. *Lob. obſ.* 453. *ic.* 1. 781. *Trag.* 881. *Bauh. hiſt.* 3. 36. *Raii hiſt.* 416. *ſyn.* 206. *Riv. pent. t.* 11.
P. germanicum. *Bauh. pin.* 149.
P. vulgare. *Park. theat.* 880. 2.
β. P. italicum. *Mill. dict. n.* 2. *Italian Sulphur-wort.*
P. majus ital. *Bauh. pin.* 149. *Park. theat.* 880. 1. *Raii hiſt.* 416. 2.
Leaves five times three-parted filiform linear.
2. Peucedanum alpeſtre. *Alpine Sulphur-wort.*
Lin. ſpec. 353. *Reich.* 1. 679. *Willd.* 1405. *hort. cliff.* 93. *Buerb. lugdb.* 65. (Ferula).
Leaflets linear branched.

* Hort. kew.

[3. Peucedanum capillaceum. *Hairy-leaved Sulphur-wort. Thunb. prodr. cap.* 50. *Lin. ſpec. ed. Willd.* 1406. *Leaves bipinnate, ſegments capillaceous grooved.*

4. Peucedanum tenuifolium. *Fine-leaved Sulphur-wort. Thunb. prodr. cap.* 50. *Lin. ſpec. ed. Willd.* 1406. *Leaves bipinnatifid, ſegments lanceolate oppoſite and alternate margined.*

5. Peucedanum ſibiricum. *Siberian Sulphur-wort. Lin. ſpec. ed. Willd.* 1406. *Leaflets linear acute, primordial umbels ſeſſile.*

6. Peucedanum japonicum. *Japoneſe Sulphur-wort. Thunb. jap.* 117. *Lin. ſpec. ed. Willd.* 1406. *Leaves five times three-parted, leaflets wedge-form trifid.*

7. Peucedanum Silaus. *Meadow Sulphur-wort* or *Saxifrage. Lin. ſpec.* 354. *fl. ſuec.* 280. *Reich.* 1. 679. *Willd.* 1406. *hort. cliff.* 94. *Hudſ. angl.* 116. *Wither. arr. ed.* 3. 294. *Relh. cant. n.* 219. *Sibth. oxon. n.* 291. *Fl. ruſt.* 128. *Hall. helv. n.* 797. *Sauv. monſp.* 257. *Pollich pal. n.* 281. *Hoffm. germ.* 97. *Jacqu. auſtr. t.* 15. *Gmel. ſib.* 1. 184. *Neck. gallob.* 143. *Leers herborn. n.* 197. *Krock. ſileſ. n.* 417.

Seſeli Caruifolia. *Hudſ. angl. ed.* 1. 106.

S. pratenſe. *Baub. pin.* 162. *Raii ſyn.* 216. *Riv. pent.* 58. *Crantz. auſtr.* 209. *t.* 6. *f.* 1. *Park. theat.* 904. 3. 4.

Siler alterum pratenſe. *Dod. pempt.* 310. 2.

Sium Silaus. *Roth. germ.* 129. 2. 340.

Saxifraga anglica facie Seſeli pratenſis. *Ger.* 891. *emac.* 1047. 1. & 1048. 2. *Raii hiſt.* 453.

S. anglorum, fol. Fœniculi latioribus, &c. ſimilis Silao. *Baub. hiſt.* 3. 2. 171.

Leaflets pinnatifid, ſegments oppoſite, univerſal involucre two-leaved.

8. Peucedanum alſaticum. *Small-headed Sulphur-wort. Lin. ſpec.* 354. *fl. ſuec.* 280. *Reich.* 1. 680. *Willd.* 1407. (*hort. cliff.* 90. *Hall. helv. n.* 798. *Crantz. auſtr.* 159. Selinum.) *Neck. act. palat.* 2. 470. *t.* 3. *f.* 1r. *Jacqu. auſtr. t.* 70. *Pollich pal. n.* 282. *Hoffm. germ.* 97. *Krock. ſileſ. n.* 418. *Allion. pedem. n.* 1296.

Selinum alſaticum. *Roth. germ.* 1. 133. 2. 357.

Daucus alſaticus. *Baub. prodr.* 77. *Hall. opuſc.* 318. *Park. theat.* 900. *n.* 16.

Umbellifera alſatica magna, umbella parva ſublutea. *Baub. hiſt.* 3. 106. *Raii hiſt.* 414.

Leaflets pinnatifid, the little ſegments trifid blunt-iſh.

9. Peucedanum aureum. *Golden Sulphur-wort. Ait. hort. kew.* 1. 341. *Lin. ſpec. ed. Willd.* 1407. *Leaves tripinnate, leaflets of the ſtem-leaves linear-lanceolate, of the root-leaves oblong and multifid.*]

10. Peucedanum nodoſum. *Knobbed Sulphur-wort. Lin. ſpec.* 354. *Reich.* 1. 680. *Willd.* 1407. *hort. cliff.* 94.

Silaum (quod Liguſticum creticum, folio fœniculi, caule nodoſo. *Tournef. cor.* 23.) *Boerh. lugdb.* 1. 51.

Leaflets alternately multifid.

[11. Peucedanum geniculatum. *Jointed Sulphur-wort. Forſt. predr. n.* 136. *Lin. ſpec. ed. Willd.* 1408. *Leaves roundiſh-kidney-form crenate.*]

DESCRIPTION, *&c.*

1. Root perennial, dividing into many ſtrong fibres which run deep in the ground. Leaves naked at bottom, but about four or five inches from the root branching into five parts, and theſe again into three, each of theſe diviſions ſuſtaining three narrow leaflets, which, when bruiſed, emit a ſtrong ſcent like ſulphur: footſtalks channelled. Stems near two feet high, channelled, and dividing into two or three branches, each terminated by a large regular umbel of yellow flowers, compoſed of ſeveral ſmall umbels which are circular.

[Stem upright, from two to four feet high, ſlightly ſtriated, bright green, jointed, ſmooth. Leaves alternate, ſheathing: leaflets quite entire, mucronate, ſtiffiſh, flat, one, two or three inches in length, and a line in width, bright green, ſmooth. Umbel large, the outer rays longeſt [a]. Fruit middle-ſized, compreſſed into the ſhape of a thin lens. Seeds ſubfoliaceous, ſurrounded by a very narrow attenuated rim, having on the flat ſide two dark-ferruginous fillets, as in the Parſnep [b].

Native of the moſt ſouthern parts of Europe, in moiſt meadows. In England, Gerarde found it growing very plentifully on the ſouth ſide of a wood belonging to Waltham, at the Naſe in Eſſex, alſo at Whitſtable and Feverſham in Kent. Ray obſerved it near Shoreham in Suſſex; and adds, that it was ſaid to grow abundantly on the banks of the Thames, and in the marſh ditches near Walton, not far from Harwich. James Sherard, M. D. found it a quarter of a mile below Feverſham. Mr. Humphrey about Yarmouth and Clay in Norfolk. On the ſea wall leading to Thorne, near Feverſham, by Blackſtone. It flowers in june and july.

In England, ſays Gerarde, it is called *Horſeſtrange* and *Horſeſtreng* (or *Hareſtrang*, from the German *Haarſtrang*), *Sow-Fennell* or *Hog's-Fennell*, *Sulphur-wort* or *Brimſtone-wort*.

The root has a ſtrong fetid ſmell, and an acrid bitteriſh unctuous taſte. Wounded in the ſpring, it yields a conſiderable quantity of yellow juice, which dries into a gummy reſin, and retains the ſtrong ſcent of the root. Its virtues have not yet been aſcertained with preciſion [c].]

β. Italian Sulphur-wort is a larger plant; the leaflets are much longer, and the flowers and ſeeds are much larger. It grows on the mountains, and alſo in the low vallies, by the ſide of rivers, in Italy.

2. Root perennial. Leaves branching into ſeveral diviſions, that divide again into ſmaller, each of the latter having five ſhort narrow leaflets. Stems round, not ſo deeply channelled as in the preceding, ſuſtaining a large umbel of yellow flowers. The ſeeds are ſhorter. It flowers in june, and the ſeeds ripen at the beginning of ſeptember.

It is a native of the foreſt of Fontainbleau, and ſome other parts of France.

[3. 4. Natives of the Cape of Good Hope,

5. Leaves ſuperdecompound, with long leaflets running down into the partial petiole; the lower ſtem-leaves have a wide ſheath at the baſe. The primary umbel is ſeſſile in the diviſion of the ſtem; the reſt are peduncled. It has no univerſal involucre. The involucrets have many very ſhort briſtle-ſhaped leaflets. Petals bent in. Styles permanent, divaricating. Native of Siberia [d].

6. The whole plant is ſmooth. Stem round, flexuoſe, upright, branched, the thickneſs of a gooſe quill, ſcarcely a foot high. Branches alternate, divaricating, ſubdivided, reſembling the ſtem. Leaves petioled; leaflets five-cleft or three-cleft. Sheath of the petiole embracing, wide, ſtriated. Umbels many-rayed, ſubfaſtigiate. Seeds ovate, compreſſed, marked with raiſed lines, a little winged at the edge.—Native of Japan, on the coaſt [e].

7. Root perennial, long, wrinkled, black on the outſide, white within, having a ſweet aromatic flavour with ſome ſharpneſs. Stems ſeveral, from two to three feet in height, almoſt as thick as the little finger at bottom, round, ſtriated, full of pith, red near the ground, branched from the bottom, the branchlets coming out at long intervals from the axils of the leaves. Both root and ſtem-leaves ſmooth, dark green, divided into longiſh, narrow, acute, rigid ſegments. Umbels not very large or cloſe, but rather looſe and thin [f]. The involucre has only one or two leaflets: the involucel has twelve lanceolate leaflets, deep purple or black at the ends. The umbel has only ſeven rays, but the umbellules from twelve to twenty and upwards. The flowers are generally all fertile, but ſome of the central ones are ſometimes barren. Petals whitiſh yellow, pointed, (entire, equal.) Germ crowned with a glandular yellow receptacle, turning to a deep red as the ſeeds ripen [g]. Seeds ſhort, ſtriated, cheſtnut-coloured. The whole plant has a ſtrong, but not unpleaſant ſmell, approaching to that of Parſneps.

Native of many parts of Europe, as Switzerland,

[a] Pollich. [b] Gærtner. [c] Withering. [d] Willdenow. [e] Thunberg. [f] Ray. [g] Withering.

France,

France, Germany, England, &c. in moiſt meadows. It has the names *Saxifrage* and *Meadow Saxifraga* from its ſuppoſed ſtithontriptic qualities [k]. Auguſt is its month of flowering.

8. Stem upright, three or four feet in height, and ſometimes as high as a man, round, ſlightly ſtriated, grooved only towards the top, very ſmooth, tinged with red, and wholly red at the baſe, jointed, dichotomous. Leaves alternate, ſheathing; the lower ones tripinnate, the upper ones bipinnate; the laſt pinnas broadiſh, not ſimple, but two, three or four-lobed, bluntiſh, and terminating in a ſpinule, not keeled but flat; all of them are ſmooth and bright green. Umbel middle-ſized. Univerſal involucre of about eight leaflets: partial many-leaved. Petals regular, entire, ſmall, pale yellow. Seeds ovate, obtuſe, ſmooth, margined, with four or five longitudinal furrows in the middle [l].

Root perennial, forked, branched, black. Lower leaves decuſſating, ſmaller: pinnas veined and nerved, the firſt bifid, trifid or ſometimes ſimple, the laſt broadiſh, trifid. Univerſal involucre five or ſix-leaved: partial as many or more. Umbel of twenty or thirty unequal rays: umbellule of fewer and ſhorter. Petals ſulphur-coloured, ovate, reflex at the tip. Seeds at firſt violet red, then black [k].

Native of Germany, Auſtria, Alſace, Switzerland, Sileſia, Piedmont. Introduced in 1774, by Monſ. Richard. It flowers in june and july.

9. Native of the Canary iſlands, where it was found by Maſſon; and introduced in 1779. It is a biennial plant, and flowers in june [l].]

10. The ſtalks riſe a foot and half high, having pretty large knots at the joints, from each of which ſprings a leaf cut into many diviſions; the flowers terminate the ſtalks in umbels, and appear the beginning of july; in warm ſeaſons the ſeeds will ripen in the autumn.

Native of Crete or Candia, and not of long duration in England. [Cultivated by Mr. Miller in 1768.

11. Native of New Zealand [m].]

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds ſown in the autumn, ſoon after they are ripe: thoſe which are ſown in the ſpring ſeldom ſucceeding, or at beſt not coming up till the ſpring following. Keep the plants clean from weeds, and in the autumn tranſplant them where they are to remain. They love a moiſt ſoil and a ſhady ſituation, but will not thrive under the drip of trees.

[PEUCEDANUM MINUS. See *Pimpinella dioica.*

PEVETTI. See *Phyſalis.*

PEZIZA.

Claſſ. 24. 6. Cryptogamia Fungi.

GENERIC CHARACTER.

Fungus bell-ſhaped, ſeſſile, concealing lens-ſhaped, ſeed-bearing bodies.—Plant concave; ſeeds on the upper ſurface only: diſcharged by jerks. *Withering.*

Of this genus of *Fungus*, Linneus has eleven ſpecies in the 14th edition of *Syſtema Vegetabilium*: but Dr. Withering has given no leſs than forty Britiſh ſpecies, in the third edition of his Arrangement.

PEZIZA. See *Nidularia* and *Oſtoſpora.*]

PHACA. (Φακὸς *of Dioſcorides.*)

Lin. gen. n. 891. *Reich. n.* 964. *Schreb. n.* 1207, *Gærtn. t.* 154. *Juſſ.* 358. Aſtragaloides. *Tournef. t.* 223.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, five-toothed.

COR. papilionaceous. *Standard* obovate, ſtraight, larger. *Wings* oblong, blunt, ſhorter. *Keel* ſhort, compreſſed, blunt.

STAM. *Filaments* diadelphous (ſimple and nine-cleft.) *Authers* roundiſh, aſcending.

PIST. *Germ* oblong. *Style* awl-ſhaped, aſcending. *Stigma* ſimple.

PER. *Legume* oblong, inflated, half two-celled; with the upper future depreſſed towards the lower.

SEEDS ſeveral, kidney-form.

OBS. *Legume in ſome ſtraight, in others recurved, ſo that the lip almoſt touches the baſe.*

In ſome ſpecies of Aſtragalus, the partition of the Legume not being faſtened to the lower future, though it approximates to it, the great affinity between that genus and this is apparent.

ESSENTIAL CHARACTER.

Legume half-two-celled.

SPECIES.

1. Phaca boetica. *Hairy Phaca* or *Baſtard Vetch.*
Lin. ſpec. 1064. *Reich.* 3. 523.
Aſtragalus boeticus. *Cluſ. hiſt.* 2. 234. *Park. theat.* 1084. *f.* 1. *Raii hiſt.* 920.—lanuginoſus radice ampliſſima. *Baub. pin.* 351.
A. luſitanicus Cluſii. *Ger.* 1058. *emac.* 1238. 1.
Cauleſcent erect hairy, legumes round-boat ſhaped.

2. Phaca alpina. *Smooth Phaca* or *Baſtard Vetch.*
Lin. ſpec. 1064. *ſyſt.* 680. *Reich.* 3. 524. *fl. ſuec. n.* 657. *Gærtn.* 2. 341. *Jacqu. ic. rar. miſc.* 2. 93. *Fl. dan. t.* 856. *Villars dauph.* 3. 472. *Allion. pedem. n.* 1253. *Gmel. ſib.* 4. 35. *t.* 14. *Hall. helv. n.* 401. (Aſtragalus).
Aſtragaloides elatior, &c. *Amm. ruth.* 148.
Cauleſcent erect ſmooth, legumes oblong inflated ſomewhat hairy.

[3. Phaca falſula.
Lin. ſyſt. 680. *ſuppl.* 336. *Pallas it.* 3. 747. *t.* B. b. *f.* 1. 2.
Cauleſcent erect canefcent, leaves pinnate, legumes pedunculed globular drooping.

4. Phaca fibirica.
Lin. ſpec. 1064. *ſyſt.* 680. *Reich.* 3. 525. *ſuppl.* 336.
P. lanata. *Pallas it.* 3. 746. *t.* A. a. *f.* 2.
Aſtragaloides hirſuta, &c. *Amm. ruth.* 249. *t.* 19. *f.* 1, 2.
Cauleſcent, leaflets in fours lanceolate blunt ſilky, calyx villoſe, teeth briſtle-ſhaped.

5. Phaca auſtralis. *Trailing Phaca* or *Baſtard Vetch.*
Lin. ſyſt. 680. *Reich.* 3. 524. *mant.* 103. *Hall. helv. n.* 403. *Ger. prov.* 519. *Allion. pedem. n.* 1254.
P. Halleri. *Villars dauph.* 3. 473.
Aſtragaloides alpina ſupina glabra, foliis acutioribus. *Till. piſ.* 19. *t.* 14. *f.* 1.
Stem branched proſtrate, leaflets lanceolate, wings of the flowers ſemibifid.

6. Phaca trifoliata. *Three-leaved Baſtard Vetch.*
Lin. ſyſt. 680. *Reich.* 3. 524. *mant.* 270.
Leaves ternate oval blunt, legumes ſemiorbiculate.

7. Phaca veſicaria. *Smooth Bladdery Baſtard Vetch.*
Lin. ſyſt. 680. *Reich.* 3. 525. *mant.* 123. *Schreb. dec.* 9. *t.* 7.
Aſtragaloides orientalis veſicaria, foliis et fructibus glabris. *Tournef. cor.* 27.
Stemleſs ſmooth, fruiting calyxes ovate inflated, leaflets lanceolate.

8. Phaca incana. *Hoary bladdery Baſtard Vetch.*
Vahl ſymb. 1. 57.
A. orient. veſic. fol. & fruct. incanis. *Tournef. cor.* 27.
Stemleſs hoary, fruiting calyxes ovate inflated villoſe, leaflets oblong blunt.

9. Phaca proſtrata. *Procumbent Baſtard Vetch.*
Lin. ſyſt. 680. *ſuppl.* 336. *Pallas it.* 3. 744. *t.* Y. *f.* 2.
Stemleſs, leaflets binate linear ſilky, ſcape procumbent, calyx villoſe, teeth lanceolate ſhort.

10. Phaca microphylla. *Small-leaved Baſtard Vetch.*
Lin. ſyſt. 680. *ſuppl.* 337. *Pallas it.* 3. 744. *t.* X. *f.* 1.
Stemleſs, leaflets binate ovate obtuſe villoſe, calyx muricate and hairy, teeth bifpid every way.

11. Phaca muricata.
Lin. ſyſt. 680. *ſuppl.* 337. *Pallas it.* 3. 746. *t.* A. a. *f.* 1.
Stemleſs, leaflets in threes or fours linear awl-ſhaped muricate underneath, calyx ſmooth, teeth ciliate.]

[k] Ray. [l] Pollich. [m] Krocker. Forſter. [f] Hort. kew.

DESCRIPTIONS, *&c.*

1. Roots perennial, running very deep into the ground. Stems commonly near four feet high, becoming woody, but decaying every autumn. Flowers in ſhort axillary ſpikes, ſeldom opening in England, unleſs the ſeaſon proves very warm, and never producing ſeeds here.

Native of Spain and Portugal. [Cultivated here in 1640, as appears from Parkinſon [a].]

2. This has ſmooth ſtalks, which do not riſe ſo high as thoſe of the preceding; the flowers are ſmaller, the pods ſhorter and hanging down. It flowers in two years from ſeed, and the roots rarely live longer than three or four years.

[Plant a foot high. Stem angular, ſtriated, almoſt upright, but bending from leaf to leaf. Leaves pinnate, alternate, longer than the internodes: leaflets ovate-oblong, blunt, from ſeven to fifteen, ſmooth, pubeſcent underneath. Stipules haſtate, acute, quite entire. Peduncles thicker and longer than the petioles, angular, naked, upright. Raceme looſe; pedicels the length of the calyxes; bractes lanceolate, commonly longer than the pedicel. Flowers pendulous, imbricate, ſmooth, yellow. Calyx bell-ſhaped, ſmooth, with brown teeth. Corolla oblong, yellow. Germ pedicelled, hairy. Legume ſemiovate, compreſſed [b].

Stems firm, ſtraight, villoſe, branched, two feet high, with membranaceous, lanceolate, cordate or triangular ſtipules, ſeven or eight lines in length; thoſe at the baſe of the leaves are narrower, but often as long as the leaflets; which are villoſe, oblong, in twelve or fourteen pairs. Peduncles from the axils of the upper leaves, villoſe, terminating in a ſpike of flowers of a fine yellow colour: wings quite entire; keel without any ſpot. Calyx ſmall, villoſe and blackiſh. Legumes villoſe when young, but becoming ſmooth before they have attained their full ſize, inflated, pointed on both ſides and irregular, the upper future being ſtraight, the lower very convex. Seeds eight [c].

According to Villars, Linneus has confounded *Phaca frigida* of Jacquin, with *P. alpina*; or perhaps he was not acquainted with the *Ph. alpina* of Dauphiné. Haller, in his later works has diſtinguiſhed them.

Jacquin thus deſcribes it. Root perennial, reſembling that of *P. auſtralis*; producing ſeveral ſtems, about a ſpan long, upright, but ſometimes procumbent at the baſe, round, ſtriated, at firſt villoſe, but becoming almoſt ſmooth. Leaves having from twelve to fifteen pairs of pinnas with an odd one: the pinnules on very ſhort petioles, oblong-oval, quite entire, having a ſhort little cuſp at the tip, ſmooth above, villoſe underneath: the common axis of the pinnas alſo villoſe. Stipules ſeſſile, entire, lanceolate, villoſe. Common peduncles from almoſt all the axils, erect, villoſe, longer than the leaves, having at top a compact ſpike of flowers, which is afterwards drawn out into length, with the flowers ſomewhat remote from each other. Flowers erect, on very ſhort pedicels, from the axil of a very ſmall, linear-ſubulate bracte. Calyx beſet with blackiſh, villoſe hairs. Corolla yellow, of one colour: ſtandard longer than the wings and keel, obcordate, the ſides a little plaited back; wings converging about the keel, on a longiſh claw, having a lateral toothlet; keel of the ſame length with the wings, having a ſimilar toothlet on each ſide. Germ pedicelled, linear, compreſſed, reddiſh black. Legumes at firſt nodding, finally pendulous, boat-ſhaped; the belly inflated, the back ſo much impreſſed, that the legume is half-two-celled; they are villoſe even when ripe, though the hairs, being proſtrate, and leſs black, are leſs apparent. Seeds round. The plant has no ſmell [d].

Native of Siberia, Lapland, Auſtria, &c. Cultivated by Mr. Miller in 1759. It flowers in july [e].

Jacquin doubts whether the *Phaca* which Gerard has deſcribed in his Flora Gallo-provincialis be the ſame with this; the leaves being ſomewhat different, and the habit very much ſo. See *n.* 5.

3. In the herb and form of the legumes this very much reſembles *Aſtragalus chinenſis*. Native of Siberia [f].

4. The whole is cloathed with ſoft white hairs. Leaves pinnate to the very inſertion, ſilky. Peduncles ſhorter than the leaves. Corollas purple. Legumes ovate, woolly.

Native of Siberia, in very dry ſand. Both theſe were found by Profeſſor Pallas [g].

5. Leaves ſix-paired or thereabouts, aſh-coloured, hairy. Flowers whitiſh yellow. Wings ſemibifid, which is ſingular. Legumes ſmooth. The keel of the corolla is violet, nor has it the two violet ſpots at the tip, as in *Ph. alpina*, from which it differs little. When young it is hirſute, but as it advances becomes ſmooth, and appears like a different plant [h].

Villars deſcribes it under the name of *Phaca Halleri*. Root hard, ſmall, creeping, divided at the upper part into ſeveral branches. Stems ſeveral, ſmooth, almoſt ſtraight, half a foot long, ſometimes branched. Leaves on a petiole naked at the baſe, placed between two lanceolate ſtipules, compoſed of five or ſeven, as far as thirteen leaflets, which are lanceolate, tender, green, diſtinct, ſmooth, or very ſlightly villoſe underneath. Peduncles from the upper axils, exceeding the plant in height, and terminated by ten or twelve flowers, which are whitiſh or grayiſh, with a ſmall blackiſh ſtripe, correſponding with the extremity of the keel: ſtandard ſtraight, almoſt round, emarginate; wings oblong, with a triangular notch, equal to the two lateral pieces; a ſingular character which Haller notices, but which is found in ſome ſpecies of the *Aſtragalus*. Legumes pendulous and peduncled, inflated and ſmooth, in a blackiſh calyx; they are ſlightly villoſe, and contain from eight to ten ſeeds.

Villars deſcribes another, under the name of *Phaca Gerardi*, ſuppoſing it may probably be the plant of Monſ. Gerard, but neither Haller's n. 403. nor Linneus's *P. auſtralis*.

Roots hard, ſmall and branching as in the preceding. Stem from eight or ten inches to a foot in length, proſtrate. Stipules villoſe and ciliate, in other reſpects like thoſe of the *P. Halleri*. Flowers commonly on two peduncles, longer than the leaves. Leaflets fifteen or twenty in number, whitiſh. Calyx villoſe and blackiſh. Standard oblong, and ſtanding up: wings oblong, narrow, rounded at the end: keel a little ſhorter than the wings, having a little black at the end. Legume a little villoſe. It is difficult to diſtinguiſh theſe two plants, without ſeeing the wings of the corolla, which in the latter have not the ſingular character noticed by Haller and Linneus. *Ph. Gerardi* however ſeems to be more villoſe, and is leſs uncommon; the ſtems alſo are leſs proſtrate.

Native of the South of Europe. Introduced in 1779, by Anthony Chamier, Eſq. It flowers in may and june [i].

6. Stems filiform, branched. Leaves petioled. Leaflets tomentoſe underneath, marked with lines; the middle one larger. Stipules lanceolate, drying up, having a briſtle-ſhaped point. Raceme terminating: pedicels geminate, one-flowered. Legumes blunt, the upper future running out into a briſtle-ſhaped recurved dagger-point.—Native of China [k].

7. Root-leaves pinnate, twelve-paired and more. Leaflets ſmooth, acuminate. Scapes upright, terminated by a raceme. Calyxes alternate, on ſhort peduncles, when fruiting four times wider, globular, ſmooth, coloured. Legume ſmall, within the oblong calyx.—Native of the Levant [l], where it was found by Tournefort.

8. Leaves pinnate: leaflets thirty-nine to forty five, ſeſſile: the lower oppoſite; the upper ones gradually ſmaller, alternate. Stipules lanceolate, hirſute, imbricate, at the baſe of the leaves. Scape a ſpan long, round, upright. Flowers ſeſſile: the lower ones more remote, ſpreading. Bracte ovate, villoſe, acute. Flowering calyxes cylindrical, ſoftly villoſe, brown; the younger ones ſubtomentoſe: teeth five, awl ſhaped, ſmall. Corolla a little longer than the calyx. It differs from the preceding in its hoarineſs, the villoſeneſs of the fruiting calyxes, and in having oblong, blunt,

[a] Hort. kew. [b] Linn. ſuec. [c] Villars. [d] Miſc. 2. 93. [e] Hort. kew. [f] Linn. ſuppl. [g] Linn. ſuppl. [h] Linn. mant. & ſyſt. [i] Hort. kew. [k] Linn. mant. [l] Idem.

approximating leaflets.—Native of Armenia[a], where it was found by Tournefort.

9. A radical tuft, compoſed of very villoſe white ſcales. Leaves fewer, on longer ſomewhat ſpiral petioles. Scapes radical, looſe, almoſt ſmooth, ſcarcely larger than the leaves.—Found by Profeſſor Pallas in the ſalt ſands about the lakes of Siberia.

10. Leaves fewer, ſhorter, on very villoſe petioles: leaflets very ſmall. Scapes pubeſcent, erect. Calyxes ſmooth, but tubercled: teeth with black hairs. Corolla large, purple.—Found by Pallas in the ſandy iſlands of Siberia.

11. Root-leaves ſeveral, from a villoſe tuft, longer. Leaflets as it were in whorls, channelled, ſmooth within, tubercled underneath. Scapes erect, ſmooth. Braſtes and calyxes ſmooth. Corollas yellow. Legumes long, bowed, muricate.—Found by Pallas in the mountainous fields of Siberia.

The third, fourth, ninth, tenth and eleventh ſpecies have the habit of *Aſtragalus*. Perhaps *Aſtragalus verticillaris*, and many *Phacæ* deſcribed and figured by Pallas belong to this genus[b].]

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds, ſown in the place where the plants are to remain: for as the roots ſtrike deep, it is difficult to tranſplant them ſafely, eſpecially when they have remained long in the ſeed-bed. The plants ſhould be left about ſix feet aſunder, that there may be room to dig between them every ſpring, which is all the culture they require, except keeping them clean from weeds.

[PHACA. See *Aſtragalus*.

PHAETHUSA. (*From* Φαεθω, *ſplendeo.*)

Lin. gen. Schreb. n. 1319. *Gærtn. t.* 169.

Claſſ. 19. 2. Syngeneſia Polygamia Superflua.

GENERIC CHARACTER.

CAL. *Common* many-leaved: *leaflets* in a double row, oblong, gaping at the tip, blunt.

COR. *Compound*, half-radiate. *Corollets* hermaphrodite ſeveral in the diſk: *females* one to three in the ray, only on one ſide of the flower.

Proper of the hermaphrodites funnel-form, five-toothed, pubeſcent.

Female liguiate, oblong, toothed, very long.

STAM. in the hermaphrodites: *Filaments* five, very ſhort. *Anther* cylindrical, tubular, a little longer than the corolla.

PIST. in the hermaprodites: *Germ* oblong, villoſe. *Style* filiform, longer than the ſtamens. *Stigmas* two, reflex.

In the *females*: *Germ* oblong, a little bigger. *Style* filiform, the length of the hermaphrodites. *Stigmas* two, reflex.

PER. none. *Calyx* unchanged.

SEEDS in the hermaphrodites ſolitary, oblong, compreſſed, villoſe. *Down* of two awns. In the *females* very like the others.

REC. chaffy: *chaffs* linear, acute, longer than the calyx.

ESSENTIAL CHARACTER.

Cal. ſubcylindric, many-leaved, with unequal recurved ſcales. *Florets* hermaphrodite ſeveral in the diſk: females one or two in the ray. *Recept.* chaffy. *Seeds* hiſpid, without any proper down.

SPECIES.

1. Phaethuſa americana.
Gærtn. fruct. 2. 425.

Sigeſtheckia occidentalis. *Lin. ſpec.* 1269. *ſyſt.* 779. *Reich.* 3. 875. *mant.* 475. *Gron. virg.* 128. *ed.* 1. 179. (Verbeſina). *Pluk. phyt. t.* 346. *f.* 46. (Chryſanthemum).

DESCRIPTION, *&c.*

Stem gigantic, eighteen feet high, narrowly four-winged by the decurrent petioles. Leaves large, oppoſite, ovate-acuminate, triple-nerved, obſoletely ſerrate, ſubpubeſcent. Corymb terminating brachiate, very wide. Hermaphrodite corollets hirſute on the outſide, with prominent dark-coloured anthers. Females commonly ſolitary, ſcarcely ever in threes: ligule ſulphur-coloured, ovate, attenuated to both ends, very ſhortly two-toothed at the tip. Down none, except the ſhagginеſs of the ſeed produced a little above the top of it, reſembling a chaffy-lacerated rim. It differs abundantly both from *Sigeſtheckia* and *Milleria*, in the whole of its external habit, the florets and ſeeds; inſomuch that it cannot be aſſociated with either[c].—Native of Virginia.

PHAGUS. See *Quercus*.]

PHALANGIUM. See *Anthericum*, [*Conwallaria. Hemerocallis, Ornithogalum, Scilla.*]

PHALARIS, (*of Pliny*, Φαλαρις *of Dioſcorides, from* φαλος, *ſhining.*)

Lin. gen. n. 74. *Reich. n.* 80. *Schreb. n.* 106. *Gærtn. t.* 80. *Juſſ.* 29.

Claſſ. 3. 2. Triandria Digynia.

Nat. order of *Gramina, Graminеæ* or *Graſſes*.

GENERIC CHARACTER.

CAL. double, one-flowered. *Outer glume* two-valved, compreſſed: *valves* boat-ſhaped, compreſſed, keeled, acute, almoſt equal, with the edges ſtraight, converging parallelly. *Inner* two-valved: *valves* lanceolate, acute, pubeſcent, ſmall, incumbent on the back of the corolla at the baſe.

COR. two-valved, leſs than the calyx: *valves* oblong, concave, acute; *the inner* ſmaller.

Nectary two-leaved: *leaflets* lanceolate, acuminate, hyaline, gibbous at the baſe.

STAM. *Filaments* three, capillary. *Anthers* oblong, forked.

PIST. *Germ* ovate. *Styles* two, capillary, connate at the baſe. *Stigmas* villoſe.

PER. none. The *corolla* grows round the ſeed like a cruſt, and does not open.

SEED ſingle, ovate-oblong, acuminate, ſmooth.

OBS. Ph. phleoides and paradoxa *do not ſeem to have neĉtaries*. Retz.

ESSENTIAL CHARACTER.

Cal. two-valved, keeled, the valves equal in length, incloſing the corolla.

SPECIES.

1. Phalaris canarienſis. *Cultivated Canary-graſs.*
Lin. ſpec. 79. *ſyſt.* 103. *Reich.* 1. 148. *Willd.* 326. *hort. cliff.* 23. *upſ.* 19. *mat. med.* 46. *Gærtn. fruct.* 2. 6. *Hudſ. angl.* 23. *Wither. arr. ed.* 3. 113. *Sibth. oxon. n.* 102. *Schreb. gram.* 83. *t.* 10. *f.* 2. *Retz. obſ.* 3. *p.* 8. *Neck. gallob.* 30. *Leers herborn. n.* 48. *t.* 7. *f.* 3. *Krock. ſilef. n.* 85. *Deſfont. fl. atlant.* 55. *Knipb. orig. cent.* 9. *n.* 76. *Ludw. eſt. t.* 117. *Plenck, ic. t.* 41. *Fl. ruſſ. t.* 17.

Phalaris. *Camer. epit.* 661. *Bauh. hiſt.* 2. 442. 2. *Tabern.* 240. *Matth.* 919. *Dod. pempt.* 510. *Ger.* 80. 1. *emac.* 86. *Lob obſ.* 26. 1. *ic.* 43. *Raii hiſt.* 1248.

P. Dioſcoridis. *Trag.* 669.

P. vulgaris. *Park. theat.* 1163. 1.

P. major ſemine albo. *Bauh. pin.* 28. *theat.* 534. *Mor. hiſt.* 3. 186. *f.* 8. *t.* 3. *f.* 1. *Scheuch. agr.* 52. *t.* 2. *f.* 3. *Raii ſyn.* 394.

Panicle awnleſs ſubovate ſpike-ſhaped, calycine glumes boat-ſhaped entire, corolla four-valved, outer valves lanceolate ſmooth, inner villoſe.

[2. Phalaris aquatica. *Water Canary-graſs.*
Lin. ſpec. 79. *Reich.* 1. 148. *Willd.* 326. *amœn.* 4. 264. *Deſfont. fl. atlant.* 56. *Fl. ruſſ. t.* 18. *Barr. rar.* 1200. *t.* 700. *f.* 1. (Gramen typhinum).

Ph. minor. *Retz. obſ.* 3. 8.

Panicle awnleſs cylindrical ſpike-ſhaped, calycine glumes boat-ſhaped, ſomewhat toothletted, corolla three-valved, inner valves villoſe, outer minute awl-ſhaped.

3. Phalaris capenſis. *Cape Canary-graſs.*
Lin. ſpec. ed. Willd. 327. *Houmb. prodr. cap.* 19.

Panicle ſpiked ovate, glumes entire, culm jointed decumbent.

4. Phalaris bulboſa. *Bulbous Canary-graſs.*
Lin. ſpec. 79. *Reich.* 1. 148. *Willd.* 327. *amœn.* 4. 264. *Cavan. hiſp.* 1. 46. *t.* 64. *Deſfont. fl. atlant.* 55.

P. bulb. ſemine albo. *Park. theat.* 1163. *Raii hiſt.* 1249. *Scheuch. gram.* 53.

[a] Vahl. [b] Linn. ſuppl. [c] Gærtner.

Panicle

Panicle awnleſs cylindrical ſpike-ſhaped, calycine glumes boat-ſhaped toothed, corolla two-valved, ſmooth, root bulbous.

5. Phalaris nodoſa. *Knobbed-rooted Canary-graſs.*
Lin. ſyſt. 104. *Reich.* 148. *Willd.* 327. *mant.* 557.
P. perennis major, radice nodoſa. *Mor. biſt.* 3. 187.
Panicle oblong, leaves rigid.

6. Phalaris dentata. *Tooth-keeled Canary-graſs.*
Lin. ſpec. ed. Willd. 327. *ſuppl.* 106. *Thunb. prodr. cap.* 19. *Retz. obſ.* 4. 14.
Spike ſubpanicled cylindric, glumes ſerrate, culm jointed.

7. Phalaris phleoides. *Cat's-tail Canary-graſs.*
Lin. ſpec. 80. *ſyſt.* 104. *Reich.* 1. 149. *Willd.* 328. *ſ. ſuec. n.* 54. *Wither. arr. ed.* 3. 114. *Engl. bot. t.* 459. *Fl. dan. t.* 531. *Pollich pal. n.* 54. *Gmel. ſib.* 1. 86. *n.* 13.
Gramen typhinum, ſpica conoide ſtriata, culmo violaceo. *Barrel. ic. t.* 21.
Panicle nearly cylindrical ſpike-form, glumes linear-lanceolate ſmoothiſh, their inner margin abrupt, ſtem ſimple.

8. Phalaris arenaria. *Sea Canary-graſs.*
Lin. ſpec. ed. Willd. 328. *Huds. angl.* 23. *Wither. arr. ed.* 3. 113. *Engl. bot. t.* 222.
P. phleoides β. *Ait. hort. kew.* 1. 86.
Phleum arenarium. *Lin. ſpec.* 88. *Reich.* 1. 164. *ſ. ſuec. n.* 58. *Fl. dan. t.* 915.
Gramen typhinum maritimum minus. *Raii ſyn.* 398. *Pluk. phyt. t.* 33. *f.* 8.
Panicle awnleſs cylindrical ſpike-form, calycine glumes keeled quite entire ciliate, culm branched.

9. Phalaris aſpera. *Rough Canary-graſs.*
Lin. ſpec. ed. Willd. 328. *Retz. obſ.* 4. 14. *Vahl ſymb.* 3. 9. *Lamarck. encycl.* 1. 92.
P. paniculata. *Ait. hort. kew.* 1. 87. *Sibth. oxon. n.* 103.
Phleum paniculatum. *Huds. angl.* 26. *Wither. arr. ed.* 3. 117. *Relh. cant. ſuppl. n.* 998.
Phl. viride. *Allion. pedem. n.* 2133.
Phl. aſperum. *Villars dauph.* 2. 61. *t.* 2. *f* 4.
Gramen typhoides aſperum primum. *Bauh. pin.* 4. *theat.* 51.
Panicle awnleſs cylindrical ſpike-form, calycine glumes keeled, gibbous at top, corolla two-valved ſmooth.

10. Phalaris utriculata. *Bladdery Canary-graſs.*
Lin. ſpec. 80. *Reich.* 1. 149. *Willd.* 329. *Ait. hort. kew.* 1. 86. *Scop. inſubr.* 1. 28. *t.* 12.
Gramen pratenſe, ſpica purpurea ex utriculo prodeunte, &c. *Bauh. pin.* 3. *theat.* 44. 4. *Scheuch. gram.* 55. *Tournef. inſt.* 519.
G. pratenſe. *Dalech. biſt.* 1. 425. *f.* 3.
Panicle ovate ſpike-form, calycine glumes boat-ſhaped dilated at the back, awn longer than the glumes.

11. Phalaris paradoxa. *Briſtly-ſpiked Canary graſs.*
Lin. fil. dec. 35. *t.* 18. *Spec.* 1665. *Reich.* 1. 149. *Willd.* 329. *Ait. hort. kew.* 1. 86. *Schreb. gram. t.* 12. *Deſfont. fl. atlant.* 56.
Gramen phalaroides luſitanicum. *Raii biſt.* 1218.
Gr. phal. ſpica brevi reclinata ex utriculo prodeunte. *Pluk. phyt. t.* 33. *f.* 5. *Mor. biſt.* 3. 187. *f.* 8. *t.* 3. *f.* 6. *Monti prodr.* 47.
Panicle awnleſs oblong ſpike form, calycine glumes boat-ſhaped one-toothed, corolla two-valved ſmooth, loweſt florets end-bitten.

12. Phalaris hiſpida. *Hairy-calyxed Canary-graſs.*
Lin. ſpec. ed. Willd. 330. *Thunb. jap.* 44.
Spikes digitate, glumes rugged, leaves ovate.

DESCRIPTIONS, *&c.*

1. Root annual. Culm from a foot to eighteen inches in height, upright, round, ſtriated, ſwelling a little at the joints, and at the lower ones often branching. Leaves almoſt half an inch in breadth, of a lively green, with ſomething of a glaucous hue; they grow upright, are ſharp-pointed, roughiſh about the edge, and have at the baſe a very thin pellucid membrane or ligule: the lower part of the upper leaf ſwells out like a ſpathe, completely involving and protecting the head of flowers whilſt young. This is ſingle, large, an inch or more in length, and has a ſmall linear ſheathleſs leaf at the baſe of it. Valves of the calyx much larger than thoſe of the corolla, with two green ribs on each ſide. Within theſe are two other ſmall white ſkinny valves, not more than half the length of the inner valves of the corolla, the larger valve of which is hairy, the other only ſo along its back. The nectary is two fleſhy concave pear-ſhaped ſubſtances on the outſide the baſe of the corolla[d]. Seed marked with a blackiſh-brown line at one edge, and having a little ſhield at the baſe of the other; it continues covered with the corolla, one valve of which almoſt wholly embraces the other. This cover varies much in colour, being milk-white, ſtraw-coloured, aſh-coloured, livid, bay, cheſtnut and even black, but it is always very ſmooth and ſhining[e].

Canary-graſs is a native of the Canary iſlands, but is now found in a wild ſtate in Britain, Flanders, Heſſe, Sileſia, France, Italy and Spain. Our circumnavigators alſo diſcovered it in New Zealand. It is not mentioned as an indigenous plant with us by any of our old authors, not even in the third edition of Ray's ſynopſis (1724). It does not ſeem to be found in our iſland, except about dunghills, or by road ſides, in places where it may have been thrown out among rubbiſh, or caſually dropped by birds. Dr. Withering mentions that it has been found by Mr. Ballard in New's-wood, adjoining to Malvern, Worceſterſhire. Dr. Sibthorp obſerved it behind the Obſervatory at Oxford: and Dr. Milne near New Croſs, on the Maidſtone road, by Deptford Creek, and in Charlton wood. It flowers from june to auguſt; and is cultivated for the ſake of the ſeeds, which are the beſt food for the Canary and other ſmall birds.

2. Root annual, according to Linneus; perennial and bulbous, according to Deſfontaines. Culm reedy. From the ſwelling ſheath of the upper leaf iſſues one ſmooth thick ſpike-ſhaped panicle of an oblong-ovate form. The glumes are lanceolate, ſmooth, keeled, and marked with a nerve on each ſide, pretty much like thoſe of the preceding.

Retzius deſcribes his *Ph. minor* as an annual graſs, reſembling *Ph. canarienſis*, but ſmaller, the panicle narrower and not ventricoſe. Between the leſſer ciliate glume of the corolla and the calyx there is a leaflet which may paſs for the nectary, although it is on the outſide of the corolla. The ſeeds were ſent him under the name of *Ph. tuberoſa*, but the root has no tubers.

Native of Egypt. Introduced in 1778 by Monſ. Thouin. It flowers in june and july[f].

3. This is an annual graſs, native of the Cape of Good Hope.

4. Culm a foot high, ſwelling out at the baſe, commonly into three round bulbs, one above another, the lower having filiform fibres at the bottom. Leaves for an inch and more having a ventricoſe ſheath, above which they grow upright, and are lanceolate and acute. Flowers in a cloſe, cylindrical ſpike-like panicle; each on a ſhort pedicel[g].

It differs from *Ph. canarienſis* in having a more ſlender ſpike, of a cylindric ſhape. The ſeeds are only half the ſize, of a gray colour, and do not adhere to the glume. The ſeeds are gathered by the Moors and ſent into Europe[h].

Native of Spain, the Levant and Barbary; in which latter country the roots are not bulbous[i]: but that in graſſes does not make a ſpecific diſtinction.

Deſfontaines has a graſs which he names *Phalaris cæruleſcens*, and to which he refers the ſynonym of Buxbaum (4. 30. *t.* 53. attributed by Linneus to *Ph. aquatica*. It has a looſer ſpike than *Ph. bulboſa*, and the glumes are blueiſh. The culm is upright, naked above, and filiform. The leaves ſmooth. The ſpike branched, round, looſiſh. The outer calyx two-glumed, one-flowered: glumes membranaceous, keeled, acuminate, converging, almoſt equal, pale blue. Inner calyx alſo two-glumed: glumes ſmall, acute, almoſt equal, ſhorter than thoſe of the outer.—It is found in the arable fields about Algiers.

5. Leaves rigid, like thoſe of Reed, rugged at the edge; the uppermoſt ſlightly ventricoſe. Spike com-

[d] Withering. [e] Gærtner. [f] Hort. kew. [g] Cavanilles. [h] Deſfontaines. [i] Idem.

pact, ovate-oblong, awnleſs. Calyxes ovate-oblong. Native of the South of Europe [k].

6. This has the ſtature of P. phleoides. Culms ſmooth, with ſhort leaves. Glumes compreſſed: keel cartilaginous, toothed: teeth globuliferous at the tip. It is a handſome graſs, and very diſtinct at firſt ſight [l]. In the Supplement the glumes are ſaid to be hirſute; but Retzius ſays, that in his ſpecimen they are ſmooth and naked.—Native of the Cape of Good Hope.

7. Root fibrous, perennial, crowned with tufts of ſpreading glaucous leaves which endure the whole winter. Culm ſimple, generally ſolitary, moſt leafy below, round, ſmooth, purple and ſhining above, from ten to eighteen inches in height. Leaves ſheathing, linear-lanceolate, rough at the edge, their ſheaths ſcarcely inflated, roughiſh. Panicle ſolitary, erect, denſe, exactly like a ſpike, but when bent on one ſide it ſeparates into lobes or branches of ſeveral flowers each. Calyx nearly linear, ſomewhat conſtricted near the top, purpliſh; valves compreſſed, pointed, three-nerved, a little divaricated at the point, and furniſhed with a white membranous margin, which at its ſummit is in ſome degree abrupt, approaching to the ſtructure of a *Phleum*: but it cannot be conſidered as ſuch, on account of its ſtrict affinity to *Phalaris arenaria*; from which it differs however in having a perennial root, a branched or panicled ſpike, glumes leſs frequently and completely ciliate, and lanceolate (not abrupt or crenate) petals [m]. Dr. Withering obſerves, that the panicle is from near two inches to three inches and a half in length, thick as a gooſe quill: and Dr. Stokes, that a ſtiff awn-like thread riſes from the baſe of the inner valve, one third of its length, analogous to that of *Arundo arenaria*. Linneus regards this graſs as intermediate between *Phalaris*, *Phleum* and *Alopecurus*.

Native of ſeveral parts of Europe and Siberia. In England firſt obſerved by Mr. Lyons in Cambridgeſhire, and afterwards by Mr. Hemſted on Chippenham park wall in the ſame county. Mr. Crowe and Mr. Woodward found it on Swaffham heath in Norfolk, in 1780. Theſe two gentlemen firſt determined it; Mr. Hudſon having ſuppoſed his *Phleum paniculatum*, to be Linneus's *Phalaris phleoides*, which laſt he probably never ſaw [n]. It flowers in june and july.

8. Root annual, fibrous, downy. Stems ſeveral, dividing from the crown of the root or a little higher as in Wheat, ſometimes bent at the joints, clothed with leaves, the edge of which is a little rough; their ſheaths long, inflated, ſtriated and ſmooth. The culm commonly very little exceeds the uppermoſt leaf, and is terminated by an upright rigid ſpike, ſwelling in the middle, conſiſting of a great number of erect thick-ſet flowers. Calyx green, with white keel-ribs and margin; valves lanceolate, gradually tapering to a ſharp point and by no means lopped or truncated as in *Phleum*; their keel, and ſometimes their margin is ciliated with white hairs. The corolla conſiſts of two ſhort crenated ſtriated petals. The ciliated valves diſtinguiſh this graſs from the preceding [o].

Native of ſeveral parts of Europe. In England common on ſandy coaſts and the neighbouring fields; as at Yarmouth, by Mr. Woodward; in Wales, on Newborough ſands, Angleſea, by Mr. Griffith; in Scotland, near Preſton Pans, by Mr. Dickſon; more inland, on Swaffham-heath, by James Crowe, Eſq. and on Newmarket-heath, by the Rev. Mr. Hemſted [p]. It flowers from june to auguſt.

9. Root annual, fibrous. Culms a ſpan high, upright, branched and ſheathing at the baſe. Leaves narrow, naked, ſhort. Panicle the thickneſs of a gooſe quill, from one to four inches in length. Calyx obcordate, pale green, hard; glumes equal, ventricoſe above, terminated by a dagger-point, ſlightly keeled. Glumes of the corolla equal. Seed oval, oblong, not at all compreſſed [q]. Sheaths of the leaves rough. Sheath-ſcale blunt. Panicle bending to one ſide. Calyx ſeſſile, imbricate, two-valved, one-flowered, pointed, bellying upwards. Corolla two-valved, awnleſs, ſhorter than the calyx [r].

Native of ſeveral parts of Europe, as France, Italy, Sicily. In England on Gogmagog-hills, Newmarket-heath, and near Bourn-bridge, in Cambridgeſhire; on the wall of Roſe-lane, Oxford, obſerved there by Dr. John Sibthorp; in the meadows below King's Weſton, near Briſtol.

10. Root annual, fibrous. Culms ſeveral, a foot high or more, round, ſmooth, upright, commonly ſimple, marked with paler lines viſible with a glaſs, more or leſs refracted at the joints, which are from one to three, and tinged with red. Leaves two lines wide, two or three inches long, ſmooth; with long, ſmooth ſheaths: the upper leaf has an inflated ſheath, from which the upper part of the culm iſſues. Spike an inch long or more: ſpikelets ſubſeſſile, oblong, compreſſed. Glumes awnleſs, equal, with a white membranaceous edge; the nerve and edges below ciliate; the back rounded and wider; thence contracted and verging to a ſharp point: a ſingle elliptic, ſmooth, awnleſs glume inveſts the germ. Awn ſlender, double the length of the glumes, not jointed, pale yellow, iſſuing from the receptacle, reddiſh at top. Seed roundiſh. The ſpikelets are not altogether ſeſſile. It is diſtinguiſhed from all the other ſpecies by having the ſheath of the upper leaf widened and ſwelling like a ſpathe.

Native of Italy; where it is annually ſown in meadows about Pavia and Milan for cattle. It flowers there in may, and is called *Mazzuchello* [s]. Dr. Smith found it as common in the gardens and waſte ground about Rome as *Poa annua* with us, flowering in april [t]. It was introduced in 1777, by Monſ. Thouin, and flowers here from june to auguſt [u].

11. Root annual, fibrous. Culms a foot high, ſeveral, upright, decumbent before flowering-time. Stem and leaves even, not pubeſcent. Spike oblong, cylindrical, diviſible like the reſt into racemelets or corymbs. Florets in each little corymb neuter ſeveral, and one fertile at the end. Calycine glumes compreſſed: valves membranaceous-keeled, mucronate. The lower half of the ſpike has the barren florets as it were præmorſe, whence it ſeems as if gnawed off by inſects [x].

Native of the Levant and Barbary. Forſkahl ſent home ſeeds of it in 1762. It was introduced here in 1771, by Monſ. Richard, and flowers in june and july [y].

12. Culms capillary, decumbent, erect at top, jointed, ſmooth, branched, a foot high. Leaves ſheathing, (ſheaths glandular-hairy;) ſubcordate-ovate, acute, glandular-ciliate at the edge, ſmooth, ſpreading, ſcarcely an inch in length. Spikes from three to ſix: rachis flexuoſe, ſmooth: florets ſeſſile, alternate, imbricate, twice as long as the interſtices of the rachis: calycine glume lanceolate, acute, convoluted, marked with lines, ciliate-hiſpid, one-flowered. The calycine glume ſeems to be one-valved.

Native of Japan [z]. Willdenow remarks, that it is ſcarcely of this genus.]

PROPAGATION AND CULTURE.

1. Sow the ſeeds thin in drills made a foot aſunder; when the plants come up, thin them where they are too cloſe, ſo as to leave them at near two inches diſtance in the rows. Hoe the grounds three times in the intervals, to deſtroy the weeds. Three gallons of ſeed is ſufficient to ſow an acre; and if the ſeed be ſown by a hopper, the ſpring of which is properly ſet, to let it out at equal diſtances, this will be the beſt method of cultivating Canary-graſs.

The cultivation of this graſs is chiefly confined to the iſle of Thanet, where it is eſteemed a profitable crop; and may be ſo, where there is water-carriage to London, for there is the principal demand for it.

[As this ſeed is a ſlow grower, it is liable to be overrun with weeds, for which reaſon it ſhould be ſown after clover on a gentle clay; but on ſtrong ſoils

[k] Linn. mant. [l] Linn. ſuppl. [m] Engl. bot.
[n] Idem. [o] Idem. [p] Idem. [q] Retzius.
[r] Hudſon. [s] Scopoli. [t] Tour 2. 64 & 293.
[u] Hort. kew. [x] Linn. [y] Hort. kew.
[z] Thunberg.

a fallow is the beſt tilth. It is in general a valuable crop; and the chaff produces better, and a greater quantity of horſe-meat than any other. The ſeed ſhould be ſown at the end of february or beginning of march, in furrows twenty to the rod, and ſix gallons of ſeed to the acre. The land muſt be dunged with fifty or ſixty cart-loads on an acre [a].

PHALARIS. See *Briza*, *Crypſis*, *Panicum*.

——— arundinacea. See *Arundo*.

——— diſticha of Forſkahl is *Agroſtis pungens* of Schreber, 2. 40. t. 27. f. 3. and of Abbé Pourret.

——— erucæformis. See *Cynoſurus*.

——— minor. See *Phalaris aquatica*.

——— muricata. See *Cenchrus racemoſus* and *Lappago racemoſa*.

——— oryzoides. See *Leerſia*.

——— paniculata. See *Ph. aſpera*.

——— pubeſcens. See *Aira pubeſcens*.

——— ſetacea of Forſkahl, is *Panicum polyſtachyon*.

——— velutina of Forſk. is *Panicum ſanguinale*.

PHALLOBOLETUS. See *Phallus*.

PHALLUS.

Lin. gen. Schreb. n. 1677. *Wither.* 358. *Mich.* 83. Boletus. *Mich.* 85. Phalloboletus. *Mich.* 84.

GENERIC CHARACTER.

Fungus even on the under ſurface; a network of cells on the upper ſurface: ſeeds in the cells.

SPECIES.

1. Phallus eſculentus. *Eſculent Morel.*
Lin. ſpec. 1648. *Huſf. angl.* 629. *Withet. arr. ed.* 3. 358. *Lightf.* 1043. *Relh. cant. n.* 958. *Fl. dan. t.* 53. *Bulliard.* 218, B, D. *Bolton* 91. *Schæff.* 199, 298, 299, 300. *Sterb.* 10. *Mich.* 85. 1, 2. 84. 1, 2, 3. *Gleditſch.* 2. *Phallus. f.* 1, 2, 4—7. *Cluſ.* 264. 1. *Lob. ic.* 2. 274. *Dod. pempt.* 481. 1. *Ger. emac.* 1583. 1. *Park. theat.* 1317. 1. *Baub. biſt.* 3. 836. 2. *Tournef.* 329. A. *Battar.* 24. *t.* 2. *f.* F. *Raii biſt.* 102. *ſyn.* 11.
Helvella eſculenta. *Sowerby Fung. t.* 51.
Fungus poroſus rugoſus albicans quaſi fuligine infectus. *Baub. pin.* 370.
Pileus or cap ovate cellular, ſtipe or ſtem naked wrinkled.

2. Phallus impudicus. *Stinking Morel.*
Lin. ſpec. 1648. *Huſf. angl.* 629. *Withet. arr. ed.* 3. 358. *Curt. lond.* 3. 72. 199. *Bulliard* 182. *Schæff.* 196, 197, 198. *Bolton* 92. *Mich.* 83. *Gleditſch.* 2. *Phallus. f.* 3. *Fl. dan. t.* 175. *Raii cat. ed.* 2. 122. *Battar.* 2. A. B. C. D. *Sterb.* 30 *at p.* 276. *Cluſ.* 2. 295. *Dod. pempt.* 483. *Lob. ic.* 2. 275. *Ger. emac.* 1583. 2. *Park. theat.* 1322. 13. *Baub. biſt.* 3. 843. 3. & 845. 2, 3. *Raii biſt.* 103. *ſyn.* 12.
Fungus fœtidus penis imaginem referens. *Baub. pin.* 374.
Pileus or cap cellular above, even underneath, not united to the ſtem: ſtem perforating the pileus and open at the end.

3. Phallus caninus. *Red-headed Morel.*
Huſf. angl. 630. *Withet. arr. ed.* 3. 359. *Curt. lond.* 4. 72. 235. *Schæff.* 330. *Battar.* 40. F.
Pileus or cap wrinkled red, covered with a greeniſh matter, conical, cloſed at the end: ſtem yellow, tapering at the bottom.

DESCRIPTIONS, &c.

1. Stem hollow, naked, white, one or two inches high, from half an inch to an inch in diameter. Cap entirely united to the ſtem, from the ſize of a pigeon's to that of a ſwan's egg; with very large cells, angular like a honeycomb: the colour of the cap is pale yellow or buff when young, but becomes brown when old. There is a variety which is ſmall and black, found on the ſandy heaths of Norfolk [b]. Mr. Sowerby gathered plenty of the blackiſh Morels at Newington in Surrey, on an old garden ground among ſugar-baker's rubbiſh. The Morel is commonly found in woods, under hedges, and among buſhes, in a loamy ſoil, and ſprings up in april or may. It has an agreeable ſmell.—It is common in many parts of the continent: in Britain it has been obſerved at Moor-Barns, Trumpington, Triplow, &c. in Magdalen-College walks, Headington-Wick coppice, and Shotover plantations. Mr. Jacob Rayer found ſome buff-coloured ſpecimens on a bank in Kent. It has been obſerved at Stone, Swanſcomb, &c. in that county: at Boughton, Walcot, Weekly, &c. in Northamptonſhire: near Aſpley and Outhorp in Nottinghamſhire: in Scotland, at Blair in Athol, in the woods at Langholm in Eſkdale, and in Logton wood near Dalkeith, &c.

According to Mr. Sowerby, in his elaborate work on Engliſh Fungi, the Morel belongs much more properly to the genus *Helvella*, if we conſider its texture, duration and qualities. It is well known and much eſteemed as an ingredient in gravies and ragouts, both recent and dried; for this purpoſe it may be kept many months or even years.

We are informed by Gleditſch, that Morels are obſerved to grow in the woods of Germany in the greateſt plenty where charcoal has been made. Hence the people who collected them to ſell, made fires in the woods, with heath, broom, &c. to obtain a more plentiful crop. Much miſchief having been done by this practice, it was found neceſſary to forbid it by law [c].

2. Roots fibrous; fibres large, round, white, creeping a little under the ſurface, with white globules or tubercles growing to them here and there, which when full grown project above ground; and appear in the form of eggs, a little flattened at the baſe, ſmooth, the ſize of a tennis-ball, white, and heavy. On the burſting of this the ſtalk riſes up, and is about the thickneſs of the thumb, four inches and more in height, a little crooked, round, white, ſpongy, hollow, very light, and pointed at both ends. Cap ſomewhat conical, ſitting looſely on the ſtalk, at firſt ſmooth, ſolid, olive-coloured, ſlippery, ſoon becoming highly fetid, the cells being as yet filled with the matter containing the ſeed, which flowing out or being eaten by flies, the outer ſurface appears cellular, the inner a little wrinkled, the top as if cut off, very white, oblong and open [d].

Though this Fungus is ſo intolerably fetid, yet in its egg ſtate it has no offenſive ſmell: the odour reſides in the green matter which fills the cells of the cap, and is commonly very ſoon devoured by flies, particularly the large blue fleſh fly. It remains many days in the egg ſtate before it burſts through its wrapper; but this being done, the ſtem puſhes up with amazing rapidity, attaining the height of four or five inches in a few hours. This offenſive green matter contains the ſeeds, which may be ſeen by the aſſiſtance of a good microſcope. Such as have courage to ſmell this matter cloſely, will find it much leſs diſagreeable than at a diſtance; for it then ſeems to have a ſlight pungency like that of volatile ſalts. The wrapper is filled with a clear jelly, like the white of an egg, but ſtiffer; within this is found the green matter, and within that the young plant. When it ſhoots up, the wrapper and the clear jelly remain at the root [e].

The diſagreeable carrion-like ſmell of this Fungus has occaſioned it to be called *Stinkhorns* in ſome counties. It nouriſhes not only ſeveral ſpecies of flies, but alſo Snails and Slugs, who are extremely fond of the ſtem.

In auguſt, ſeptember and october the ſtinking Morel appears in woods and hedge-rows, in ſome places abundantly, in others rarely, near London it has been found (about Hackney,) in Coomb-wood, Norwood (and in the cloſes about Streatham), but more plentifully in a ſmall fir wood on Hampſtead heath [f]. Mr. Woodward found it frequent near Bungay in Suffolk, in ſandy ſituations: Dr. Sibthorp in Kingſton woods, Oxfordſhire: Morton at Thorp-Malſor in Northamptonſhire: the Rev. Charles Abbot at Silſoe and Market-ſtreet in Bedfordſhire: Ray at Middleton, in Mr. Willoughby's orchard, Nottinghamſhire: Sibbald in the woods at Blair in Athol; and in the ſands by the

[a] William Hall, Eſq. in Young's Annals. 4. 222.
[b] Withering.
[c] Lightfoot. Sowerby.
[d] Curtis.
[e] Curtis.
[f] Withering.

sea side on both sides of the Forth, and at Carubber bank, in Scotland.

3. Volva the size of a nutmeg, of an oblong ovate shape, white, smooth, gelatinous within, the inner coat cut off at top. Stalk beyond the volva, an inch and half or two inches in length, the size of a large goose quill, round, filiform, terminating in a point at bottom, cellular, somewhat transparent, of a pale orange colour, hollow within, soon becoming flaccid. Head sitting on the stem, sessile, about half an inch in length, and of the same diameter with the stem, oblong, a little pointed, impervious and whitish at top, at first of a livid colour, and covered with a very thin shining membrane, under which is a small quantity of a greenish liquid, almost without scent; which being removed, the surface of the head appears of a red colour, and transversely wrinkled, but by no means cellular, as in the stinking Morel.

Mr. Ehret, the celebrated botanic painter, in company with Mr. More, first discovered this Fungus in woods and shady places near Shrewsbury. Mr. Hunter, gardener to the Earl of Mansfield, found it sparingly in Caen wood, and communicated it to Mr. Dickson. And Mr. Sowerby, with Mr. Curtis, discovered it in Lord Mansfield's small pine wood, on the 20th of September, 1781. The Rev. Charles Abbot also found it about Silsoe in Bedfordshire. It differs from the *impudicus*, in having no *pileus* properly speaking, but the part on the outside of which the seminal matter is lodged forms a head, which is only a continuation of the stalk, differing in its structure and colour: this head has a wrinkled, not a reticulated surface, within these wrinkles, which are not very deep, the seminal matter is contained, and covered by a very thin membrane. The structure of the head in this species by no means agrees with Linneus's generic character of *Phallus*[a].

PHARNACEUM (*of Pliny. From Pharnaces, son of Mithridates, King of Pontus.*)

Lin. gen. n. 379. *Reich. n.* 410. *Schreb. n.* 517. *Juss.* 30. *Gærtn. t.* 130.

Class. 5. 3. Pentandria Trigynia.

Nat. order of *Caryophylleï*.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* subovate, concave, spreading, equal, permanent, coloured within, having a thin edge.

COR. none; hence the edge of the calyx is thin, and the inside of it is coloured.

STAM. *Filaments* five, awl-shaped, the length of the calyx. *Anthers* bifid at the base.

PIST. *Germ* ovate, three-cornered. *Styles* three, filiform, the length of the stamens. *Stigmas* blunt.

PER. *Capsule* ovate, obsoletely three-cornered, covered, three-celled, three-valved.

SEEDS numerous, shining, orbicular, depressed, surrounded by a sharp rim.

OBS. *The parts of fructification differ in* P. Mollugo.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* none. *Capf.* three-celled, many-seeded.

SPECIES.

1. Pharnaceum Cerviana. *Umbelled Pharnaceum.*
Lin. spec. 388. *Reich.* 1. 744. *Willd.* 1507. *Gmel. sib.* 3. 102. *n.* 79. *t.* 20. *f.* 2. *Gærtn. fruct.* 2. 234.
Cerviana. *Minuart. manogr.* 1.
Trichlis pentastemon, floribus umbellatis. *Hall. goett.* 26.
Alsine pumila, gallii facie, foliis glaucis. *Amm. ruth.* 84.
A. Saxifraga, &c. *Pluk. mant.* 9. *t.* 332. *f.* 11.
Spergula purpurea minima. *Buxb. cent.* 3. 33. *t.* 62. *f.* 2.
Peduncles subumbelled lateral, equalling the linear leaves.

2. Pharnaceum lineare. *Linear-leaved Pharnaceum.*
Lin. syst. 298. *ed. Willd.* 1508. *suppl.* 185. *Thunb. prodr. cap.* 53.
Umbels unequal, leaves linear in remote oppositions.

3. Pharnaceum teretifolium. *Round-leaved Pharnaceum.*
Lin. spec. ed. Willd. 1508. *Thunb. prodr. cap.* 53.
Leaves filiform mucronate, umbels lateral, stem creèt frutescent.

4. Pharnaceum microphyllum.
Lin. syst. 298. *ed. Willd.* 1508. *suppl.* 183. *Thunb. prodr. cap.* 54.
Tomentose, peduncles umbelled, leaves ovate roundish obtuse interwoven with wool.

5. Pharnaceum marginatum.
Lin. spec. ed. Willd. 1508. *Thunb. prodr. cap.* 54.
Leaves ovate margined blunt, flowers axillary sessile.

6. Pharnaceum Mollugo.
Lin. spec. 389. *syst.* 297. *Reich.* 1. 744. *Willd.* 1508. *mant.* 56. 358. 561. *Laur. pechinch.* 185. *Berg. cap.* 79.
Mollugo Spergula. *Lin. spec. ed.* 1. 131. *hort. cliff.* 28. *Burm. ind.* 31. *t.* 5. *f.* 4. *Knipb. orig. cent.* 9. *n.* 68.
Alsine erecta pentaphylla, flore albo. *Burm. zeyl.* 13. *t.* 7.
A. procumbens, gallii facie, africana. *Herm. lugdb.* 19. *t.* 21.
Peduncles one-flowered lateral, flowers the length of the leaves, stem depressed.

7. Pharnaceum glomeratum.
Lin. syst. 298. *ed. Willd.* 1509. *suppl.* 185. *Thunb. prodr. cap.* 53. *Pluk. mant. t.* 331. *f.* 4. (Rubia).
Flowers glomerate, stem flexuose, leaves linear.

8. Pharnaceum serpyllifolium.
Lin. syst. 297. *ed. Willd.* 1509. *suppl.* 186. *Thunb. prodr. cap.* 54.
Peduncles one-flowered, axillary, leaves ovate blunt.

9. Pharnaceum quadrangulare.
Lin. syst. 298. *ed. Willd.* 1510. *suppl.* 185. *Thunb. prodr. cap.* 54.
Subfruticose, leaves linear imbricate in four rows.

10. Pharnaceum incanum. *Hoary Pharnaceum.*
Lin. spec. 389. *syst.* 297. *Reich.* 1. 745. *suppl.* 186. *mant.* 562. *hort. cliff.* 492. *Thunb. prodr. cap.* 54.
Common peduncles very long, leaves linear, stipules hairy.

11. Pharnaceum albens.
Lin. syst. 298. *Willd.* 1510. *suppl.* 186. *Thunb. prodr. cap.* 53. *Pluk. phyt. t.* 304. *f.* 4.
Common peduncles very long; leaves linear without stipules.

12. Pharnaceum dichotomum. *Forked Pharnaceum.*
Lin. syst. 298. *Willd.* 1511. *suppl.* 186. *Thunb. prodr. cap.* 53.
Peduncles axillary elongated dichotomous, leaves in whorls linear.

13. Pharnaceum distichum.
Lin. syst. 297. *Reich.* 1. 746. *Willd.* 1511. *mant.* 221. *Pluk. mant. t.* 332. *f.* 4. & *phyt. t.* 130. *f.* 6. (Alsine).
Racemes two-parted flexuose, leaves sublinear pubescent.

14. Pharnaceum cordifolium.
Lin. spec. 389. *syst.* 298. *Reich.* 1. 746. *amoen.* 6. *asr.* 6. *Thunb. prodr. cap.* 54. *Pet. mus.* 478. (Spergula).
Racemes two-parted terminating, leaves obcordate.

DESCRIPTIONS, &c.

1. This is an annual plant, differing from *Mollugo* in little else than the number of stamens. Capsule ovate, thin, obsoletely three-grooved, slightly pustuled by the projecting seeds: partitions in the middle of the valves. Seeds eight or ten in each cell, small, roundish, beaked, marked on the back with a single filiform streak, very smooth and shining, of a rufous-ferruginous colour; fastened by very short umbilical cords to the central angle of the cells[b].

Native of Russia and Spain. Introduced in 1771, by Mons. Richard. It flowers in June[c].

2. Plant larger than *Spergula arvensis*. Stem even, prostrate, jointed with knobbed knots, dichotomously-branched. Leaves several, blunt, even, in whorls. Umbels peduncled, terminating and lateral, solitary, irregular[a].

[a] Curtis.

[b] Gærtner. [c] Hort. kew. [a] Linn. suppl.

3. 4. 5. Theſe and the preceding are natives of the Cape of Good Hope.

6. Root annual. Stems herbaceous, procumbent, dichotomous, jointed, round, even. Leaves in whorls, four or five, unequal in ſize, ſubpetioled, ſomewhat fleſhy, elliptic-lanceolate, even, ſharpiſh, rugged at the edge, ſcarcely veinleſs. Peduncles at the whorls (not at the forkings of the ſtem,) four or five, the length of the leaf, one-flowered. Calycine leaflets oblong-ovate, ſnow-white above, greeniſh more or leſs underneath, permanent. Petals very minute, linear, very narrow, ſemibifid, with briſtle-ſhaped ſegments. Nectary or briſtle awl-ſhaped, white, ſpreading, alternate with the filaments, and ſhorter than them. Stamens white, generally ſhorter than the petals. Germ ovate. Styles recurved, white. Anthers geminate, linear.

The plant in its whole appearance very much reſembles *Illecebrum ſcoideum*. The fructification is much like that of *Mollugo verticillata*, but it is a little larger. The petals reſemble greatly thoſe of *Glinus lotoides*. Burman's figure belongs to this ſpecies rather than to *Mollugo ſtricta*.

Mollugo verticillata differs from this in having the leaves fleſhy and bluntiſh, not mucronate; the flowers the length of the leaves, and not ſhorter by half; the calyxes the ſize of *Aſine media*, and not of *Herniaria*; the ſtem green, not the colour of ivory. It is a native of the Eaſt Indies [1]: and of Cochinchina, according to Loureiro.

7. Root annual. Stems herbaceous, even, flexuoſe. Leaves very many, in whorls, acute, ſmooth, even. Flowers very minute, few in a whorl, peduncled, beſides the little leafy glomerate umbel. It has the appearance of a *Mollugo*.

8. This is a tender annual plant, with the leaves and ſtem ſmaller than in *Herniaria glabra*. Stems branched, dichotomous, filiform, jointed, ſmooth. Leaves oppoſite or ſeveral, petioled, many times ſhorter than the internodes. Peduncles lateral, capillary, the length of the leaves.

9. The ſtems of this are ſomewhat ſhrubby, and have the appearance of a Heath. Leaves acerоſe, awl-ſhaped, minute, even. Panicles terminating, conglomerate, ſmall. Flowers white, on the outſide green [m].

10. This is alſo a ſhrubby plant, with an upright proliferous ſtem. Branches whitiſh with tunicated ſtipules. Leaves ſcattered, even, ſolitary, ſpreading. Stipules leafy, ſolitary, membranaceous, white, finely jagged. Peduncles terminating. Umbel compound, proliferous. Flowers white, green on the outſide [n]. Introduced in 1782, by George Wynch, Eſq. [o]

11. This is a little ſhrub with white ſtems. Leaves oppoſite, ſpreading, with the oppoſitions remote.

12. This and the five ſpecies preceding are natives of the Cape of Good Hope.—The tenth is alſo a native of Cochinchina, according to Loureiro.—The twelfth ſpecies is an annual plant, and was introduced in 1783, by John Earl of Bute. It flowers in july [p].

13. Leaves narrow, ſubtomentoſe. Racèmes geminate, flexuoſe. Piſtil one. Capſule one-celled, three-valved.—Native of the Eaſt Indies [q].

14. Root fibrous. Stems herbaceous, a foot high, proſtrate, even, knobbed at the joints. Branches alternate. Leaves numerous, in whorls, ſmooth, quite entire, much ſhorter than the internodes. Racemes peduncled. Flowers white, the ſize of thoſe of *Spergula arvenſis*.—Native of the Cape of Good Hope [r].

PHARUS. (Φαρος, *pallium*.)

Lin. gen. n. 1063. *Reich. n.* 1160. *Schreb. n.* 1434. *Juſſ.* 33. *Brown. t.* 38. *f.* 3.

Claſſ. 21. 6. Monoecia Hexandria.

Nat. order of *Gramina*, *Graminеæ* or *Graſſes*.

GENERIC CHARACTER.

* *Male* flowers peduncled.

Cal. *Glume* two-valved, one-flowered: *valves* ovate, membranaceous, coloured; *outer* ſhort, ſharpiſh; *inner* twice as long, rounded at the tip.

Cor. *Glume* two-valved, longer: *valves* equal, oblong, membranaceous, coloured; *outer* ſharpiſh, keeled below the tip; *inner* emarginate.

Stam. *Filaments* ſix, very ſhort, upright. *Anthers* linear, cloven at both ends, the length of the corolla.

* *Females* larger, ſeſſile in the ſame panicle.

Cal. *Glume* two-valved, one-flowered: *valves* lanceolate, membranaceous, ſharpiſh, nerved, almoſt equal.

Cor. *Glume* two-valved, a little longer: *outer valve* ſubcylindric, rigid, cloſely pubeſcent: end three-ſided, ſharp; back keeled, bent back, and ſhaved at the baſe: *inner valve* linear, very narrow, membranaceous, with the margins folded together, the edge thickened on both ſides, pubeſcent, with the tip cloven; the ſame length with the outer.

Pist. *Germ* linear. *Style* ſimple. *Stigmas* three, capillary, pubeſcent, prominent from the outer corolline glume.

Per. none. The outer glume of the corolla inveſts the ſeed, now larger, muricated all round with ſoft adhering little hooks.

Seed oblong, grooved on one ſide, large.

Obs. *Schreber could not obſerve any nectary.*

ESSENTIAL CHARACTER.

Cal. Glume two-valved, one-flowered.

Male. *Cor.* glume two-valved.

Fem. *Cor.* glume one-valved, long, involving. *Seed* one.

SPECIES.

1. Pharus latifolius.
   Lin. ſpec. 1408. *Reich.* 4. 151. *amoen.* 5. 409. *Brown. jam.* 344. *t.* 38. *f.* 3. *Sloan. jam.* 1. 116. *t.* 73. *f.* 2. (Gramen avenaceum).
   Panicle branched, calyxes apetalous naked awnleſs.
2. Pharus ciliatus.
   Retz. obſ. 5. 23. *n.* 56.
   Panicle ſomewhat branched, calyxes apetalous ciliate awnleſs.
3. Pharus ariſtatus.
   Retz. obſ. 5. 23. *n.* 57.
   Panicle umbelled, calyxes apetalous awned naked.

DESCRIPTIONS, *&c.*

1. This Graſs has many filaments three or four inches long, with lateral fibrils, uniting in a roundiſh root. Root-leaves ſeveral incompaſſing the ſtalk and one another by their foot-ſtalks, which are ſtriated of a light brown colour, and about nine inches long. Leaves oblong-ovate, ſix inches long and two broad, acuminate, ſtriated, thin, hard and rough, with the midrib prominent at the back. Stalk about a foot and half high, having below two very ſhort joints, dividing at a foot from the ground into ſeveral branches, on which are naked flowers, half an inch in length, ſeſſile, alternate. Outer glume blackiſh, and within that a long rolled-up membrane [s]. The male flowers are ſmaller than the females, and ſtand on pretty long peduncles at the back of the others.

This Graſs is frequent in all the woody hills of Jamaica, and reckoned a hearty wholeſome food for all ſorts of cattle. They call it there Wild Oats [t].

2. Culms very leafy, two feet high. Leaves linear, narrow, rugged. Panicle ſhort, or rather a ſimple raceme. Calycine valves ovate, convolute, having two grooves on the back, awnleſs, ciliate at the edge. Corolla none.

3. Culm above the water ſcarcely two feet high, at the joints under water many pectinate fibres, upright, leafy. Leaves lanceolate, ſhort, widiſh, naked, rough above, without any ligule. Sheaths on the barren branches ſwelling. Peduncles racemed, unequal. Pedicels thickened. Male flowers ſeveral lanceolate: ſtamens ſix, with very ſhort filaments, and long linear yellow anthers, ſlightly bifid at top. Female flowers fewer, below: germ minute, ſtyles two, ſtigmas white. Calyx in both two-glumed; outer glume five-nerved, awned, ciliate on the back and at the edges; inner narrower, longer except the awn, one-nerved, hyaline, acuminate, not awned. Corolla none in either.

Theſe Graſſes are natives of the Eaſt Indies, and nearly allied to *Phalaris aryzoides* [u].

[1] Linn. mant. [2] Hort. kew. [3] Linn. ſuppl. [4] Idem. [5] Linn. amoen. [6] Linn. mant. [7] Linn. mant. [8] Sloane. [9] Browne. [10] Retzius.

PHASCUM.

Lin. gen. Schreb. n. 1636. *Schreb. monogr. Hedw. fund.* 2. 85. *Schmidel. ic. t.* 58. *f.* 1.

Claſſ. 24. 3. Cryptogamia Muſci.

GENERIC CHARACTER.

Caps. ovate, veiled, ſubſeſſile or on a ſhort briſtle, cloſed on every ſide, ſometimes with the rudiment of a lid, never opening.

Males ſubdiſcoid terminating, or gemmaceous axillary.

SPECIES.

Five ſpecies of this Moſs are enumerated in the 14th edition of Syſtema Vegetabilium. Withering has eleven ſpecies in his Arrangement of Britiſh plants.

Phaseolis accedens. See *Piſcidia*.

Phaseoloides. See *Glycine*.]

PHASEOLUS. (Φασηολος of *Theophraſtus and Dioſcorides*; Φασουλος of other Greek writers. It is alſo written Faſcolus; *and in ancient manuſcripts of Pliny* Faſſiolus. Φασηλος. Phaſelus *or* Faſelus *is alſo the name for a ſmall ſwift ſailing boat; ſo called from its ſimilitude to the pod of a kidney-bean; or derived, according to ſome, from the Hebrew* Phaſel, *dolavit, ſculpſit; as* σκαφη, ſcapha, *is from* σκαπτω, *fodio.* Voſſius.)

Lin. gen. n. 866. *Reich. n.* 940. *Schreb. n.* 1180. *Tourn. t.* 232. *Juſſ.* 356. *Gærtn. t.* 150.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, two-lipped: *upper lip* emarginate; *lower* three-toothed.

Cor. papilionaceous: *banner* heart-ſhaped, blunt, emarginate, reclined; the ſide bent back: *wings* ovate, the length of the banner, placed on long claws: *keel* narrow, rolled ſpirally contrary to the ſun.

Stam. *Filaments* diadelphous, (ſimple and nine-cleft,) within the keel, ſpiral. *Anthers* ten, ſimple.

Pist. *Germ* oblong, compreſſed, villoſe. *Style* filiform, bent in ſpirally, pubeſcent above. *Stigma* blunt, thickiſh, villoſe.

Per. *Legume* long, ſtraight, coriaceous, blunt with a point.

Seeds kidney-form, oblong, compreſſed.

Obs. *Many ſpecies have an outer two-leaved roundiſh calyx.*

ESSENTIAL CHARACTER.

Keel with the ſtamens and ſtyles ſpirally twiſted.

SPECIES.

* *Climbing.*

1. Phaſeolus vulgaris. *Common Kidney-bean.*
Lin. ſpec. 1016. *Juſſ.* 656. *Reich.* 3. 441. *mat. med.* 171. *hort. cliff.* 359. *upſ.* 213. *Gærtn. fruct.* 2. 323. *Retz. obſ.* 3. 38. *n.* 78. *Lour. cochinch.* 434. *Leb. ic.* 2. 59. *Riv. tetr. t.* 30. *t.* 29. *f.* 1, 2, 3.
Phaſeoli ſativi. *Park. parad. t.* 523. *f.* 2.
P. albus. *Ger.* 1038. 1. *emac.* 1212. 1.
P. fructu diverſo vel parvo & nigro albis venis. *Park. theat.* 1056. *f.* 2.
Smilax hortenſis. *Baub. hiſt.* 2. *Raii hiſt.* 884.
—*f.* Phaſeolus major. *Baub. pin.* 339.
β. P. coccineus. *Mill. dict. n.* 6. *Knipb. cent.* 12. *n.* 75. *Scarlet Kidney-bean.*
P. puniceo flore. *Corn. canad.* 184. *t.* 185.
P. flore coccineo. *Park. theat.* 1056. 1. *Ger. emac.* 1215.
P. indicus, ſ. cocc. ſ. puniceo. *Mor. hiſt.* 2. 69.
Stem twining, flowers raiſed in pairs, braſtes ſmaller than the calyx, legumes pendulous.

[2. Phaſeolus lunatus. *Scymitar-podded Kidney-bean.*
Lin. ſpec. 1016. *Juſſ.* 656. *Reich* 3. 442. *Lour. cochinch.* 434.
P. rufus. *Jacqu. hort.* 1. 13. *t.* 34. *conſ. vol.* 3. *p.* 1.
Stem twining, legumes ſcymitar-ſhaped ſomewhat creſcent ſhaped even.

3. Phaſeolus bipunctatus.
Lin. ſyſt. 646. *Jacqu. hort.* 1. *t.* 100.
Stem twining, legumes ſcymitar-ſhaped pubeſcent, ſeeds with two dots at the hilum or ſcar.

4. Phaſeolus inamoenus.
Lin. ſpec. 1016. *Juſſ.* 656. *Reich.* 3. 442. *hort. cliff.* 359. *Jacqu. hort.* 1. *t.* 66.
Stem twining, banner revolute of the ſame colour with the calyces.]

5. Phaſeolus farinoſus.
Lin. ſpec. 1016. *Reich.* 3. 442. *hort. upſ.* 214.
P. peregrinus, flore roſeo, ſemine tomentoſo. *Niſſ. act.* 1730. *p.* 577. *t.* 42.
P. indicus, hederæ folio anguloſo, ſemine oblongo lanuginoſo. *Raii ſuppl.* 438. *n.* 26.
Stem twining, peduncles ſubcapitate, ſeeds four-cornered-cylindrical mealy.

[6. Phaſeolus trilobus. *Three-lobed Kidney-bean.*
Ait. hort. kew. 3. 30.
Dolichos trilobus. *Lin. ſpec.* 1021. *Reich.* 3. 449. *hort. cliff.* 360. *Burm. ind.* 160. *t.* 50. *f.* 1.
P. maderaſpatanus, fol. glabris trilobis, &c. *Pluk. phyt. t.* 214. *f.* 3.
Stem half twining decumbent ſmoothiſh, leaflets three-lobed, lobes ovate, ſtipules ovate, legumes cylindrical.]

7. Phaſeolus vexillatus. *Sweet-ſcented Kidney-bean.*
Lin. ſpec. 1017. *Juſſ.* 656. *Reich.* 3. 442. *Jacqu. hort.* 2. *t.* 102.
P. flore odorato, vexillo amplo patula. *Dill. elth.* 313. *t.* 234. *f.* 202.
Stem twining, peduncles thicker than the petiole forming a head, wings ſomewhat ſickle-ſhaped diſform, legumes linear ſtriated.

[8. Phaſeolus helvolus.
Lin. ſpec. 1017. *Juſſ.* 656. *Reich.* 3. 443.
P. flore helvulo, alis amplis patulis. *Dill. elth.* 312. *t.* 233. *f.* 300.
Stem twining, flowers in heads, calyxes bracted, wings expanded very large, leaflets deltoid oblong.

9. Phaſeolus ſemierectus. *Dark-red-flowered Kidney bean.*
Lin. ſyſt. 656. *Reich.* 3. 443. *mant.* 100. *amoen.* 4. 347. *Jacqu. ic. vol.* 2. *collect.* 1. 134. *Plum. ſpec.* 8. *Dill. elth.* 312. *t.* 233. *f.* 301. *Pluk. phyt. t.* 214. *f.* 2.
Stem half twining, flowers in ſpikes, calyxes without bractes, wings expanded larger, leaflets ovate.]

10. Phaſeolus alatus.
Lin. ſpec. 1017. *Reich.* 3. 444. *Dill. elth.* 314. *t.* 235. *f.* 303.
Stem twining, flowers in looſe ſpikes, wings the length of the banner.

11. Phaſeolus Caracalla. *Twiſted-flowered Kidney-bean,* or *Snail-flower.*
Lin. ſpec. 1017. *Juſſ.* 656. *Reich.* 3. 444. *Trew. rar.* 14. *t.* 10.
P. indicus cochleato flore. *Trumf. obſ.* 93. *t.* 94. *Raii hiſt.* 1890.
Stem twining, banner and keel ſpirally convoluted.

[12. Phaſeolus acontifolius.
Lin. ſyſt. 656. *ſuppl.* 325. *Jacqu. obſ.* 3. 2. *t.* 52.
P. palmatus. *Forſk. deſcr.* 214. *n.* 68.
Stem twining, leaves ſubquinquepartite.

13. Phaſeolus hirtus.
Retz. obſ. 3. 38. *n.* 76.
Stem half twining, legumes round, keel horned to the left.

14. Phaſeolus tuberoſus.
Lour. cochinch. 434.
Stem ſcandent, banner revolute, root tuberous faſcicled.

15. Phaſeolus tunkinenſis.
Lour. cochinch. 435.
Stem twining very much branched, leaflets conical ſmall thick, banner revolute of the ſame colour with the calyx.

** *Upright.*

16. Phaſeolus nanus. *Dwarf Kidney-bean.*
Lin. ſpec. 1017. *Reich.* 3. 444. *hort. upſ.* 213. *amoen.* 4. 284. *Baub. hiſt.* 2. 358. *Raii hiſt.* 885. *n.* 4.
Smilax ſiliqua ſurſum rigente, ſ. Ph. parvus italicus. *Baub. pin.* 339.
Stem upright even, braſtes larger than the calyx, legumes pendulous compreſſed wrinkled.

17. Phaſeolus radiatus.
Lin. ſpec. 1018. *Juſſ.* 656. *Reich.* 3. 444. *act. ſtockh.* 1744. *p.* 202. *t.* 7. *f.* 2. *hort. upſ.* 213. *fl. zeyl. n.* 281. *Thunb. jap.* 278. *Lour. cochinch.* 435. *Dill. elth.* 315. *t.* 235. *f.* 304. *Rumph. amb.* 6. 386. *t.* 139. *f.* 2.

Stem upright round, flowers in heads, legumes cylindric horizontal.

18. Phaſeolus Max. *Hairy-podded Kidney-bean.*
Lin. ſpec. 1018. *ſyſt.* 657. *Reich.* 3. 444. *hort. cliff.* 499. *fl. zeyl. n.* 280. *Gron. orient.* 217. *Herm. mex.* 887.
Fructus niger coriandro ſimilis. *Bauh. pin.* 413.
Cadelium. *Rumph. amb.* 5. 388. *t.* 140.
Stem upright ſtraight angular hiſpid, legumes pendulous, rough-haired.

19. Phaſeolus Mungo.
Lin. ſyſt. 657. *Reich.* 3. 445. *mant.* 101. *Lour. cochinch.* 435. *Pluk. alm.* 290.
Mungo. *Garc. arom. l.* 2. *c.* 21.
Stem flexuoſe round hirſute, legumes in heads rough-haired.

20. Phaſeolus lathyroides.
Lin. ſpec. 1018. *Reich.* 3. 445. *Swartz obſ.* 280. *Brown. jam.* 291. 3. *Sloan. jam.* 1. 183. *t.* 116. *f.* 1.
Stem upright, leaflets lanceolate.

21. Phaſeolus ſphærоſpermus.
Lin. ſpec. 1018. *Reich.* 3. 445. *Brown. jam.* 292. 8. *Sloan. jam.* 1. 184. *t.* 117. *f.* 1, 2, 3. *Pluk. alm.* 290.
Stem upright, ſeeds globular dyed at the hilum.

DESCRIPTIONS, *&c.*

1. This is an annual plant, as are moſt of the other ſpecies. Stem more or leſs twining, but in ſome of the cultivated dwarf varieties ſcarce at all ſo, quite ſimple or unbranched. Leaves ternate, acuminate, rounded at the baſe, rough, on long petioles. Flowers axillary, in twin racemes, or elſe on twin petioles. Corolla white, yellow, purple or red. The banner has a callus, but a ſmall one, and placed near the edge above the claw. There is a white nectariferous ſcale between the claw of the banner and the ſingle ſtamen, bent upwards, and growing to the filament: beſides this an obliquely bell-ſhaped, pellucid, ſtriated nectary ſurrounds the pedicel of the germ within the connate filament: the ſize of this differs in the ſeveral varieties. The ſize of the bractes is an uncertain character[a]. Legume oblong, ſwelling a little at the ſeeds, when ripe one-celled. Seeds ſeveral, ovate or oblong kidney ſhaped, ſmooth and ſhining: they vary exceedingly in ſhape and ſize, but particularly in colour, being white, black, blue, red and variouſly ſpotted[b].

The common Kidney-bean is a native of both Indies. It was commonly cultivated here in the time of Gerarde (1597); but he does not ſpeak of any dwarf varieties, only of ſuch as "grow to a very great length, being "ſown near to long poles faſtened hard by them, or "hard by arbors or banqueting places; otherwiſe "they lie flat on the ground."—Parkinſon, in 1629, ſays that the variety with white flowers and ſeeds was then moſt uſual in the gardens; and that "Kidney-"beans boiled in water and ſtewed with butter, were "eſteemed more ſavory meat to many men's palates, "than the common Garden Bean, and were a diſh "more oftentimes at rich men's tables than at the "poor."

Kidney-beans are or were alſo called *Sparage-beans*; of ſome *Faſelles* or *long Peaſon*, *French Beans*, *Garden Smilax*, and *Roman Beans*[c].

The varieties of the Kidney-bean are very numerous. Mr. Miller mentions only] the ſmall White Dwarf, the Black Dwarf or Negro, and the Liver-coloured Bean, for early crops. The Batterſea and Canterbury. The large Dutch, which grows very tall.

β. He regards the Scarlet-bean as a diſtinct ſpecies. Its twining ſtalks, if properly ſupported, will riſe to the height of twelve or fourteen feet, the leaves are ſmaller than thoſe of the common Garden-bean. The flowers grow in large ſpikes, are much bigger, and of a deep ſcarlet colour. The pods are large and rough; and the ſeeds are purple marked with black; ſometimes pure white.

[Johnſon informs us (1633), "that it was pro-"cured by Mr. Tradeſcant, and grew in his time in "our gardens; that it is a large plant, not differing "in manner of growth from the former Indian Kidney "Beans, but that his flowers are large, many and of "an elegant ſcarlet colour; whence it is vulgarly "termed by our floriſts, the Scarlet Bean[d]."

In Ray's time (1686) it was cultivated rather for the beauty and durability of the flowers than for the fruit; and ladies did not then diſdain to put the flowers in their noſegays and garlands[e]. Mr. Miller ſeems to have been the firſt who brought it into much repute as an eſculent Kidney-bean; and I well remember his ſpeaking much in praiſe of it more than fifty years ſince, and that he preferred it at his own table.] The beſt ſorts for the table, ſays he, are the Scarlet-bloſſom Bean, and a white Bean of the ſame ſize and ſhape, which is only a variety of it.

2. The lateral leaflets are twice as wide on the outer ſide as on the other. Flowers very ſmall, green, with the wings white and concave, afterwards turning yellow, and the keel ſpiral[f].

The ſtem twines to the height of ten feet or more, and is branched. The three leaflets are even, ſharp, and unequal. Peduncles many-flowered. Flowers yellow, with a ſpreading green banner, of the ſame colour with the calyx. Legume compreſſed, wide, curved a little, acuminate, ſmooth. Seeds orbiculate-reniform, ſhining, black ſtreaked with white, large[g].

Native of the Eaſt Indies. It is eaten in Cochinchina, but is more eſteemed for the beauty than flavour of the ſeeds.

Introduced in 1779, by Mr. William Roxburgh. It flowers here in june and july[h].

3. This very much reſembles the P. rufus, agreeing with it in the flower, except that the banner is leſs green. Stems, leaves, and racemes a little hairy. Legume very ſlightly villoſe, and agreeing in ſhape and ſize with that of P. inamoenus, but more turgid, on account of the greater thickneſs of the ſeeds, which are few, white, ſubreniform, and marked on each ſide above the hile with a ferruginous ſpeck. Leaflets ovate-acuminate; the interior lobe of the lateral ones twice as narrow as the others. Stipules, which are the ſame at ſtem and leaflets, ſmall and ſubovate.

The ſeeds of this were brought from the Cape of Good Hope, and produced the plants in the ſtove of the Vienna garden.

4. Whole plant ſmooth: root annual: ſtem twining, ſubangular, and ten feet high: the intermediate leaflet oblong-lanceolate, attenuated into a point; in the lower part of the ſtem it is half a foot long or more: the lateral ones are in general ſhorter, and twice or thrice as wide at their internal baſe as at their external. The axillary racemes bear ſeveral ternate peduncles ſpringing from the ſame place. Flowers inelegant, with a concave greeniſh banner, and long, obtuſe concave wings, ſtretched out and whitiſh, as is the ſpirally-intorted keel. Legume oblong, compreſſed, acuminate, and bowed at the back. Seeds few, kidney-ſhaped, flat-compreſſed, blood-red on the circumference, white on the middle and lower part, and ſpotted with red points; and with a white hile. This blood-colour in the freſh ſeeds is ſcarlet.—Native, according to Linneus, of Africa[i].

5. Flowers roſe-coloured; ſeeds downy, appearing as if covered with meal; leaves angular, like thoſe of Ivy.—Native of the Eaſt Indies. Sherard had it from the Padua garden.

6. For the deſcription ſee *Dolichos trilobus*, *n.* 20.—It was introduced in 1777, by Sir Joſeph Banks; and flowers here in july[k].

7. Stipules looſe at the baſe and bifid. Peduncles ſmooth, the other parts hairy. Flowers few, ſeſſile, ſweet-ſmelling. Bractes two, very ſmall. Banner emarginate, wide, reflex, marked with lines on the inner ſurface: wings ſomewhat ſickle-ſhaped, having a lobe at the baſe on the right ſide diſtinct from the baſe itſelf; there being no lobe on the left ſide, the flower is oblique: keel ſickle-ſhaped, little oblique,

[a] Retzius [b] Gærtner. [c] Gerarde. [d] Ger. emac. [e] Raii hiſt. 884. [f] Linn. ſpec. [g] Loureiro. [h] Hort. kew. [i] Jacquin. [k] Hort. kew.

beaked, bifid at the tip. The plant is intermediate between this genus and Dolichos [k].

Stems five or six feet in height, the thickneſs of a ſtraw. Peduncles very long, bearing three or four flowers on ſhort pedicels, large, green before they open, afterwards whitiſh purple; as they fade the purple changes to pale violet, and finally to a duſky lurid colour, or yellowiſh brown; they do not laſt more than twenty-four hours: the banner is white or tinged with very pale purple, and has yellowiſh ſpots at the baſe, and ſlender ſtreaks towards the circumference; keel ſmall, curved in towards the banner, white or ſlightly tinged with purple; wings either rolled over each other, or bent in about the keel, of a darker purple colour. Legumes long, ſlender, browniſh. Seeds ſmall, blackiſh brown [l].

Native of the Weſt Indies. Cultivated in 1732, by James Sherard, M. D. at Eltham [m]: from ſeeds collected at the Havana, and ſent under the name of *Tryallos* [n].

8. Stems a yard and half and more in height, ſlender, round, not exceeding a ſtraw in ſize at bottom, of a brown or blackiſh purple colour, making few revolutions in twining. Petioles an inch long. Leaflets narrow, oblong, widening and as it were haſtate at the baſe, ſmooth, the veins ſcarcely viſible. Peduncles from the upper axils, very long, having two, narrow leaflets at the baſe, and at the top two or three flowers, without ſcent, the colour of pale red wine: banner ſhortiſh, not ſpreading, but bent towards the inner part; keel ſhort and narrow, twiſted into the banner; wings larger and ſpreading, marked with ſlender ſtreaks. Legumes ſlender, round, not hirſute, blackiſh brown when ripe. Seeds ſmall, turgid, of a blackiſh bay colour.

Native of Carolina, whence the ſeeds were ſent by a merchant of London, of the name of Tryan, with other rare plants. It flowered in auguſt, and the ſeeds ripened in ſeptember [o].

9. Stem upright, three feet high, twining only at top, round, ſomewhat ſtreaked and pubeſcent. Leaflets naked, blunt iſh, ſomewhat mucronate, the length of the petiole. Stipules ſomewhat enſiform. Peduncles a foot in length, ſtiff, upright. Spike thinner, in pairs, ſeſſile. Calyx cylindrical. Banner and keel paler; wings three times the ſize of the banner, convex, red, blueiſh at the baſe, converging; keel twiſted [p].

According to Jacquin the perianth is cylindric, greeniſh, narrow, ſmall, ſmooth and bilabiate. Banner greeniſh with a tinge of purple, and twice the length of the calyx. Wings blood-coloured, twice the length of the banner, roundiſh, concave, diſtant. Keel purple in the middle, white on each ſide, and on account of its convolution, ſhorter than the banner. Anthers yellow, oblong, and incumbent. Seeds ſeveral, oblong-reniform, ſmooth, brown, ſpotted with black. Legume linear, ſtraight, ſharp-pointed, and three or four inches long, brown, and rather roughiſh with decumbent hairs. Roots perfectly reſembling thoſe of other annual Phaſeoli, and not in the leaſt ſtrumoſe; for which reaſon Jacquin omits the ſynonyms of Dillenius and Plumier, quoted by Linneus in the Mantiſſa Plantarum, where the root is ſaid to be ſtrumoſe [q].

Native of the Weſt Indies. Introduced in 1781 by Mr. Francis Maſſon. It flowers in july [r].

10. Stems long, ſlender, green, round, ſtriated, ſubhirſute; joints from two to three inches diſtant. Leaves like thoſe of the common Kidney-bean, but ſmaller, finely hairy at their edges. Petioles an inch or an inch and half in length, thinly hairy. Peduncles from a hand to a ſpan in length, round, ſmooth, ſtriated, ſomewhat thicker than the ſtems. Flowers large, ſolitary or in pairs, without ſcent, at firſt purple, then violet: banner large, reflex, paler purple: wings broadiſh, ſtretched out, deeper purple; keel narrow, oblong, bent in towards the banner. Calycine ſegments four, the upper one larger than the reſt. Pedicel ſlender, very ſhort, purple. Legumes oblong, compreſſed, at firſt green, but brown and ſwelling more when ripe. Seeds twelve or more, ſmall, depreſſed, ſhining, of a browniſh red colour, with a white eye [s].

Dillenius does not mention its native place of growth, but Mr. Miller ſays that] the ſeeds were brought from Carolina.

11. This is a perennial plant with twining ſtalks riſing to the height of twelve or fourteen feet; the leaves are ſhaped like thoſe of the common Kidney-bean, but are ſmaller. The flowers are produced in ſlender ſpikes, they are of a purpliſh colour, and have an agreeable odour; they are ſucceeded by ſlender compreſſed pods, containing ſeveral oval compreſſed ſeeds.

Mr. Miller ſays it is a native of the Brazils. [According to Triumfetti, it was brought from Portugal to Italy, and it was not known from what country of India it came; it is more probable however that the Portugueſe had it from Braſil than from the Eaſt Indies.—It was cultivated in 1690, in the Royal garden at Hampton Court; and flowers in auguſt and ſeptember [t].

12. Stem herbaceous, ſtriated. Leaves alternate, ſmooth, ternate. Petioles and nerves at the back hairy. Leaflets petioled, deeply divided into three narrow-oblong ſharpiſh lobes, the lateral ones having commonly a ſhorter lobe on the outer ſide. Peduncles axillary, ſolitary, hairy, five-flowered. Flowers ſmall, with a wide banner, diſpoſed in a ſort of raceme. Deſcribed from a dried ſpecimen of Petiver's, communicated by Gronovius [u].

Native of the Eaſt Indies. Found in Tranquebar by Koenig. Alſo in Arabia by Forſkahl.

13. Root annual. Stem angular, hiſpid, from one to three feet high, flexuoſe, wrak, neither upright nor twining. Petioles long, hiſpid, compreſſed, channelled above, knobbed at the baſe. Stipules oblong, half-cordate, adnate, ciliate. Leaflets repand, acute, hiſpid on both ſides; the lateral ones obliquely ovate, the end one ovate-lanceolate; under the former one pair, and under the latter another pair of awl-ſhaped, ciliate ſtipules: partial petioles thicker than the common, darker, not channelled. Peduncles axillary, from two to three inches long, hiſpid, in a ſort of head, but it rarely happens that more than two of the flowers are fertile; each is knotted at the origin of the pedicels: theſe have ſtipules at the baſe reſembling the leaflets. Under the flower there is a ſmall, caducous, ciliate bracte; and two others, which are narrow, keeled, acuminate, ciliate, preſſed cloſe to the ſides of the calyx, and of the ſame length with it. Flowers dirty yellow, the upper part eſpecially of the banner being browniſh. Calyx ſmooth. Banner broad-cordate, having on the right ſide within a yellow callus or bump impreſſed from without, and when folded together ſickle-ſhaped. Wings yellow. Keel dirty yellow, leſs twiſted than in the other ſpecies. Legumes ſpreading, cylindrical, hiſpid, ſcarcely toruloſe. Seeds ſubcylindrical, ſhort green.—It grew from ſeeds ſent from Conſtantinople by Celſing [x].

14. Stem ſhrubby, long, branched. Stipules two-horned, acute, ſpreading. Leaves ternate, large. Flowers wholly yellow in ſubterminating racemes. Calyx four-cleft; ſegments equal in length; the upper one blunt and emarginate. Legumes ſomewhat compreſſed, long, not eſculent. The root is large and eſculent.—Native of Cochinchina.

15. Stem annual, ſhort. Leaves ternate: leaflets ſmooth and flat. Flowers white, in axillary racemes. Legume ſomewhat creſcent-ſhaped, compreſſed, even, pendulous, containing three ovate ſeeds, pale variegated with red and eatable.—Native of Tunquin, and cultivated in Cochinchina [y].

16. This ſpreads out wide, and ſupports itſelf without any prop. Leaves ternate, large, ſoft and veined. Flowers white. Seeds white with the eye black. It

[k] Linn. ſpec. [l] Dillenius. [m] Hort. kew. [n] Dillenius. [o] Idem. [p] Linn. mant. [q] Jacquin. [r] Hort. kew. [s] Dillenius. [t] Hort. kew. [u] Jacquin. [x] Retzius. [y] Loureiro.

is ſown in great abundance in the fields of Italy in the month of may[x]: but it is a native of the Eaſt Indies.

Retzius remarks, that the character taken from the relative ſize of the bractes is very uncertain; they being in ſome varieties larger, in others leſs than the calyx.

17. Stem annual, upright, two feet high, ſubcylindrical, grooved, hairy, branched. Leaves ternate, broad-lanceolate, hairy; ſtipules in pairs, acute; petioles long. Flowers duſky yellow, on a long upright common peduncle. Calyx four-cleft, acute, equal; the upper legment emarginate. Banner large, roundiſh, ſpreading, plaited and emarginate at the tip: wings ſhorter, broad-ſickle-ſhaped, with a conical inflated lobe, prominent outwards: keel ſickle-ſhaped, of a length between the banner and wings. Legumes narrow, ſtraight, acuminate, hairy, brown. Seeds many, greeniſh-yellow, ovate, ſmall[y]. Thunberg obſerves, that it varies with white, and with black ſeeds.

Native of Ceylon, Amboina, China, Cochinchina and Japan.

18. Stem and leaves rigid. Flowers pale or greeniſh yellow. Legume thick, ending in a beak that is curved inwards. Seeds black, the ſize of Coriander. *Mexi* is the Spaniſh name.

Native of India. Cultivated in the Apothecaries botanic garden at Cheſſea, in 1758. It flowers in june and july[z].

19. Stem upright, ſcarcely ſcandent. The whole plant is covered with hairineſs of a colour like red wine. The lateral leaflets are half-cordate on the outer ſide, lanceolate on the inner. Stipules of the leaves oval-oblong, adnate as far as the middle, naked, ciliate. Stipules of the leaflets lanceolate, narrowing into a briſtle. Peduncles the length of the leaves, terminated by an ovate ſmooth receptacle, bearing ſeſſile yellow flowers in a head[a].

Stem a foot and half high, branched. Leaflets roundiſh, ſomewhat acute both ways, hairy, ſoft, yellowiſh-green. Stipules bifid, acute. Common peduncle nearly equal to the petiole, ending in a three or four-flowered head. Calyx five-cleft, ſupported by two incurved, inflected ſtipules, longer than the calyx. The keel putting forth a tubular little horn from one ſide, removes one of the wings, whilſt the other wing, with the keel and ſtamens is twiſted into a ſpiral. Legume round, ſlender, longiſh, acuminate. Seeds many, ſubovate, browniſh green, eſculent[b].

Native of the Eaſt Indies, China and Cochinchina.

20. Stem ſomewhat ſhrubby at bottom, from one to two feet high, branched, ſtiff, round, ſmooth, brown. Branches ſimple, upright, round, ſmooth. Leaves ternate: leaflets oblong, acuminate; the two lateral ones ſubſeſſile, entire, veined, ſmooth above, pubeſcent underneath. Petioles alternate, erect, ſtiff, channelled, angular, reddiſh. Stipules at the baſe of the petioles, oppoſite, acuminate: others at the baſe of the leaves. Peduncles long, faſtigiate, many-flowered, round, pubeſcent. Flowers in a ſort of ſpike, alternate, moſtly in pairs cloſe together, blood-red: banner of a paler red; wings deep red, twice as large as the banner; keel whiteiſh. Legume roundiſh, awl-ſhaped. Seeds roundiſh, ſeparated, brown.

Native of Jamaica in moiſt ſandy grounds[c]. Common in the Savannas about Spaniſh Town[d].

21. Stem about a foot high, branched. Petioles three or four inches long. The odd leaflet is an inch and half broad at the baſe, two inches and a half long, on a petiolule three quarters of an inch longer than the lateral leaflets, which are ſmaller; they are all very ſoft, and of a yellowiſh green colour. Peduncles axillary, ſtrong, nine inches in length. Corolla white. Legumes three or four inches long, almoſt round and ſtraight, clay-coloured. Seeds very many, almoſt round, white with a black eye, not ſo big as the ſmalleſt field pea. They are accounted the ſweeteſt and beſt food of any of the Kidney-beans[e].—Native of both Indies.

[x] Marſhall. [y] Loureiro. [z] Hort. kew. [a] Linn. mant. [b] Loureiro. [c] Swartz. [d] Browne. [e] Sloane.

Ray has enumerated 119 ſpecies of Phaſeolus, namely 31 in the firſt volume of his Hiſtory, and 88 in his third volume or Supplement; beſides ſome Braſilian ſorts from Piſo, and Ph. Caracalla, in the Appendix to his ſecond volume. Doubtleſs many of theſe are varieties; and many do not belong to this genus; the genus Dolichos not being conſtituted in his time.]

PROPAGATION AND CULTURE.

Kidney-beans for the table.

The three ſorts which are uſually cultivated for early crops, are the ſmall white Dwarf, the Dwarf black, which is called the Negro-bean, and the Liver-coloured Bean. The ſtalks of theſe never being very long, may be planted much nearer together than the larger growing kinds, and they require but little ſupport; theſe are planted on hot-beds under frames, or in pots which are placed in ſtoves, to come early in the ſpring, for which purpoſe they are better adapted than any of the other; but they are not to be compared with ſome of the others for goodneſs, but as they may be had at a time when the others cannot be ſo well obtained, they are generally cultivated in gardens; and where there are not the conveniences of ſtoves or frames for raiſing them very early, they are planted in warm borders near hedges, walls, or pales, where they will be fit for uſe a fortnight earlier than the other ſorts.

The next to theſe are the Batterſea and Canterbury Kidney-beans; theſe do not ramble far, and producing their flowers near the root, bear plentifully for ſome time: the Batterſea Bean is the forwarder of the two, but the other will continue bearing much longer; they are both better flavoured than any of the three former ſorts, but when they begin to be large are very ſtringy and rough.

There are two or three ſorts of Kidney-beans cultivated with erect ſtalks, which want no ſupport, as they do not put out any twining ſtalks; theſe are much cultivated by the gardeners for that reaſon, as alſo for their producing a great plenty of pods; but they are inferior in goodneſs to all the other, eſpecially that ſort with black and white ſeeds, whoſe pods have a rank flavour, and, when boiled, become ſoft and mealy; ſo this ſhould never be propagated by perſons of taſte.

The beſt ſorts for the table are the ſcarlet Bloſſom-bean before-mentioned, and a white Bean of the ſame ſize and ſhape, which appears to be only a variety of the ſcarlet, as it differs in no other reſpect but the colour of the flowers and ſeeds, being equal in ſize and flavour. And next to theſe is the large Dutch Kidney-bean, which grows as tall as either of theſe, ſo muſt be ſupported by ſtakes, otherwiſe the ſtalks will trail upon the ground and ſpoil. The ſort with ſcarlet flowers is preferable to this in goodneſs, and is alſo hardier; and although it will not come ſo early as ſome of the dwarf kinds, yet as it will continue bearing till the froſt puts a ſtop to it in the autumn, it is much preferable to either of them; for the pods of this ſort when old, are ſeldom ſtringy, and have a better flavour than the young pods of thoſe ſorts, and will boil greener; and where this is ſown in the ſame ſituation and ſoil as the Batterſea-bean, it will not be a fortnight later.

All the ſorts of Kidney-beans are propagated by ſeeds which are too tender to be ſown in the open air before the middle of april; for if the weather ſhould be cold and wet after they are in the ground, they will ſoon rot; or if the morning froſts ſhould happen after the plants come up, they will be deſtroyed; therefore the beſt way to have early Kidney-beans, where there is no conveniency of frames for raiſing them, is to ſow the ſeeds in rows pretty cloſe upon a moderate hot-bed, the latter end of march, or the beginning of april. If the heat of the bed is ſufficient to bring up the plants, it will be enough; this bed ſhould be arched over with hoops, that it may be covered with mats every night, or in bad weather. In this bed the plants may ſtand till they have put out their trifoliate leaves, then they ſhould be carefully taken up, and tranſ-

planted in warm borders near hedges, pales or walls. If the ſeaſon proves dry at the time of removing them, the plants ſhould be gently watered to forward their taking new root, and afterward they muſt be managed in the ſame way as thoſe which are ſown in the full ground. Theſe tranſplanted Beans will not grow ſo ſtrong as thoſe which are not removed, nor will they continue ſo long in bearing, but they will come at leaſt a fortnight earlier than thoſe which are ſown in the full ground.

The firſt crop intended for the full ground, ſhould be put in about the middle of april; but theſe ſhould have a warm ſituation and a dry ſoil, otherwiſe the ſeed will rot in the ground; or if the weather ſhould prove ſo favourable as to bring up the plants, yet there will be danger of their being killed by morning froſts, which frequently happen the beginning of may.

The ſecond crop, which ſhould be one of the three large ſorts laſt mentioned, ſhould be ſown about the middle of may. Theſe will come into bearing before the early kinds are over, and if they are of the ſcarlet ſort, will continue fruitful till the froſt deſtroys the plants in the autumn, and theſe will be good as long as they laſt. The manner of planting them is to draw ſhallow furrows with a hoe, at about three feet and a half diſtance from each other, into which you ſhould drop the ſeeds about two inches aſunder; then with the head of a rake draw the earth over them, ſo as to cover them about an inch deep.

If the ſeaſon is favourable, the plants will begin to appear in about a week's time after ſowing, and ſoon after will raiſe their heads upright; when the ſtems are advanced above ground, you ſhould gently draw a little earth up to them, obſerving to do it when the ground is dry, which will preſerve them from being injured by ſharp winds; but you ſhould be careful not to draw any of the earth over their ſeed-leaves, which would rot them, or at leaſt greatly retard their growth. After this, they will require no farther care but to ſtick them when the plants begin to run, and to keep them clear from weeds until they produce fruit, when they ſhould be carefully gathered two or three times a week; for if they are permitted to remain upon the plants a little too long, the Beans will be too large for eating, and the plants would be greatly weakened thereby.

The large ſorts of Kidney-bean muſt be planted at a greater diſtance, row from row; for as theſe grow very tall, if the rows are not at a greater diſtance, the ſun and air will be excluded from the middle rows, therefore theſe ſhould not be leſs than four feet diſtance row from row; and when the plants are about four inches high, the ſtakes ſhould be thruſt into the ground by the ſide of the plants, to which they will faſten themſelves, and climb to the height of eight or ten feet, and bear plenty of fruit from the ground upward. The Dutch and French preſerve great quantities of the large Dutch Beans for winter uſe, which they ſtew, and make good with gravy and other ſauces.

There are ſome perſons who raiſe theſe in hot-beds, in order to have them early. The only care to be taken in the management of theſe plants when thus raiſed, is to allow them room, and give them as much air as can be conveniently when the weather is mild, as alſo to let them have but a moderate heat; for if the bed is over hot, they will either burn or be drawn up ſo weak as ſeldom to come to good.

The manner of making the hot-bed being the ſame as for Cucumbers, &c. need not be repeated in this place; but only obſerve, when the dung is equally levelled, to lay the earth about four or five inches thick, and let the great ſteam of the bed paſs off before you ſow the ſeeds. The time for doing this muſt be proportioned to the ſeaſon when you would have the Beans for the table, but the fureſt time for a crop is about a week in february.

The manner of ſaving the ſeeds of theſe plants is to let a few rows of them remain ungathered in the height of the ſeaſon; for if you gather from the plants for ſome time, and afterwards leave the remaining for ſeed, their pods will not be near ſo long and handſome, nor will the ſeed be ſo good. In autumn, when you find they are ripe, you ſhould in a dry ſeaſon pull up the plants, and ſpread them abroad to dry; after which you may threſh out the ſeed, and preſerve it in a dry place for uſe.

[For forward crops of dwarf Kidney-beans, the early white and negro ſorts are the beſt and bear the longeſt. For the main crop, the ſpeckled, Batterſea and Canterbury dwarfs are to be preferred, theſe being plentiful bearers and of long continuance.

To have a regular ſupply of theſe from the middle or end of june to october, they ſhould be ſown from the middle of april to the middle or end of july, every fortnight or three weeks.

For the firſt crop the ſoil muſt be dry and light, the ſituation warm and ſheltered, the drills drawn north and ſouth. The other crops are better in the open quarters. When the weather is very dry, the Beans to be ſown ſhould be ſoaked ſome hours in water, or the drills may be well watered immediately before the Beans are put in.

The climbing ſorts or runners are not fit for early crops, but principally for ſummer and autumn from july to michaelmas, or till froſts put an end to them. The firſt or ſecond week in may is early enough to put in the firſt crop of theſe; and the ſecond may be planted any time in june. Two crops will furniſh an abundant and conſtant ſupply.

Dwarf Kidney-beans by artificial heat.

To have early Kidney-beans, they may be forwarded in a very moderate hot-bed at the end of march, and planted out, when they are an inch or two high, and the weather is favourable, in a warm border. They may be ſown on the ſurface in the hot-bed, or in large pots; but it is beſt to put them in ſmall pots, three in each pot, becauſe they may be turned out for tranſplantation, with the ball of earth about their roots, and thus be ſcarcely ſenſible of their removal. They muſt however be gradually inured to bear the open air, by taking off the covering whenever the weather is mild, and expoſing them by degrees; refreſhing them frequently with water, when they cannot have the benefit of warm ſhowers.

After they are tranſplanted they ſhould be well watered to ſettle the earth to their roots; and it will much forward their growth, if they are covered occaſionally with hand glaſſes, when the nights are cold.

After all, this crop will come into bearing only a fortnight ſooner than plants ſown in the natural ground.

But to produce Kidney-beans for the table in april and may, or perhaps towards the end of march, they muſt be raiſed and continued in a hot-bed, which muſt be made by the middle or end of february. When the heat and ſteam are abated, and the bed is covered ſix or eight inches thick with mould, ſow the ſeeds of one of the ſmall early dwarf ſorts in drills fifteen or eighteen inches aſunder, an inch deep, and two or three inches apart; give them air and refreſh them with water in fine weather. When they are fully grown, if they preſs much againſt the glaſſes, raiſe them at bottom to give the plants room to grow freely.

Or they may be raiſed on a very moderate hot-bed in december or january; and removed, when of a proper ſize into another hot-bed made as directed for Cucumbers; only the dung need not be ſo thick, leſs heat being required. When this bed is of a moderate warmth, lift the plants out of the other with a trowel, leaving as much earth about their roots as you can, and plant them at fourteen inches diſtance row from row, and four inches plant from plant. Give them a moderate watering, but afterwards be ſparing of it; ſhade the beds from noon till the ſun is near off, and give them air whenever the weather is mild. The frames ſhould be two feet high in the back, ſloping to fifteen inches in front, and the bed ſhould be four feet broad.

In hot-houſes or ſtoves early Kidney-beans may be had at almoſt any time with eaſe, by raiſing them in pots or long narrow boxes. The beſt ſorts for this purpoſe are the early white, liver-coloured or ſpeckled dwarfs. The pots or boxes filled with rich light earth

may be placed upon the top of the wall which surrounds the bark-bed, or upon shelves in any convenient part of the house. When the seeds begin to sprout moisten the mould, and when they are grown up water them frequently, or at least three times a week. Where room is wanting, the seeds may be set in small pots, and transplanted into larger ones for fruiting.]

The seeds of the more tender sorts of *Phaseolus*, which are cultivated for curiosity or ornament, should be sown in a moderate hot-bed in the spring; and when the plants come up, they must be carefully transplanted into pots filled with light fresh earth, and plunged into a hot-bed to facilitate their taking root; after which they should be inured to bear the open air by degrees, and may be removed into it at the end of june or beginning of july, in a sheltered situation. As they advance in growth, the perennial sorts must be removed into larger pots.

Some that are less tender may be sown on a warm border at the end of april; and when the plants run up, they must be supported.

[PHASEOLUS. See *Abrus*, *Clitoria*, *Connarus*, *Cytisus*, *Dolichos*, *Glycine*, *Hedysarum*, *Mimosa*.

PHEASANT'S-EYE. See *Adonis*.]

PHELLANDRIUM. [(Φελλος ανδριον. *Suber hominis*. Linn.)

Lin. gen. n. 353. *Reich. n.* 383. *Schreb. n.* 485. *Tournef. t.* 161. *Juss.* 221.

Class. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ* or *Umbelliferæ*.

GENERIC CHARACTER.

CAL. *Umbel universal* manifold. *Partial* similar. *Involucre universal* none: *partial* seven-leaved, *leaflets* acute, the length of the umbellet. *Perianth* proper, five-toothed, permanent.

COR. *universal* almost uniform. *Florets* all fertile, in the disk smaller. *Proper* unequal: *petals* five, acuminate, cordate-inflex.

STAM. *Filaments* five, capillary, longer than the corolla. *Anthers* roundish.

PIST. *Germ* inferior. *Styles* two awl-shaped, erect, permanent. *Stigmas* blunt.

PER. none. *Fruit* ovate, even, crowned with the perianth and pistils, bipartile.

SEEDS two, ovate, smooth.

ESSENTIAL CHARACTER.

Florets of the disk smaller. *Fruit* ovate, even, crowned with the perianth and pistil.

SPECIES.

1. Phellandrium aquaticum. *Common Water Hemlock.*
Lin. spec. 366. *Reich.* 1. 701. *Willd.* 1444. *hort. cliff.* 100. *fl. suec. n.* 252. *Hudf. angl.* 122. *Wither. arr. ed.* 3. 303. *Lightf. scot.* 163. *Relh. cant. n.* 231. *Sibth. oxon. n.* 304. *Woodv. med. bot.* 2. 140. *t.* 266. *Hall. helv. n.* 757. *Scop. carn. n.* 363. *Pollich pal. n.* 293. *Neck. gallob.* 149. *Lees herborn. n.* 216. *Gmel. fib.* 1. 308. *it.* 1. 162. *Hoffm. germ.* 102. *Fl. dan. t.* 1154. *Krock. sile. n.* 440. *Villars dauph.* 2. 619. *Allion. pedem. n.* 1328. *Blackw. t.* 570. *Plenck, ic. t.* 210.

Phellandrium. *Ded. pempt.* 591. *Riv. pent. t.* 65.—vel Cicutaria aquatica quorundam. *Baub. bis.* 3. 181. *Raii syn.* 215. *Petiv. brit. t.* 28. *f.* 4.

Ligusticum Phellandrium. *Crantz. austr.* 200. *Roth. germ.* 1. 123. 2. 321.

Cicutaria palustris. *Lob. obs.* 424. 1. *ic.* 1. 735. 1. *Tabern.* 783. *Ger.* 905. *emac.* 1063. *Raii hist.* 452.—tenuifolia. *Baub. pin.* 161. *Park. theat.* 933. 6. *Mor hist. s.* 9. *t.* 7. *f.* 7. *raro* 1.

Fœniculum aquaticum. *Murr. appar. med.* 1. 267.

β. Millefolium aquaticum. *Matth. dioſc.* 2. 484.—umbellatum coriandri folio. *Baub. pin.* 216. *Baub. hist.* 3. 2. 9. *Raii syn.* 216.

Ramifications of the leaves divaricated.

2. Phellandrium Mutellina.
Lin. spec. 366. *Syst.* 286. *Reich.* 1. 701. *Willd.* 1444. *Hall. helv. n.* 763. (Seſeli). *Scop. carn. n.* 362. *Jacqu. vind.* 223. *austr.* 1. *t.* 56. *Gmel. fib.* 1. 212.

Ligusticum Mutellina. *Crantz. austr.* 198.

Meum alpinum umbella purpurascente. *Baub. pin.* 148. *Hall. opusc.* 288.

Mutellina. *Baub. hist.* 3. 66. *Camer. epit.* 8. *Raii hist.* 453.

Meum alp. germanicum, Mutellina dictum. *Park. theat.* 889. *f.* 5.

Daucus montanus. *Clus. pann.* 700.

Stem almost naked, leaves bipinnate.

DESCRIPTIONS, &c.

1. Root biennial. Radical fibres abundant, placed in whorls at the lower joints of the stem, which they support by rooting in the mud. Stem curved at bottom, and then upright, hollow and hydraulic, four inches in thickness, smooth, striated or slightly grooved, branched, distorted, three or four feet in height. Branches divaricating. Leaves very large, triply pinnate, bright green, smooth: pinnas multifid, ovate, gash-toothletted; pinnules semipinnate, the last lobules a little wider than the nerve, lanceolate, blunt: both pinnas and pinnules branching at obtuse angles with the nerves. Petioles arising from a sheath, fistular, not keeled. Sheaths wide, augmented by a white membrane, embracing the stem. Universal umbel drooping, composed of seven, eight or nine or more unequal rays: partial closer, with a many-leaved involucre; leaflets lanceolate, linear or bristle-shaped. Proper perianth very small. Corolla small, white: petals little unequal. Fruit crowned with the little five-toothed perianth, oblong, smooth, with five red streaks[1].

Native of most parts of Europe, by the side of rivers, ditches and ponds, where there is mud, flowering in june and july.

Linnæus informs us, that the horses in Sweden, by eating this plant are seized with a kind of palsey; hence Withering and Sibthorp have named it *Horse-bane*. This effect however is not to be ascribed to the plant, but to a coleopterous insect breeding in the stalks, which he therefore names *Curculio paraplecticus*. In the winter, the roots and stem, dissected by the influence of the weather, afford a curious skeleton or net-work[2]. The leaves are sometimes added to discutient cataplasms; and for this purpose Boerhaave speaks highly of it. The seeds are recommended in intermittents, and are said to be diuretic, antiseptic and expectorant. The dose is from one to three drams daily[3].

The seeds, when taken in large doses, produce a sensation of weight in the head, accompanied with giddiness. They manifest an aromatic acrid taste, approaching to that of Lovage. Distilled with water, they yield an essential oil, of a pale yellow colour, and a strong penetrating smell. One pound of the seeds affords an ounce of watery extract, but nearly double this quantity of spirituous extract, of which more than three drams consists of resin[4].

The efficacy of this plant rests chiefly on the testimonies of Ernstingius and Lange, by whom various cases of its successful use are published, especially in wounds and inveterate ulcers, and even in cancers; also in phthisis pulmonalis, asthma, dyspepsia and intermittent fevers[5].

Dr. Woodville rightly observes, that though the disorders here noticed are so dissimilar as to afford no satisfactory evidence of the medicinal qualities of these seeds, yet they appear to be well deserving of farther investigation.

β. In running streams the leaves become divided, like those of *Ranunculus aquatilis*, in the same situation. Dillenius remarked it between Woodstock and the Duke of Marlborough's bridge at Blenheim, in such abundance as to stop the course of the stream. Also in Hackney river[6]. Sometimes, though rarely, according to the remark of Mr. Relhan, when the plant grows in an angle, out of the rapid course of the stream, it produces its flowers.

[1] Krocker, Haller, Pollich. [2] Linn. suec.
[3] Lange, Withering. [4] Ernstinglius. [5] Woodville.
[6] Ray syn. & Withering.

2. Root

2. Root thick, branched, the head crowned with briſtles. Stems a foot high or leſs. Leaves hardiſh, bright green, more in length than breadth; pinnules ſemipinnate, the ultimate ſegments flat, very ſharp, ſimple, two-lobed and three-lobed. Petals commonly purple, unequal. Fruit ſemioval, large, ſurrounded with a ſort of circle, with ridges ſo large as that it is almoſt winged [a].

Linnæus remarks, that it has the leaves of *Chærophyllum*; and that the involucrets are of the ſame length with the umbellets. Scopoli—that in the Alps it is a ſmall plant; but becomes three times as big in a garden; and has the fruit crowned with a conſiderable calyx, but not with a circle. Haller ſays, that it has a very aromatic ſmell.

Native of Siberia, Auſtria, Carniola and Switzerland. Haller informs us, that the goodneſs of the Alpine paſtures is eſtimated by the abundance of this plant. I found it in flower, in auguſt 1779, as I paſſed over the Col de Balme.

It was introduced here in 1774, by the Doctors Pitcairn and Fothergill [b].

PHELIPÆA. See *Deſfont. fl. atlant.* 60.

PHELLOS. See *Quercus.*

PHELYPÆA ſ. PHÆLYPÆA. Browne. See *Caprraria.*

Phelypæa juſtanica & orientalis. *Tournef.* See *Lathræa* & *Deſfont.* 61.

P. ſanguinea. See *Thunb. prodr. cap.* 1.]

PHILADELPHUS. (Φιλάδελφος *of Ariſtotle. From Ptolemy Philadelphus King of Egypt.*)

Lin. gen. n. 614. *Reich. n.* 669. *Schreb. n.* 840. *Gærtn. t.* 35. *Juſſ.* 325. Syringa. *Tournef.* 389.

Claſſ. & ord. 1. Icoſandria Monogynia.

Nat. order of *Heſperideæ. Myrti*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, four or five-parted acuminate, permanent.

COR. *Petals* four or five, roundiſh, flat, large, ſpreading.

STAM. *Filaments* twenty or twenty-five, awl-ſhaped, the length of the calyx. *Anthers* erect, four-grooved.

PIST. *Germ* inferior. *Style* filiform, four or five-parted. *Stigmas* ſimple.

PER. *Capſule* ovate, acuminate at both ends, naked at the top by the calyx being barked, four or five-celled: *partitions* contrary.

SEEDS numerous, oblong, ſmall, decumbent, arilled, faſtened to the thickened edge of the partitions. *Arils* club-ſhaped, acuminate, toothletted at the baſe.

ESSENTIAL CHARACTER.

Cal. four or five-parted, ſuperior. *Pet.* four or five. *Capſ.* four or five-celled, many-ſeeded.

SPECIES.

1. Philadelphus coronarius. *Common Syringa.*
   Lin. ſpec. 671. *Reich.* 2. 473. *hort. cliff.* 188. *upſ.* 122. *Gærtn. fruct.* 1. 173. *Hall. helv. n.* 1100. *Duham. arb.* 2. *t.* 83. *Kniph. cent.* 5. *n.* 65. *Curt. magaz.* 391. *Villars dauph.* 3. 529. *Allion. pedem. n.* 1071. *Krock. ſilef. n.* 745.
   Syringa alba. *Ger.* 1213. *f.* 1. *emac.* 1399. *f.* 1. *Raii hiſt.* 1763.—ſ. Philadelphus Athenæi. *Baub. pin.* 398.—flore albo. *Baub. hiſt.* .—ſimplici. *Park. theat. t.* 1467. *f.* 4. 1468. 4. *Beſl. hort. cyſt. vern. frut. t.* 2. *f.* 3.
   Frutex coronarius. *Cluſ. hiſt.* 1. 55. *f.* 1.
   β. Ph. nanus. *Mill. dict. n.* 2. *Du Roi harbk.* 2. 6.
   γ. Ph. inodorus. *Mill. dict. n.* 3.
   Leaves ſomewhat toothed.

[2. Philadelphus ſcoparius. *Myrtle-leaved Syringa.*
   Ait. hort. kew. 2. 156.
   α. Ph. linifolius. *Narrow-leaved Syringa.*
   Melaleuca ſcoparia. *Lin. ſuppl.* 343. *Forſt. ſtirp. ſial. fl. auſtral. n.* 210.
   Leptoſpermum ſcoparium. *Forſt. gen.* 36.
   New Zealand Tea-plant. *Cook's voy. vol.* 1. 100. *t.* 22.
   Leaves lanceolate.
   β. Ph. myrtifolius. *Myrtle-leaved Syringa.*
   Leaves ovate elliptic.
   Leaves lanceolate quite entire rigid three-nerved, all the flowers five-cleft, calycine ſegments coloured deciduous.

3. Philadelphus aromaticus. *Sweet-ſcented Syringa.*
   Ait. hort. kew. 2. 156.
   Leaves linear-lanceolate nerveleſs quite entire, all the flowers five-cleft, calycine ſegments coloured deciduous.

4. Philadelphus laniger.
   Ait. hort. kew. 2. 156.
   α. Ph. caneſcens. *Hoary Syringa.*
   Leaves oval, villoſe hairs caneſcent.
   β. Ph. piliger. *Hairy Syringa.*
   Leaves lanceolate-oblong hairy ſubobliquè reflex at the top.
   Leaves oblong acute quite entire pubeſcent, calyxes woolly.]

DESCRIPTIONS, *&c.*

1. The common or white Syringa or Mock Orange is a ſhrub that ſends up a great number of ſlender ſtalks from the root, ſeven or eight feet in height, having a gray bark, and putting forth ſeveral ſhort branches from their ſide. Leaves ovate or ovate-lanceolate; thoſe upon the young ſhoots three inches and a half long, and two broad in the middle, terminating in acute points, and having ſeveral indentures on their edges; they are rough and of a deep green on their upper ſide, and pale on their under; ſtand oppoſite upon very ſhort foot-ſtalks, and have the taſte of freſh Cucumbers. The flowers come out from the ſide, and at the end of the branches, in looſe bunches, each on a ſhort pedicel; they are white, and have a ſtrong ſcent, which at ſome diſtance reſembles that of Orange-flowers; but near, it is too powerful for moſt perſons. The flowers appear at the end of may, and continue great part of june: [this year 1799, they did not open till towards the end of june.] This ſhrub ſeldom produces ſeeds that ripen in this country.

[The primary flower is five-cleft in the calyx, corolla, piſtil and capſule; the reſt are four-cleft [c]. The ſtyle in the flowering calyx is four-cleft at the tip only, but in the ſeeding calyx it is cloven to the very baſe [d]. The leaves are ſtrongly nerved underneath, and are very irregularly toothed. In a large parcel of the flowers which I have before me, there is only one which has five petals, and the fifth is very narrow and ſmall.

Native probably of the South of Europe, though no place is aſſigned in any of the local Floras where it is found really wild. Linnæus ſays, but with a doubt, about Verona. Ray obſerved it near Mont Saleve in Savoy, far from any houſe, but did not dare to pronounce it wild there. Haller and Krocker ſpeak of it only as a denizon, and Allioni as of exotic origin. Villars ſays it is not indigenous of Dauphiné, though it is found in hedges far from habitations.—It was cultivated in 1597 by Gerarde [e].]

β. Dwarf Syringa ſeldom riſes above three feet high. The leaves are ſhorter, more ovate, and little indented on their edges. The flowers come out ſingly from the ſide of the branches, and have a double or treble-row of petals of the ſame ſize and form as the other, and the flowers have the ſame ſcent; but flowering very rarely, it is not much eſteemed.

γ. Philadelphus inodorus, or Carolina Syringa riſes with a ſhrubby ſtalk about ſixteen feet high, ſending out ſlender branches from the ſides, oppoſite to each other. Leaves ſmooth, ſhaped like thoſe of the Pear-tree, entire, oppoſite, on pretty long foot-ſtalks. The flowers are produced at the ends of the branches; they are large but without ſcent; each has four white oval petals ſpreading open, and a large calyx compoſed of four acute-pointed leaflets. Capſules oval, filled with ſmall ſeeds.

[Humphry Marſhall, in his American Grove, gives us no information concerning this ſhrub; having only copied Mr. Miller's deſcription, by which it does not ſeem to differ materially from the common ſort.

2. Stem arboreous, very much branched, almoſt upright, full of chinks, aſh-coloured; branches diffuſed, oblique, ſubfaſtigiate, round, leafleſs, the upper ones rod-like, leafy, herbaceous at the top, ſilky-

[a] Haller. [b] Hort kew. [c] Linn. [d] *Munch. hoſt. n.* 401. [e] Hort. kew.

villoſe.

villose. Leaves alternate, scattered, subsessile, acute, spreading, flat, even, dotted, dark green above, pale underneath. Petioles scarcely any, flattish. Flowers solitary, terminating, sessile, white, the size of Cherry-blossoms. Bractes roundish, imbricate, concave, deciduous, surrounding and covering the calyx to the middle. Perianth hemispherical, growing to the germ; the margin quite entire and elevated: segments small, ovate, concave, alternate with the petals, white, on the outside red. Petals five, orbiculate, spreading very much, flattish, inserted by a very small claw into the inner margin of the calyx, and three times as long as the leaflets of it. Filaments twenty-four, erect, half the length of the petals, inserted in a single row into the edge of the calyx. Anthers twin, roundish. Germ hemispherical, umbilicated by the calyx, somewhat convex above. Style of the same length and in the same direction with the stamens, deciduous. Capsule excavated at top, five-streaked, five-celled, five-valved, gaping at top. Seeds linear, cylindric, very slender.

Native of New Zealand, where the fresh flowering shoots were used as tea by the sailors in Captain Cook's voyage. They found the infusion sweetly aromatic and fragrant, in a short time however it became very bitter. It was supposed to be serviceable in the sea scurvy[1].—It was introduced here in 1772, and flowers in june and july[2].

3. This also is a native of New Zealand, where it was found, with the preceding, by Sir Joseph Banks. It was introduced with that in 1772, and flowers in july and august.

4. Native of New South Wales. Introduced in 1774, by Tobias Furneaux, Esq. It flowers in june and july[2].]

PROPAGATION AND CULTURE.

1. Common Syringa is extremely hardy, and will thrive in almost any soil or situation, but will grow taller in light good ground, than in that which is stiff. It is usually propagated by suckers, which are sent from the roots in great plenty. These should be taken from the old plants in autumn, and planted in a nursery, to grow one or two years till they have obtained strength, and then they may be transplanted to the places where they are designed to remain. They are commonly disposed in plantations of flowering shrubs, among others of the same growth. [The Syringa mixes very well with the Lilacs, Gelder Rose and Laburnum; and is particularly valuable from its thriving under the shade of trees, and forming a blockade against low buildings, where persons have no objection to the powerful odour.

It may be increased by cuttings, planted in october in a moist shady border: and by layers, from young twigs put into the ground at the beginning of winter; these will be rooted by the autumn following.

The other species may be increased in the same ways, but are too tender to bear the open air in our climate.]

PHILLYREA. (*Φιλλυρα of Dioscorides: from Philyra, mother of Chiron; whence Ovid calls him Phyllirius.*)
Lin. gen. n. 19. *Reich. n.* 19. *Schreb. n.* 24. *Tournef. t.* 367. *Vaill. act. gall.* 1722. *Juss.* 106. *Gærtn. t.* 92.

Class. 2. 1. Diandria Monogynia.
Nat. order of *Sepiariæ*. *Jasmineæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, four-toothed, very small, permanent.
COR. one-petalled, funnel-form: *tube* scarcely any: *border* four-parted, revolute, acute; *segments* ovate.
STAM. *Filaments* two, opposite, short. *Anthers* simple, erect.
PIST. *Germ* superior, roundish. *Style* simple, the length of the stamens. *Stigma* thickish.
PER. *Berry* ovate-globular, two-celled.
SEEDS solitary, flattish on one side, convex on the other, one of them frequently abortive.

[1] Forster escul. [2] Hort. kew. [3] Idem.

ESSENTIAL CHARACTER.

Cal. four-toothed. *Cor.* four-cleft. *Berry* (or Drupe) two-celled. *Seeds* solitary.

SPECIES.

1. Phillyrea media. *Lance-leaved Phillyrea.*
Lin. spec. 10. *Reich.* 1. 18. *Willd.* 42. *hort. cliff.* 4. *upf.* 5. *Ait. kew.* 1. 11. *Gærtn. fruct.* 2. 71.
α. P. ligustrifolia. *Privet-leaved Phillyrea.*
Mill. dict. n. 4.
P. folio Ligustri. *Bauh. pin.* 476.
P. III. *Clus. hist.* 1. 52. *fig.*
Leaves oblong-lanceolate.
β. Ph. virgata. *Long-branched Phillyrea.*
Ait. kew. 1. 11.
Leaves lanceolate, branches erect rod-like.
γ. Ph. pendula. *Drooping Phillyrea.*
Ait. kew. 1. 11.
Leaves lanceolate, branches divaricating-pendulous.
δ. Ph. oleæfolia. *Olive-leaved Phillyrea.*
Mill. dict. n. 5. *Ait. kew.* 1. 11. *Pluk. phyt. t.* 310. *f.* 5.
Leaves oblong-lanceolate, branches somewhat erect.
ε. Ph. buxifolia. *Box-leaved Phillyrea.*
Ait. kew. 1. 11.
Leaves oval-oblong blunt/h.
Leaves oblong-lanceolate entire and serrate.
2. Phillyrea anguſtifolia. *Narrow-leaved Phillyrea.*
Lin. spec. 10. *Reich.* 1. 18. *Willd.* 43. *hort. cliff.* 4. *Knipb. orig. cent.* 10. *n.* 69. *Ger. prov.* 321. *Villars dauph.* 2. *&c.*
* α. Ph. lanceolata. *Common narrow-leaved Phillyrea.*
Ait. kew. 1. 11.
P. anguſt. prima. *Bauh. pin.* 476. *Raii hist.* 1585. 1.
Ph. IV. *Clus. hist.* 1. 52. *fig. Camer. epit.* 90.
Leaves lanceolate, branches ſtraight.
β. Ph. roſmarinifolia. *Roſemary-leaved Phillyrea.*
Mill. dict. n. 7. *Ait. kew.* 1. 11.
P. anguſt. ſecunda. *Bauh. pin.* 476.
P. V. *Clus. hist.* 1. 52.
Leaves lanceolate, branches ſtraight.
γ. Ph. brachiata. *Dwarf Phillyrea.*
Ait. kew. 1. 12.
Leaves oblong-lanceolate ſhorter, branches divaricating.
Leaves linear-lanceolate quite entire.
3. Phillyrea latifolia. *Broad-leaved Phillyrea.*
Lin. spec. 10. *Reich.* 1. 18. *Willd.* 43. *hort. cliff.* 4. *upf.* 4. *Ait. kew.* 1. 12. *Ger. prov.* 321. 2.
α. Ph. lævis. *Smooth broad-leaved Phillyrea.*
Ait. kew. 1. 12.
P. latifolia. *Mill. dict. n.* 1.—lævis. *Bauh. pin.* 476.
P. arbor. *Lob. ic.* 2. 132. *Bauh. hist.* 1. 540. *fig.*
Leaves ovate flat obſcurely ſerrate.
β. Ph. ſpinoſa. *Prickly broad-leaved Phillyrea.*
Mill. dict. n. 3. *Ait. kew.* 1. 12.
P. latifolia ſpinoſa. *Bauh. pin.* 476. *Raii hist.* 1586.—triphyllos. *Pluk. phyt. t.* 310. *f.* 4.
P. I. *Clus. hist.* 1. 51. *fig.*
Leaves ovate-oblong acute finely ſerrate flat.
γ. Ph. obliqua. *Ilex-leaved Phillyrea.*
Ait. kew. 1. 12.
P. folio leviter ſerrato. *Bauh. pin.* 476.
P. II. *Clus. hist.* 1. 52. *fig. Ger.* 1210. 3.
Leaves lanceolate-acute ſerrate bent obliquely.
Leaves ovate-oblong ſubcordate ſerrate.

DESCRIPTIONS, *&c.*

[The three species of Phillyrea are distinguished by the form and indentations of their leaves. In the first these are lanceolate inclining to oblong, ovate, or oval, of an intermediate breadth between the two others, whence its trivial name; they are sometimes serrate, sometimes the serratures are very few, and sometimes there are none. In the second, the leaves are narrower, of a linear form, inclining more or less to lanceolate, and quite entire about the edges. In the third, they are wider, of an ovate form, more or less inclining to oblong or lanceolate, and serrate.

These shrubs are natives of the Southern countries of Europe; are Evergreens, and frequently confounded with the *Alaternus*. That however has the leaves placed alternate on the branches, whereas in this they are opposite: that also has five stamens, and this has only two, to each flower.]

1. This

1. This riſes to an equal height with the third ſort, which is commonly called the True Phillyrea; but the branches are more diffuſed, and have a darker bark: the leaves are of a darker green, are more than two inches long, and almoſt an inch and half broad, a little ſerrate on their edges, oppoſite on ſhort foot-ſtalks. Flowers axillary, in long bunches, of an herbaceous white colour.

Mr. Miller has two other ſpecies, which are varieties of this, namely the *Privet-leaved* and *Olive-leaved*. Theſe are of humbler growth, ſeldom more than eight or ten feet high.

The branches of the *Privet-leaved* are weaker, and ſpread wider, and are covered with a light brown bark. The leaves are ſtiff, almoſt two inches long, and half an inch broad in the middle, drawing to a point at both ends, and ſit cloſe to the branches. Flowers in little axillary cluſters, ſmall and whiter.

In the *Olive-leaved*, the branches are ſtronger, and ſpread out wider; the bark is of a lighter colour; the leaves are ſtiff, ſmooth and entire, on very ſhort foot-ſtalks, of a lucid green, and terminating in a point. Flowers in cluſters, on pretty long peduncles, from the axils of the young branches, ſmall and white.

[In Mr. Aiton's catalogue of the Royal garden at Kew, where this genus is very accurately detailed, two other varieties are added, namely the *Long-branched*, with long upright branches; and the *Drooping*, with the branches hanging down and ſtraddling.

According to Gærtner, the fruit is a ſuperior berried Drupe, of a black colour, and terminated by the globular ſtigma: the rind fleſhy, but thin: the ſhell papery, very thin, white and two-celled. Seeds one in each cell, but one of them commonly abortive, ovate, ſlightly acuminate at top, convex on one ſide, flattiſh or angular on the other, ſomewhat wrinkled, of a ruſeſcent bay colour, faſtened to the partition.]

2. Stalk ten or twelve feet high, ſending out oppoſite branches, covered with a brown bark ſpotted with white. Leaves ſmooth, ſtiff, narrow, entire, ſeſſile, about an inch and half long, and half an inch broad in the middle, drawing to a point at both ends, of a light green and pointing upwards. The flowers come out in large cluſters at each joint of the branches, ſitting cloſe like whorled flowers, and almoſt ſurrounding them; they are ſmall and white.

Roſemary-leaved Phillyrea (n. 7. of Miller) is a variety of this. It is of humbler growth, ſeldom riſing more than four or five feet high, ſending out ſlender, oppoſite, ſtraight, branches, ſparſedly diſpoſed. Leaves dark green, ſtiff and entire; about an inch long, and not more than an eighth of an inch broad, ſeſſile. Flowers ſmall, white, in cluſters from the ſide of the branches. Berries very ſmall, rarely ripening in England.

[The Kew catalogue adds another variety under the name of *brachiata* or *Dwarf Phillyrea*.]

3. The true Phyllyrea, ſo called to diſtinguiſh it from the Alaternus, which the gardeners call ſimply Phillyrea; or the *Smooth broad-leaved Phillyrea*, riſes with a ſtrong upright ſtem to the height of eighteen or twenty feet, dividing into ſeveral branches, covered with a ſmooth grayiſh bark. Leaves entire (or obſcurely ſerrate), firm, of a light green, an inch and half long, and an inch broad, on ſhort foot-ſtalks. Flowers axillary, on each ſide, of an herbaceous white colour, in ſmall cluſters; they come out in march, and being ſmall make no great appearance.

Prickly broad-leaved Phillyrea is a variety of this. It is as high as the ſmooth one, and ſends out ſeveral ſtrong branches, which grow erect, and are covered with a gray bark. Leaves an inch and half long, and an inch broad, firm, of a lucid green, and ſerrate, each ſerrature ending in a ſpine.

[Mr. Aiton adds another variety, under the name of *obliqua*, or *Ilex-leaved Phillyrea*.

Theſe ſhrubs were cultivated very early in our gardens. Gerarde ſays that he planted them at Barne Elmes near London, belonging to the right honourable the Earl of Eſſex, and that he had them growing in his own garden likewiſe.]

PROPAGATION AND CULTURE.

Theſe ſhrubs are hardy enough to thrive in the open air in England, and are never injured except the winters are very ſevere, which ſometimes cauſes their leaves to fall, and kills a few of the weaker branches, but theſe are repaired by new ſhoots the following ſummer; ſo that there are but few of the evergreen-trees which are hardier than theſe, or that deſerve more to be cultivated for pleaſure.

Formerly theſe were either planted againſt walls, to which they were trained to cover them; or if they were placed as ſtandards, their branches were ſheared either into balls or pyramids, like moſt of the evergreen-trees; ſo that when the former old taſte of laying out gardens was exploded, the evergreens were generally baniſhed; and for ſome years there were but few ſorts cultivated, whereby ſeveral valuable kinds of evergreen-trees were almoſt entirely loſt in England, and have been with difficulty retrieved ſince; in the manner which the evergreen trees and ſhrubs are now diſpoſed in gardens, they have a very fine effect, eſpecially during the winter ſeaſon, when the other trees are deſtitute of leaves.

The firſt, third and prickly broad-leaved ſorts are very proper to intermix with other evergreen-trees of the ſame growth, to form clumps in parks, or to plant round the borders of woods; which are filled with deciduous trees, where in the ſummer time, the dark ſhade of theſe evergreens will make a fine contraſt with the brighter green leaves of the deciduous trees; and in winter, when the latter are deſtitute of leaves, they will have a fine effect, and will be a harbour for birds. Theſe may be trained up to ſtems, ſo as to be out of the reach of cattle, therefore may be planted in open places, where, if they are fenced againſt cattle till they are grown up, they may be afterwards expoſed.

The others, which are of humbler growth, muſt be confined to gardens or other incloſures, where they may be ſecured from cattle, hares, rabbets, &c. otherwiſe they will be ſoon deſtroyed.

Theſe plants are propagated either from ſeeds or layers, but the latter being the moſt expeditious method in England, is chiefly preferred. The beſt time to lay them down is in autumn, when you ſhould dig the ground round the ſtems of the plants intended to be layed, making it very looſe; then making choice of a ſmooth part of the ſhoot, you ſhould make a ſlit upward (in the manner as is practiſed in laying of Carnations) and then bend the branch gently down to the ground, making a hollow place with your hand to receive it; and having placed the part which was ſlit into the ground, ſo as that the ſlit may be open, you ſhould faſten it down with a forked ſtick that it may remain ſteady, covering that part of the branch with earth about three inches thick, obſerving to keep the upper part erect. You muſt keep them clear from weeds the ſpring and ſummer following, which, if ſuffered to grow up amongſt them, will prevent their taking root.

The autumn following moſt of theſe plants will be rooted, at which time they may be taken off, and carefully planted in a nurſery, where they may be trained up three or four years in the manner you intend them to grow; during which time dig the ground between the rows, and cut about the roots of the plants every year, which will cauſe them to ſtrike out ſtrong fibres, ſo as to ſupport a good ball of earth when they are removed; alſo ſupport their ſtems with ſtakes, in order to make them ſtraight, otherwiſe they are very apt to grow crooked and unſightly.

When the plants have been thus managed three or four years, tranſplant them into the places where they are deſigned to remain. The beſt time for this work is the end of ſeptember, or the beginning of october; but in removing them, dig round their roots, and cut off all downright or ſtrong roots, which have ſhot out to a great diſtance, that you may the better preſerve a ball of earth to each plant, otherwiſe they are ſubject to miſcarry; and when you have placed them in their new quarters, lay ſome mulch upon the ſurface of the ground to prevent its drying. You ſhould alſo

ſupport the plants with ſtakes, until they have taken faſt hold of the earth, to prevent their being turned out of the ground, or diſplaced by the winds, which will deſtroy the fibres that were newly put out, and greatly injure the plants. Theſe trees delight in a middling ſoil, which is neither too wet and ſtiff, nor too dry, though the latter is to be preferred to the former, provided it be freſh.

Thoſe ſorts with ſmall leaves are commonly two years before they take root when laid, therefore they ſhould not be diſturbed, for the raiſing them out of the ground greatly retards their rooting.

If theſe plants are propagated by ſeeds, they ſhould be ſown in the autumn ſoon after they are ripe, for when they are kept out of the ground till ſpring, they do not grow the firſt year. The ſeeds will do beſt if they are ſown in pots or boxes filled with light loamy earth, and placed under a garden frame where they may be ſcreened from hard froſt, but always expoſed to the open air in mild weather. If the ſeeds are ſown early in the autumn, the plants will appear in the ſpring; but if they ſhould not come up, the pots ſhould be plunged into the ground in an eaſt border, where they may only have the morning ſun, in which ſituation they ſhould remain the following ſummer: during which time they may be conſtantly kept clean from weeds, and in the autumn removed again under a frame for ſhelter in winter, and the ſpring following the plants will certainly come up, if the ſeeds were good. Towards the middle of april, the pots ſhould be again plunged into the ground on an eaſt border, to prevent the air from drying the earth through the pots, which is generally the caſe when the pots ſtand upon the ground; ſo that they muſt then be frequently watered, which ſhould not be practiſed to theſe plants where it can be avoided. The michaelmas following the plants ſhould be carefully taken out of the pots, and planted in a nurſery-bed, covering the ſurface with old tan to keep out the froſt; and if the winter prove ſevere, they ſhould be covered with mats, afterwards they may be treated as the layers.

PHILLYREA. See *Caſſine*, *Ligaſtrum*, *Myrtus*.

PHILLYREASTRUM. See *Morinda*.

PHILYDRUM. (*From* φιλος *and* υδωρ, *water-loving.*)

Lin. gen. Schreb. n. 1703. *p.* 782. *Gærtn. t.* 16. *Banks.*

Claſſ. 1. 1. Monandria Monogynia.

GENERIC CHARACTER.

CAL. *Spathe* one-leafed, ovate, acuminate, longer than the corolla.

Perianth none.

COR. *Petals* four: two *outer* larger, ovate; two *inner* ſmaller by half, lanceolate.

STAM. *Filament* ſingle, ſtrec, awl-ſhaped. *Anther* faſtened on both ſides to the filament above the middle; cells ſubglobular.

PIST. *Germ* ſuperior, oblong. *Style.*

PER. *Capſule* oblong, obſoletely three-ſided, three-celled, three-valved: *partitions* contrary.

SEEDS very numerous, irregularly ſhaped like ſaw-duſt.

ESSENTIAL CHARACTER.

Spathe one-flowered. *Perianth* none. *Cor.* four-petalled, irregular. *Capſ.* three-celled, many-ſeeded.

SPECIES.

1. Philydrum lanuginoſum.

Gærtn. fruct. 1. 62. *t.* 16. *Lin. ſpec. ed. Willd.* 17.

Garciana cochinchinenſis. *Lour. cochinch.* 15. *ed. Willd.* 20.

DESCRIPTION, *&c.*

Root perennial. Stem two feet high, herbaceous, quite ſimple, ſpongy, upright, round, woolly. Leaves awl-ſhaped, thick, woolly, upright. Racemes long, upright, terminating. Flowers peduncled, golden, ſupported by ſhort acuminate hirſute ſpathes*. Capſule ſuperior, woolly, with the valves having the partition in the middle. Seeds extremely minute, ſubcylindric, rugged all about with irregular tubercles, of a duſky ferruginous colour, at top blunt, and as it were capped, at bottom lengthened out into a membranaceous, pale whitiſh, deeply concave umbilicus; they are faſtened in a horizontal ſituation into the central thickened rim of the partitions*.

Native of China and Cochinchina in wet places. Loureiro ſent it to Europe from the latter in the year 1774.

* Willdenow and Loureiro.

PHLEGMARIA. See *Lycopodium.*

PHLEUM. (Φλεων or φλεως *of Theophraſtus.* Phleos *of Pliny.*)

Lin. gen. n. 77. *Reich. n.* 83. *Schreb. n.* 109. *Gærtn. t.* 1. *Juſſ.* 29. *Fl. ruſt. t.* 5. *Engl. bot. t.* 519.

Claſſ. 3. 2. Triandria Digynia.

Nat. order of *Gramina*, *Graminæ* or *Graſſes.*

GENERIC CHARACTER.

CAL. *Glume* one-flowered, two-valved, oblong, linear, compreſſed, gaping with two cuſps at top: *valves* ſtraight, concave, compreſſed, embracing, equal, truncated, mucronated at the top of the keel.

COR. two valved, ſhorter than the calyx: *outer valve* embracing the *inner* which is ſmaller.

Nectary two-leaved; *leaflets* ovate, concave, acute.

STAM. *Filaments* three, capillary, longer than the calyx. *Anthers* oblong, forked.

PIST. *Germ* roundiſh. *Styles* two, capillary, reflex. *Stigmas* feathered.

PER. none. *Calyx* and *Corolla* incloſing the ſeed.

SEED ſingle, roundiſh.

OBS. *In Ph. arenarium and other ſpecies, the flowers are ovate-lanceolate.*

ESSENTIAL CHARACTER.

Cal. two-valved, ſeſſile, linear, truncated, with a two-cuſped tip. *Cor.* incloſed.

SPECIES.

1. Phleum pratenſe. *Meadow-Cat's-tail Graſs.*

Lin. ſpec. 87. *ſyſt.* 107. *Reich.* 1. 162. *fl. lapp. n.* 26. *ſuec. n.* 56. *hort. cliff.* 22. *Hudſ. angl.* 25. *Wither. arr. ed.* 3. 117. *Relh. cant. n.* 43. *Sibth. oxon. n.* 104. *Fl. ruſt. t.* 5. *Hall. helv. n.* 1528. *Pollich pal. n.* 62. *Gunn. norv. n.* 60. *Leers herborn. n.* 46. *t.* 3. *f.* 1. *Villars dauph.* 2. 62. *Scop. carn. n.* 74. *Neck. gallob.* 34. *Krock. ſilef. n.* 102. *Gmel. ſib.* 1. 89. *n.* 16. *Deſfont. atlant.* 61. *Schreb. gram.* 102. *t.* 14. *f.* 1, 2. *Muſ. ruſſ.* 5. *t.* 1. *f.* 1. *Monti* 49. *ic. n.* 52.

Gramen typhoides aſperum primum. *Bauh. pin.* 4. *prodr.* 10. 1. *theat.* 49. 1.

Gr. typh. maximum ſpica longiſſima. *Bauh. pin.* 4. *Schench. gram.* 60. *t.* 2. *f.* 5. a, b. *Mor. hiſt.* 3. 188. *ſ.* 8. *t.* 4. *f.* 1, 2. *rovo* 3. *Vaill. par.* 83.

Gr. typh. majus. *Ger.* 10. *f.* 1. *emac.* 11. *n.* 1. *Raii hiſt.* 1267. 2. *ſyn.* 398. 1.

Gr. typhoides maximum. *Park. theat.* 1169. *n.* 1. 1170. *f.* 1.——item, medium ſ. vulgatiſſimum. 1170. 2.

Gr. cum cauda muris majoris longa, majus. *Bauh. hiſt.* 2. 472. *ic.*

β. Gr. typh. minus. *Ger.* 10. *n.* & *f.* 2. *emac.* 11. *n.* 2. *t.* 12. *Park. theat.* 1170. *n.* & *f.* 3. *Raii hiſt.* 1267. 3. *ſyn.* 398. 2. *Schreb. gram.* 14. *f.* 3, 4, 5. *Fl. dan. t.* 380. *Leers, t.* 3. *f.* 2.

Gr. typhoides aſperum alterum. *Bauh. pin.* 4. *theat.* 52. *Mor. ſ.* 3.

Gr. cum cauda muris minus. *Bauh. hiſt.* 2. 472. 3. *The ſmaller Cat's-tail Graſs.*

γ. Gr. cum parva cauda muris, radice nodoſa repens. *Bauh. hiſt. Raii hiſt.* 1267. 1.

Gr. nodoſum. *Hudſ. angl* 7.—ſpica parva. *Bauh. pin.* 2. *prodr.* 3. *theat.* 20. *Ger. emac.* 11. *n.* 3.

Spike cylindric, calyx ciliate awned, culm erect.

2. Phleum alpinum. *Alpine Cat's-tail Graſs.*

Lin. ſpec. 88. *ſyſt.* 108. *Reich.* 1. 163. *Willd.* 355. *fl. lapp. n.* 25. *ſuec. n.* 57. *Wither. arr. ed.* 3. 119. *Engl. bot.* 519. *Hall. helv. n.* 1529. *Fl. dan. t.* 213. *Jacqu. vind.* 12. *Scop. carn. n.* 75. *Villars dauph.* 2. 62. *Krock. ſilef. n.* 100. *t.* 20. *a.*

Gr. typhoides alpinum, ſpica brevi denſa & velut villoſa. *Schench. gram.* 64. *t.* 3.

Spike ovate-cylindrical, awns about as long as the glumes.

* Gærtner.

3. Phleom Gerardi.
Lin. ſpec. ed. Willd. 355. *Ger. prov.* 78. *n.* 4. *Alſton. pedem. n.* 2135. *Jacqu. ic. rar.* 2. *t.* 301.
Ph. capitatum. *Scop. carn. n.* 79.
Gr. montanum ſpicatum, tuberoſa radice. *Tournef. inſt.* 519.
Spike roundiſh, glumes ciliate, culm ſimple, ſheaths of the leaves ventricoſe.

4. Phleum nodoſum. *Knobbed-rooted Cat's-tail Graſs.*
Lin. ſpec. 88. *ſyſt.* 108. *Reich.* 1. 163. *Willd.* 355. *Wither. arr. ed.* 3. 118. *Sibth. oxon. n.* 105? *Gærtn. fruct.* 1. 1. *Hall. helv.* 1530. *Pollich pal. n.* 63. *D'Alſo arag. n.* 50. *Barrel. t.* 22. *f.* 1, 2. *Petiv.* 2. *gram. ital.* 4. 2. *Mor. hiſt. row,* 2. 1.
Gr. nodoſum ſpica parva. *Bauh. pin.* 2. *prodr.* 6. *theat.* 20.
Spike cylindrical, culm aſcending, leaves oblique, root bulboſe.

DESCRIPTIONS, *&c.*

1. Root perennial. Culms from one foot to two or three feet in height in moiſt meadows, but in dry ſoils much lower, upright, round, and ſmooth. Leaves lanceolate, pointed, rough on the upper ſurface and along the nerve: ſheath ſtreaked, ſmooth. Spike regularly cylindric, and blunt at the top, ſometimes five or ſix inches long, but uſually, in its wild ſtate, much ſhorter: at firſt ſight it bears ſome reſemblance to that of Fox-tail Graſs; but on examination it will be found very different in form, colour, &c. It is alſo rough, whereas that is ſmooth; and the two horns at the top of the truncate calyx, betray it immediately. The flowers are very cloſe ſet on the ſpike. Pedunclcs very ſhort, ſomewhat branched: pedicels ſcarcely perceptible, confluent at the baſe, two-flowered. Valves of the calyx with briſtle-bearing dots, three-nerved, compreſſed, cuſped; the keel fringed with white, ſpreading, flexuoſe briſtles, alternately longer and ſhorter, the upper ones forked. Outer valve of the corolla five-nerved, naked, ſharpiſh, crenulate. Nectaries ovate, acuminate, ſurrounding the germ at the baſe. Anthers firſt violet, then aſh-coloured [7].

This graſs varies much in ſize, and in the length of the ſpike: it has alſo a leafy ſpike, in common with many other Graſſes, occaſioned by the ſeeds germinating in wet weather without falling. Profeſſor John Martyn obſerved it in this ſtate, during the month of October, on the banks of the river Wandle near Wandſworth. A variety with a bulboſe root is ſet down for a diſtinct ſpecies. This ſwelling of the root is a very equivocal character among Graſſes, and Ph. pratenſe is much given to it; but Linneus's Ph. nodoſum may probably be a diſtinct ſpecies.

Johnſon, in his edition of Gerarde's Herbal, ſays that it may be found with a bulbous root, by the bridge entering into Chelſey field, as one goeth from S. James to little Chelſey.

Meadow Cat's-tail Graſs was much recommended about thirty years ago, under the name of *Timothy Graſs*: and Mr. Wych is ſaid to have brought it from Virginia in 1763. It received this quaint appellation from Mr. Timothy Hanſon, who is ſaid firſt to have brought the ſeeds of it from New York to Carolina. It had then a great character in North America, where it is called *Herd Graſs*. Its reputation here was ſhort-lived, and it has no one good property in which it is not excelled by Fox-tail Graſs; but beſides this it is harſh, and late in its appearance. It is proper only for moiſt lands; in a dry ſoil it makes a pitiful appearance.

Some foreign writers ſpeak well of this graſs; Leers ſays it is very grateful to horſes—Krocker that both horſes and kine are fond of it green and in hay—Villars that it affords excellent forage. Our writers are of a different opinion: Dr. Pulteney ſays, that notwithſtanding the character which this graſs acquired from the recommendation of Rocque, ſheep diſlike it, and cows or horſes are not fond of it—Mr. Swayne, that it is a hard coarſe graſs, of little value for cattle—Mr. Curtis, that it is productive, but coarſe and late, and that it has no excellence which Fox-tail Graſs does not poſſeſs in an equal degree.

In moiſt grounds, kept down very cloſe by ſtock, it might however anſwer, with other coarſe Graſſes; ſuch as *Tall Oat* and *Orchard Graſs* (Dactylis glomerata.)

2. Root perennial, inclined to creeping, and a little tuberous. Stem moſtly ſolitary, ſimple, aſcending, a foot or more in height; leafy below; naked, ſmooth, ſtriated, and very ſtraight above. Leaves broadiſh, ſharp-pointed, rough in the margin. Stipules very ſhort, triangular and leſs abrupt than in the preceding. Sheaths of the upper leaves inflated, and longer than the leaves themſelves. Spikes ſcarcely an inch long, ovate or nearly cylindrical, obtuſe, tinged with dull purple, of which hue the ſtraw and ſheaths of the leaves moſtly partake. Glumes of the calyx ciliated with long hairs, and a little divaricated; keel green: the awns which terminate them being almoſt, if not quite as long as the glumes, diſtinguiſh this ſpecies from *pratenſe*, in which they are very ſhort. Corolla of two unequal valves, of which the largeſt is ribbed and bearded.

Native of the mountains of Lapland, Switzerland, &c. In Britain, it was firſt diſcovered near Garway Moor in Scotland; and probably may be found in ſimilar ſituations in other parts of our iſland, ſince it makes a principal part of the turf in the moſt elevated paſtures of Switzerland. It flowers with us at the end of july [8].

3. Root perennial, with an oblong bulb, tranſverſe and woody as it grows old, rooting deeply with blackiſh fibres ſpringing from the lower part of the tranſverſe tuber. Culm a foot high, ſimple, ſtraight, or procumbent at bottom, above almoſt naked. Root-leaves four or five, much narrower, and ſmooth. Stem-leaves about two, very ſhort, diſtant, with ſheaths much longer than the leaf, large, widened, the upper ſheath extremely ventricoſe. Spike in the flowering plant naked, and remote from the upper leaf, ovate, cloſe, villoſe. Florets ſeſſile: calycine valves equal, keeled, villoſe, manifeſtly ciliate at the ſides, whitiſh, variegated with green ſtains, having a ſhort awn at the tip. One valve of the corolla very wide, truncate, putting forth from the back a little longer awn than is curved inwards: the other linear, very narrow, and ſcarcely viſible. Filaments extremely ſlender. Piſtil roundiſh. This Graſs might be referred to *Alopecurus*, one valve of the corolla being ſcarcely diſcernible; the other convoluted and involving the genitals; but the truncate calyx determines it to be a ſpecies of *Phleum*, of which it has alſo the habit [9].

Native of the high mountains of Provence, Italy, Carniola, Styria, and of the Pyrenees.

4. According to Linneus this reſembles *Ph. pratenſe*; but the root is bulboſe; the culm not upright, but aſcending, and covered by the ſheaths of the leaves; which point in oppoſite directions, and are ſmooth, except at the edges, the ſpike is ſmooth, and the anthers are white.

Mr. Swayne remarks, that the lower joints of the culm ſwell into tubers, but the root is not bulboſe. According to Dr. Withering, there are three or four bulbs on the culm, half an inch aſunder; and two lanceolate ſcales to each bulbous joint; the culm is not only aſcending but knee-bent; and the leaves are narrower than in the common Cat's-tail Graſs.

Notwithſtanding we are told by Hudſon and Leers that this in a rich ſoil becomes *Ph. pratenſe*, I am not quite ſatisfied, ſays Dr. Withering, that theſe reſpectable authors may not have fallen into a miſtake from having conſidered variety γ of the firſt ſpecies as the Ph. nodoſum of Linneus: but that is a very common plant in England, whilſt the true Linnean *nodoſum* is rare.

The only ſpecimen I have ſeen of *Ph. nodoſum*, adds Dr. Withering, was ſent by the Rev. Mr. Swayne, author of the *Gramina paſcua*, a work extremely well calculated to ſpread a uſeful knowledge of the Graſſes amongſt the farmers, as well as to inſtruct the country gentlemen

[7] Leers.

[8] Engl. bot. [9] Gerard.

gentlemen in the beſt means of ameliorating our paſture lands. If my approbation could add any weight to ſo reſpectable a teſtimony to the uſefulneſs of Mr. Swayne's work, I ſhould be happy to give it. He found this Graſs, on the top of a wall about ſix miles from Bath, on the Warminſter road. I am doubtful whether ſome of the ſynonyms which I have given, belong to this, or to variety γ of *Phl. pratenſe*.

PROPAGATION AND CULTURE.

See GRASS.

PHLEUM. See *Alopecurus*, *Cynoſurus*, *Phalaris*.

——— africanum, *Loureiro*, a very different ſpecies from Phleum pratenſe.

——— arenarium. See *Phalaris arenaria*.

——— cochinchinenſe. Probably a ſpecies of Paſpalum. *Willdenow*.

——— Schoenoides. See *Cryphſr.*]

PHLOMIS. (Φλωμος *of Dioſcorides*, Linn. *In Ariſtotle* κλωμος, *in Suidas* φλωμος, *which is the ſame with* φλοιος, *from* φλεγω, *q.* φλογερ.—Φλωμις *and* φλωμιτις, *the ſame with* ουασις. *Dioſcor.* 3. 147. φλοιδις *ſcales*. Lexicon.) *Lin. gen. n.* 723. *Reich. n.* 781. *Schreb. n.* 978. *Tournef. t.* 82. *Juſſ.* 114. *Gærtn. t.* 66.

Claſſ. 14. 1. Didynamia Gymnoſpermia.

Nat. order of *Verticillatæ* or *Labiatæ*.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, oblong, five-cornered, toothed, permanent. *Involucre* below the whorl.

COR. one-petalled, ringent: *tube* oblong: *upper lip* ovate, vaulted, incumbent, compreſſed, villoſe, obſoletely bifid: *lower lip* trifid: the middle ſegment larger, two-lobed, blunt; the ſide ones ſmall, more acute.

STAM. *Filaments* four, concealed under the upper lip, of which two are longer. *Anthers* oblong.

PIST. *Germ* four-parted. *Style* the length and ſituation of the ſtamens. *Stigma* bifid, acute: the lower cleft longer.

PER. none. *Calyx* containing the ſeeds at the bottom.

SEEDS four, oblong, three-ſided.

OBS. *It differs from* Leonurus *by the want of points on the anthers.*

The figure of the calyx and lips of the corolla varies.

ESSENTIAL CHARACTER.

Cal. angular. *Cor.* upper lip incumbent, compreſſed, villoſe.

SPECIES.

1. Phlomis fruticoſa. *Shrubby Phlomis* or *Jeruſalem Sage*. *Lin. ſpec.* 818. *Reich.* 3. 69. *hort. cliff.* 315. *upſ.* 171. *Knipb. cent.* 1. *n.* 61. *Sabb. hort. rom.* 3. *t.* 15.

*. Verbaſcum latis Salviæ foliis. *Baub. pin.* 240. *Raii hiſt.* 511. *Ger. emac.* 767. *f.* 2.

β. anguſtifolia. *Mill. dict. n.* 2.

Salvia fruticoſa lutea latifolia. *Park. theat.* 52. *f.* 11.

Verbaſcum ſylveſtre alterum. *Dod. pempt.* 146.

Narrow-leaved ſhrubby Phlomis.

γ. P. latifolia. *Mill. dict. n.* 3.—capitata lutea grandiflora. *Dill. elth.* 316. *t.* 237. *f.* 306.

P. cretica frut. folio ſubrotundo flore luteo. *Tournef. cor.* 10. *Knipb. cent.* 3. *n.* 71.

Broad-leaved ſhrubby Phlomis.

Leaves roundiſh tomentoſe crenate, involucres lanceolate, ſtem ſhrubby.

2. Phlomis purpurea. *Sharp-leaved Purple Phlomis.* *Lin. ſpec. ed.* 1. 585. *ſyſt. ed.* 10. 1101. *Smith ſpicil.* 6. *t.* 7.

P. fruticoſa Luſitanica, flore purpuraſcente, foliis acutioribus. *Tournef. inſt.* 178. *Barrel. ic.* 405.

Bracteæ lanceolate acute pungent, calyxes five-cornered acuminate, leaves underneath very cloſely woolly.

3. Phlomis italica. *Blunt-leaved Purple Phlomis.* *Lin. ſyſt. ed.* 10. 1102. *Smith ſpicil.* 6.

P. purpurea. *Lin. ſpec. ed.* 2. 818.

P. rotundifolia. *Mill. dict. n.* 13. *fig. t.* 202.

P. fruticoſa, flore purpureo, foliis rotundioribus. *Tournef. inſt.* 178.

Verbaſcum ſubrotundo Salviæ folio. *Baub. pin.* 240.

Salvia fruticoſa, Ciſti folio haud incano, floribus purpureis. *Pluk. phyt. t.* 57. *f.* 6.

Bracteæ lanceolate obtuſe unarmed, calyxes truncate pointleſs, leaves woolly on both ſides.

4. Phlomis Niſſolii.

Lin. ſpec. 819. *ſyſt.* 539. *Reich.* 3. 70. *Mill. fig. t.* 204.

P. orientalis, foliis auriculatis incanis, flore luteo. *Niſſol.*

Root-leaves cordate-ſagittate tomentoſe villoſe on both ſides.

5. Phlomis Lychnitis. *Sage-leaved Phlomis.* *Lin. ſpec.* 819. *Reich.* 3. 70. *Mill. fig. t.* 203. *Sauv. monſp.* 143. *Ger. prov.* 264. 2. *Villars dauph.* 2. 393. *Cluſ. hiſt.* 2. 27. *D'Aſſo arag. n.* 536.

Verbaſcum anguſtis Salviæ foliis. *Baub. pin.* 240. *Raii hiſt.* 511.

V. ſylveſtre, fol. Salviæ tenuifoliæ. *Lob. ic.* 558.—monſpelienſe, flore luteo hiante. *Bauh. hiſt.* 3. 307.

Salvia fruticoſa lutea anguſtifolia. *Park. theat.* 51. *f.* 10.

Stachys prælongo anguſtoq; folio, flore luteo. *Barrel. ic.* 1321.

Leaves lanceolate tomentoſe, floral leaves ovate, involucres briſtle-ſhaped woolly.

6. Phlomis laciniata. *Jagged-leaved Phlomis.* *Lin. ſpec.* 819. *Reich.* 3. 70.

P. orientalis, foliis laciniatis. *Tournef. cor.* 10.

Leaves alternately pinnate, leaflets jagged, calyxes woolly.

7. Phlomis ſamia.

Lin. ſpec. 819. *Reich.* 3. 70. *hort. cliff.* 315. *Deſfont. atlant.* 25.

Leaves ovate tomentoſe underneath, involucres awl-ſhaped ſtrict three-parted.

8. Phlomis Herba venti. *Rough-leaved Phlomis.* *Lin. ſpec.* 819. *Reich.* 3. 70. *hort. cliff.* 315. *upſ.* 171. *Pallas it.* 1. 154. *Ger. prov.* 264. 1. *Villars dauph.* 2. 393. *Sabb. hort.* 3. *t.* 17.

P. narbonenſis Hormini folio, flore purpuraſcente. *Tournef. inſt.* 178. *Garid.* 360.

Marrubium nigrum longifolium. *Baub. pin.* 230.

Herba venti monſpelienſium. *Baub. hiſt.* 3. 854.

Involucres briſtle-ſhaped bifpid, leaves ovate-oblong rugged, ſtem herbaceous.

9. Phlomis tuberoſa. *Tuberous Phlomis.*

Lin. ſpec. 819. *Reich.* 3. 71. *hort. upſ.* 171. *Gærtn. fruct.* 1. 319. *Gmel. it.* 2. *præf. p.* 6. *Pallas it.* 1. 319. *Knipb. cent.* 4. *n.* 61. *Gmel. ſib.* 3. 241. *n.* 73. *Hall. comm. goett.* 1751. *t.* 11. *Amm. ruth.* 49. *n.* 48.

Galeopſis maxima, foliis Hormini. *Buxb. cent.* 1. 4. *t.* 6.

Involucres bifpid awl-ſhaped, leaves cordate rugged, ſtem herbaceous.

[10. Phlomis zeylanica. *White Phlomis.*

Lin. ſpec. 820. *ſyſt.* 539. *Reich.* 3. 71. *fl. zeyl. n.* 227. (Leonurus). *Jacqu. ic. Pluk. phyt. t.* 118. *f.* 4. (Cardiaca).

Herba admirationis. *Rumph. amb.* 6. 39. *t.* 16. *f.* 1.

β. Leonurus indicus. *Lin. ſpec.* 817. *ſyſt.* 539. *Reich.* 71.

Leaves lanceolate ſubſerrate, heads terminating, calyxes eight-toothed.

11. Phlomis caribæa. *Weſt Indian Phlomis.* *Jacqu. collect.* 1. 154. *Ait. hort. kew.* 2. 309.

P. martinicenſis. *Swartz prodr.* 88.

Clinopodium martinicenſe. *Jacqu. amer.* 173. *t.* 177. *f.* 75.

Leaves ovate-lanceolate villoſe, whorls roundiſh very cloſe, involucres briſtle-ſhaped hirſute, ſtem herbaceous.

12. Phlomis urticifolia. *Nettle-leaved Phlomis.* *Vahl ſymb.* 3. 76.

Leaves ovate ſerrate canefcent, involucres awl-ſhaped, calyxes obliquely truncate membranaceous nine-toothed.

13. Phlomis indica. *Eaſt Indian Phlomis.* *Lin. ſpec.* 820. *ſyſt.* 540. *Reich.* 3. 72.

Involucres linear, calyxes one-lipped obtuſe, leaves ovate hairy.

14. Phlomis moluccoides.

Vahl ſymb. 1. 42. *t.* 14. *Forſt. deſcr.* 107. (Clinopodium).

Leaves ovate, involucres briſtle-ſhaped, the lower lip of the calyx rounded large membranaceous.

15. Phlomis

15. Phlomis glabrata.
Vahl symb. 1. 42.
Leaves ovate serrate, lower lip of the calyx produced three-toothed, branches reverſely hairy.

16. Phlomis alba.
Vahl symb. 1. 43. *Forſk. deſcr.* 107.
Leaves ovate ſerrate villoſe, calyxes five-toothed oblique.

17. Phlomis biflora.
Vahl symb. 3. 77. *Herm. zeyl.* 65. (Lamium). *Burm. zeyl.* 140. *t.* 63. *f.* 1. (Leucas).
Leaves ovate ſerrate, calyxes ſolitary oppoſite ten-toothed.

18. Phlomis nepetifolia. *Cat-mint-leaved Phlomis.*
Lin. ſpec. 820. *ſyſt.* 540. *Reich.* 3. 72. *ſuppl.* 274. *hort. cliff.* 312. (Leonurus). *Herm. lugdb.* 115. *t.* 117. (Cardiaca).
Leaves cordate acute ſerrate ſubtomenteſe, calyxes ſix or eight-toothed, upper and lower tooth larger, ſtem herbaceous.

19. Phlomis Leonurus. *Narrow-leaved Phlomis,* or *Lion's-tail.*
Lin. ſpec. 820. *ſyſt.* 540. *Reich.* 3. 72. *mant.* 412. *Berg. cap.* 151. *Knorr. del. hort.* 2. *t.* L. *Sabb. hort.* 3. *t.* 44. *Kniph. cent.* 2. *n.* 54.]
Leonurus africana. *Mill. dict. n.* 1. *Lin. hort. cliff.* 312.
L. capitis bonæ ſpei. *Breyn. cent.* 171. *t.* 86. *Seba muſ.* 1. 22. *t.* 14. *f.* 1.
Leaves lanceolate ſerrate, calyxes ten-cornered ten-toothed pointleſs, ſtem ſhrubby.

20. Phlomis Leonitis. *Dwarf ſhrubby Phlomis.*
Lin. ſyſt. 541. *Reich.* 3. 73. *mant.* 83.
Leonurus minor capitis bonæ ſpei. *Boerh. lugdb.* 1. 180. *Mill. fig. t.* 162. *f.* 1. *Dict. n.* 2.
Stachys africana ſtruteſcens, Meliſſæ foliis, floribus brevioribus phœniceis. *Mor. hiſt.* 3. 383.
Leaves ovate blunt ſubtomenteſe crenate, calyxes ſeven-toothed awned, ſtem ſhrubby.

[21. Phlomis chinenſis.
Retz. obſ. 2. 19. *n.* 59.
Leaves ovate ſerrate tomenteſe-ſilky, calyxes in whorls ten-toothed.

22. Phlomis biloba.
Deſfont. atlant. 2. 25. *t.* 127.
Leaves ovate-oblong tomenteſe, from four to ſix flowers in a whorl, calyxes half-five-cleft, villoſe-wool-bearing, upper lip of the corollas two-parted.]

DESCRIPTIONS, &c.

1. Mr. Miller makes three ſpecies of this. The firſt has a pretty thick ſhrubby ſtalk, covered with a looſe bark, riſing five or ſix feet in height, and dividing into many irregular branches, which are four-cornered and woolly when young, and afterwards become woody; their joints are pretty far aſunder; at each of theſe are placed two roundiſh leaves oppoſite, on ſhort foot-ſtalks; they are woolly on their under ſide. The flowers come out in thick whorls round the ſtalks, and are yellow; they appear from june to auguſt, but the ſeeds very rarely ripen here. It grows naturally in Spain and Sicily.

α. Narrow-leaved Shrubby Phlomis or Jeruſalem Sage does not riſe ſo high as the other; the branches are weaker; the leaves longer, narrower and rounder; the whorls of flowers ſmaller, but the flowers of the ſame ſhape and colour. Theſe have been long propagated in the Engliſh gardens. [Gerarde cultivated them in 1597. He calls them *French Sage* and Sage Mullein.]

β. This has a ſhrubby ſtalk like the former, but much lower, ſeldom riſing more than three feet and a half high, ſending out branches on every ſide. Leaves hoary, broader than either of the former, of an oblong ovate form, on pretty long foot-ſtalks and whiter. Whorls large, with bigger flowers, the upper lip of which is very hairy.

[Dillenius deſcribes the ſtems as from a foot to two feet in height, woody and upright; branches oppoſite, quadrangular, villoſe; leaves thick, at firſt hoary, but afterwards green on the upper ſurface; thoſe on the flowering branches are green on both ſides, on ſhorter and wider petioles, bluntly notched about the edge, but the notches ſcarcely viſible, eſpecially on the upper ones; the ſurface wrinkled and hirſute: the twigs on which the flowers grow are commonly curved in and reclined: whorls on each ſhoot two or ſometimes only one, terminating the uppermoſt branchlets, compoſed of ſeveral broadiſh, hirſute leaflets, and large flowers of a duſky yellow colour, in a wide head.

2. Stem rather ſhrubby, erect, branched, ſlightly quadrangular, covered with thick wool, eſpecially the younger branches. Leaves oppoſite, ovate-oblong, obtuſe, crenate, netted-veined, woolly on both ſides, but moſt on the under one; the lowermoſt cut off at the baſe, but not heart-ſhaped; on long foot-ſtalks; the upper ones on ſhorter. Foot-ſtalks channelled, very woolly: the wool of the whole plant is formed like little ſtars, as in various ſpecies of this genus and ſeveral others. Stipules none. Whorls ſeſſile in the axils of the upper leaves, conſiſting of ſix or eight flowers. Bractes ſeveral, as long as the calyx, ſomewhat imbricate, ending in a hard, ſharp point, rigid, concave, three-nerved, externally woolly, but ſmooth on the inſide. Flowers ſeſſile, the ſame ſize with thoſe of *P. fruticoſa*, but pale purple. Calyx regular, a little ſwelling, five-cleft in the margin; ſegments ſharp-pointed, erect: externally woolly, hairy at the angles and in the orifice. Corolla twice as long as the calyx: tube contracted in the middle: upper lip large, downy, hairy in the margin; lower lip nearly twice as long, hanging down, paler, veined, five-lobed; its outermoſt lobes acute, middle ones ſmall and obtuſe, odd one largeſt and notched at the tip. Seeds priſmatic, dotted at the top, brown.—This plant has a ſoapy ſmell, like the preceding.

This is the true *Ph. purpurea*, intended by Linneus, in the firſt edition of *Species Plantarum*, but confounded in the ſecond edition with another ſpecies, which is the next following.

Native of Spain. Barrelier found it in Valentia. Dr. Smith had it from the garden of John Coakley Lettſom, M. D. It flowers in june.

3. The leaves are leſs diſtinctly veined on the under ſide, in this ſpecies, than in the real *P. purpurea*, and almoſt equally woolly on both ſides, inſtead of being green on the upper; the lowermoſt are heart-ſhaped at the baſe. Bractes blunt, by no means pungent; half as long as the calyx, which is alſo remarkably obtuſe.

Native of Italy and Portugal. Common in our gardens[b]; and cultivated by Mr. Edward Morgan about 1661. It flowers from june to auguſt[c].

4. Root-leaves deeply cordate, oblong, bluntiſh: floral-leaves ovate. Calyxes hirſute. Involucres none[d].]

Root perennial, as are alſo the lower leaves, which do not ariſe from the root immediately, but ſtand in cluſters upon ſhort trailing woolly branches; they are placed without order on very long downy foot-ſtalks; are heart-ſhaped, downy on both ſides, four inches long, and two broad towards the baſe. Stalks annual, ſlender, a foot high. Leaves ovate-lanceolate, decreaſing in ſize to the top, where they are not half an inch long. Theſe ſtalks generally ſend out two ſide branches oppoſite, near the bottom, and from this diviſion to the top, have thin whorls of yellow flowers, not cloſely joined together, but each flower ſtands ſeparate. Calyxes ovate, very downy, and cloſely ſhut up. The flowers appear in june and july, but there are ſeldom any ſeeds produced in England. It grows naturally in the Archipelago, and alſo in Spain, from both which countries Mr. Miller received the ſeeds. [It was cultivated by him in 1759.

5. This has the habit of the firſt ſpecies, but the leaves are narrower; the corolla is ſcarcely bigger than the calyx. Involucres linear, erinite with long hairs[e].

Root hard, thick, twiſted. Leaves oblong, ruſſet-coloured, cottony. Flowers of a golden colour, handſome and very apparent[f]. Bractes cordate, acuminate. The dry leaves are uſed for wicks[g]; hence the trivial *Lychnitis*, and the Spaniſh *Candilera*.]

Root perennial. Root-leaves long, narrow, woolly, in tufts, inveloped at their baſe in a common covering, ſoft to the touch and procumbent. Stalks annual, ſlender,

[b] Smith. [c] Herb. kew. [d] Linn. ſpec. & ſyſt. [e] Linn. ſpec. [f] Villars. [g] D'Aſſo.

ſlender, near two feet long; their joints are far aſunder; at each of theſe is a pair of ovate leaves, embracing the ſtalk with their baſe. The whorls of flowers are alſo encompaſſed by theſe leaves, and within them is a radiated briſtly involucre, which covers the flowers. The lower leaves remain all the year.

Native of the South of France, Italy, Spain [and Portugal.—Cultivated in 1731, by Mr. Miller. It flowers from june to auguſt[b].]

6. Root perennial. Stalk a foot and half high, decays in the autumn, but the lower leaves continue all the year. Stem-leaves of the ſame ſhape with the lower, but ſmaller. Flowers in whorls: calyx downy: corolla of a duſky purple colour: they appear in june, but the ſeeds do not ripen here. It was diſcovered by Tournefort in the Levant, whence he ſent the ſeeds to the Royal garden at Paris. [It was cultivated in 1731, by Mr. Miller[c].

7. Stem upright, hirſute, four-cornered, herbaceous. Leaves very large, petioled, cordate, crenate, ſharpiſh; above greeniſh, with very ſhort, ſcarcely viſible villoſe hairs ſcattered about; beneath tomentoſe, hoary. Petioles hirſute. Whorls many-flowered, axillary and terminating. Braſtes (involucre) numerous, rigid, mucronate, pungent, pubeſcent, the length of the calyx; which is pubeſcent, coriaceous, five-cleft, ten ſtreaked, the ſtreaks alternately larger and ſmaller; ſegments awl-ſhaped, mucronate: corolla violet-coloured, of the ſame ſize and ſhape with that of *P. fruticoſa*, villoſe-tomentoſe[d].]

Root perennial. Root-leaves three inches long, and an inch and half broad at the baſe, ending in acute points; they are downy, and have five ſtrong veins on their under ſides. Stalks annual, a foot and half high: at each joint a pair of leaves of the ſame form, but ſmaller. Involucres cut into ſegments, and cloſely ſhut. This and the preceding, having been truſted to warm borders, were deſtroyed by the ſevere winter of 1740.

[It was diſcovered by Tournefort in the iſland of Samos; and Deſfontaines has ſince found it in Barbary. Mr. Miller cultivated it in 1743.]

8. Root perennial: when large it ſends up a great number of ſquare ſtalks, covered with a hairy down, and having ſeſſile leaves on them. Corolla bright purple.

[Root blackiſh. Leaves wide, crenate, duſky, and not very villoſe. Stems high and branched. Flowers red, duſky, and ſomewhat villoſe. A variety with yellow flowers is figured in Ruſſell's Aleppo, *t.* 16.

Native of the South of France; Miller adds Italy; Linneus, Perſia and Tartary. D'Aſſo found it in Arragon.—It was cultivated in 1683, by Sutherland; and flowers from july to ſeptember[e].

9. Root tuberous. Teeth of the calyx ſpreading, hiſpid. Helmet of the corolla toothed[f]. Seeds ovate-oblong, ſomewhat convex on one ſide, angular on the other, truncate above and hiſpid with white ſtar-like briſtles, acuminate below, ſmooth, ferruginous or deep cheſtnut colour: navel at the baſe of the ſeed ſimple[g].]

Stalks purple, four-cornered, five or ſix feet high. Leaves ſix inches long, three broad at the baſe, terminating in acute points, deeply crenate on their edges. Flowers of a pale purple colour and hairy: they appear in june and july, and the ſeeds ripen in ſeptember; ſoon after which the ſtalks decay; but the roots will abide many years.

[Native of Siberia. Cultivated in 1759 by Mr. Miller[h].

10. Stem of the ſame ſtature with *Ph. Leonurus*, two feet high, upright, herbaceous, four-cornered, blunt. Leaves ſubtomentoſe, marked with lines, petioled, remotely ſubſerrate, longer than the internodes. Whorls ſubterminating with an awl-ſhaped involucre. Calyx obliquely truncate downwards, obſcurely ſeven-toothed; the uppermoſt tooth longer. Corolla white: upper lip hirſute, very ſhort, vaulted, cloſed, entire, lower large, ſpreading, bifid; the intermediate ſegment wide, ſomewhat plaited; the middle ſcarcely three-lobed. Anthers black; compreſſed, truncate. One ſtigma ſeſſile above the ſtyle behind the tip; another lower, awl-ſhaped acute[i].

Native of the Eaſt Indies. Introduced in 1777, by John Gerard Koenig, M. D. It is a biennial plant; flowering from june to october[k].

11. Root branching. Stem four-cornered, more ſlender than a reed, ſoft and villoſe. Branches oppoſite, axillary, ſimple, almoſt erect, one longer than the other. Leaves ovate-lanceolate, bluntiſh, ſerrate, petioled, veined, ſoft and villoſe. Whorls at the leaves ſeſſile, roundiſh, many-flowered, denſe. Involucre and calyx hirſute. It is an annual plant, two feet high, upright, and without any ſcent[l].

Native of the Weſt Indies. Introduced in 1781, by Mr. Francis Maſſon. It flowers from july to ſeptember[m].

12. Stem herbaceous, upright, branched, villoſe when magnified, caneſcent. Leaves petioled, acute at the baſe, deeply and bluntly ſerrate, thin, villoſe when magnified, paler underneath, attenuated by a terminating ſerrature. Whorls many-flowered. Involucres the length of the calyx, keeled, hairy, ciliate, flexible, terminated by a whitiſh unarmed ſpinule. Flowers ſmall. Calyxes angular: with the three upper teeth ſmall, acute, almoſt equal, ſcarioſe at top. Helmet of the corolla extremely hirſute. It reſembles *Ph. indica*, but the ſtem and leaves are caneſcent with very minute hairs, and not tomentoſe; the leaves have deep ſerratures, flat not wrinkled and tomentoſe underneath, with ſmaller calyxes.

Found in the Eaſt Indies by Koenig, and in Arabia by Forſkahl[n].

13. Leaves ovate, ſerrate, attenuated at the baſe, petioled, clothed with ſoft hairs, green. Whorls towards the top two or three, thick, ſurrounded with erect, linear, keeled, villoſe involucres. Calyxes tubular, oblong, ten-cornered, at the exterior margin of the mouth produced into a three-toothed lip; at the back, where the margin is very ſhort, are two very minute teeth. Corolla like that of *Leonurus Cardiaca*: helmet very hirſute, with white hairs, longer, hoary: lower lip trifid; the middle ſegment twice as long as the two others. It is very nearly allied to *Ph. zeylanica*. Native of the Eaſt Indies[o].

14. This is a ſhrub with villoſe branches. Leaves petioled, bluntly ſerrate, quite entire at the baſe, pubeſcent above, villoſe underneath, very ſoft, green. Petiole very ſoftly villoſe, the length of the leaf. Whorls remote, fourteen-flowered. Involucres five or ſeven-parted, the ſame length with the tube of the calyx, villoſe. Calyx tubular, ten-grooved, villoſe, two-lipped: upper lip ſhort, oblong, acute; lower three-lobed, lateral lobes ſhort, the middle one four times as wide as the reſt, rounded, membranaceous, netted-veined. Corolla under the upper ſegment of the calyx and twice as long: tube the ſame width with the tube of the calyx and villoſe: helmet very hirſute at the margin: lower lip three-lobed, the length of the helmet. Filaments the length of the corolla.

15. Stem herbaceous, upright, acutely angular, the angles and joints reverſe-haired. Leaves petioled, ſpreading, bluntly ſerrate, quite entire at the baſe, ſomewhat hairy, acute. Whorls remote, ſix or eight-flowered. Involucres minute, four-parted, briſtle-ſhaped, ſomewhat pungent, ſmooth, yellowiſh at top, four times ſhorter than the calyx; which is ten-ſtreaked, ſmooth, nearly bell-ſhaped, oblique produced below into a three-toothed lip: teeth equal briſtle-ſhaped, ſeven-toothed at top. Corolla as in the preceding.

16. Stem herbaceous, ſmooth, bluntly angular: branches hairy at top. Leaves blunt, having three or four ſerratures in the middle on each ſide, hairy: petiole ſhorter than the leaf. Whorls remote, ten or twelve-flowered. Involucres four-cleft: ſegments briſtle-ſhaped, the length of the calyx: which is bell-ſhaped, pubeſcent: teeth awl-ſhaped, unarmed, the two upper ones larger. Corolla twice as long as the

[b] Hort. kew. [c] Idem. [d] Deſfontaines. [e] Hort. kew. [f] Linn. ſpec. [g] Gærtner. [h] Hort. kew. [i] Linn. ſyſt. [k] Hort. kew. [l] Jacquin. [m] Hort kew. [n] Vahl. [o] Linn. ſpec. & ſyſt.

calyx:

calyx: helmet very hirſute about the margin: lower lip three-lobed; the middle lobe produced, oblong.

Theſe three ſpecies were found in Arabia by Forſkahl.

17. Stem herbaceous, branched, ſlender, weak, ſlightly villoſe. Leaves petioled, bluntly ſerrate, (ſerratures four or five,) blunt, appearing thinly haired when examined by a magnifier, eſpecially at the ſides. Peduncles very ſhort, ſolitary, oppoſite, one-flowered. Bractes two, very ſmall, at the baſe of the calyx; which is ſtreaked and ten-toothed. Helmet of the corolla hairy, extremely hirſute on the margin.—Native of the Eaſt Indies [e].

18. Stem ſimple, upright, quadrangular, blunt. Leaves deeply and ſomewhat bluntly ſerrate, green. Petioles the length of the leaves. Whorls few towards the top, globular, many-flowered. Calyx ſomewhat hairy, cylindrical, with a ſpiny and very ſharp border, the upper tooth twice as large as the reſt, and from four to ſix ſmall teeth. Corolla villoſe, of the ſame appearance and colour with that of *Ph. Leonurus*, but one-third only of the ſize: upper lip roundiſh, long, emarginate; lower ſhort, trifid, even. Involucre awl-ſhaped, reflex. Filaments cohering in pairs. Stigmas two, filiform, the upper ſhorter by half than the under [f].

It is an annual plant, native of the Eaſt Indies; flowering here in ſeptember and october. Sir Joſeph Banks introduced it in 1778 [g].

19. This is a very handſome plant when it is in flower. Corolla of a tawny or golden colour and ſhining like ſilk: upper lip long, tomentoſe, ciliate, quite entire; lower lip ſhort, naked, membranaceous, the lateral ſegments reflex, dry, the intermediate one trifid, emarginate in the middle. Filaments ſnow-white. Anthers two-lobed, yellow, having globular meal ſprinkled over them at the baſe only [h].

It riſes with a ſhrubby ſtalk ſeven or eight feet high, ſending out ſeveral branches, which are four-cornered. Leaves about three inches long, and half an inch broad, hairy on their upper ſide, and veined on their under. The branches have each two or three ſeſſile whorls of flowers towards the ends. There is a variety of it with variegated leaves.

[Native of the Cape of Good Hope. Cultivated in 1712, in the botanic garden at Cheliea. It flowers from october to december [i].

20. It bears much reſemblance and is nearly allied to the preceding; but the leaves are ovate, not lanceolate, and more tomentoſe. It differs materially from *Leonurus*, by its awned calyxes. It agrees more with *Phlomis nepetifolia*, but differs from that in having a ſhrubby ſtalk; ſmall, blunt, more compact leaves; and the neck of the calyx rough-haired. The corollas agree in all the three ſpecies [k].]

Stalk ſhrubby, ſquare, three feet high. Branches four-cornered, in pairs. Leaves rough on their upper ſide, veined and pale green on their under. Corolla neither ſo long, nor ſo deep coloured as in the preceding.

Boerhaave and Miller frequently received the ſeeds from the Cape of Good Hope, where it grows naturally.—[It appears from the herbariums in the Britiſh Muſeum, that it was cultivated in 1713, by the Dutcheſs of Beaufort. It flowers in june and july [l].

21. Stem ſhrubby, with four-cornered hiſpid branches. Leaves ovate and ſubcordate, petioled. Whorls five or ſix-flowered, axillary; the flowers pedicelled. Calyx funnel-form, ten-ſtreaked, with ten awned teeth. Corolla white, with the upper lip compreſſed, hirſute on the outſide, eſpecially about the margin; lower three-lobed, almoſt naked.—Native of China [m].

22. Stems herbaceous, upright, branched, villoſe-woolly, with blunt corners. Lower leaves petioled; upper ſeſſile, ovate-oblong or ſometimes ovate, wrinkled, ſcarcely crenate, caneſcent, with branched and very ſhort villoſe hairs. Whorls diſtinct. Flowers ſeſſile or on very ſhort pedicels. Bractes linear filiform, the length of the calyx, covered with long cloſe caneſcent villoſe hairs. Calyx oblong, round; ſegments linear, acute. Corolla the ſize of that in the eighth ſpecies, purple, villoſe-tomentoſe on the outſide: upper lip bowed, compreſſed, often deeply two-parted; lower three-lobed, the two lateral lobes ſhort, ſmall, the middle one very large, ovate, blunt, grooved. It is a very beautiful ſpecies, and quite diſtinct from the reſt.—Native of the kingdom of Algiers [n].]

[e] Vahl. [f] Linn. ſyſt. [g] Hort. kew.
[h] Linn. mant. & ſyſt. [i] Hort. kew. [k] Linn. mant.
[l] Hort. kew. [m] Retzius.

PROPAGATION AND CULTURE.

1. This was formerly kept in pots, and houſed in winter with other exotic plants; but of late years it has been planted in the open air, where it is ſeldom injured by cold, unleſs in very ſevere winters; ſo it is intermixed with other ſhrubs of the ſame growth in ſhrubberies, where it adds to the variety; for as theſe ſhrubs retain their hoary woolly leaves all the year, they make a good appearance in winter; and their yellow flowers, which continue great part of the ſummer, being intermixed with their hoary leaves, have a good effect.

Theſe ſhrubs ſhould have a dry ſoil and a warm ſheltered ſituation, otherwiſe they will not live in the open air. They may be planted among Ciſtuſes of all the different ſorts, the ſhrubby Moon-trefoil, ever-green Cytiſus, Wormwood-tree, and ſome other exotic ſhrubs of the ſame countries, which require a warm ſituation and a dry ſoil, being too tender for open plantations which are expoſed to ſtrong cold winds; and as they are not of long duration, they are better when ſeparated from trees and ſhrubs which continue many years; for theſe rarely live above twelve or fourteen years in dry ground, and not more than half ſo long in cold moiſt land, or where they are not well ſheltered.

They are propagated by cuttings, which if planted in a bed of light earth in april, juſt before the plants begin to ſhoot, and covered with mats to ſcreen them from the ſun every day, as alſo to obſerve when the ground is dry to give them water gently, they will get good roots in about two months or ten weeks, when they may be carefully taken up, and tranſplanted into a nurſery, where they may remain one year, and then be tranſplanted to the places where they are deſigned to ſtand, for theſe plants will not bear tranſplanting at a greater age.

2. 3. May be propagated and treated in the ſame way, only the latter is more impatient of cold: [indeed both are deſtroyed by ſevere froſt in the open border, and therefore muſt have ſome protection there occaſionally, or a plant may be kept in the green-houſe to guard againſt accidents.]

4. 5. May be propagated by ſlips in the ſpring. They require a dry ſoil and warm ſituation: [with the ſame care recommended for the two preceding ſorts in ſevere froſt.]

6. 7. Theſe are propagated by offsets from the root, which it ſends out very ſparingly; and very ſharp winters ſometimes kill the plants in open borders.

8. This may be increaſed by parting the roots in autumn, when the ſtalks begin to decay, that the plants may get root before the froſt comes on; but it ſhould not be parted oftener than every third or fourth year, if it be expected to have many flowers. It is hardy, and may be planted in expoſed places, but not in moiſt ground.

9. Sow the ſeeds upon an eaſt border in the ſpring; keep the plants clean from weeds, and in the autumn tranſplant them where they are to remain; the following ſummer they will produce flowers and ſeeds. This ſort is very hardy, and will thrive in almoſt any ſoil or ſituation.

[10 to 18. Being natives of hot countries, muſt be kept in the bark ſtove. Several of them are annuals, and can only be propagated by ſeeds procured from the countries where they grow.]

19. 20. Theſe are increaſed by cuttings planted in july; after the plants have been ſo long expoſed to the

[n] Deſfontaines.

open

open air as to harden the ſhoots, they will take root very freely. Plant them in a loamy border with an eaſtern aſpect, and if they are covered cloſely with a bell or hand glaſs to exclude the air, and are ſhaded from the ſun, it will forward their putting out roots; but when they begin to ſhoot, raiſe the glaſſes to prevent their drawing up weak, and by degrees expoſe them to the open air. As ſoon as they have taken good root take them up, and plant each in a ſeparate pot, filled with ſoft loamy earth, and placed in the ſhade, till the plants have taken new root; then remove them to a ſheltered ſituation, where they may remain till october, when they muſt be removed into the green-houſe, and afterwards treated as the Myrtle and other hardy green houſe plants; obſerving to water the 19th ſort plentifully.

All the ſpecies are ornamental plants, when properly diſpoſed in gardens and plantations; there is generally a ſucceſſion of flowers on them for two or three months, and their hoary leaves, interminxed with plants whoſe leaves are green, make a good contraſt.

PHLOMIS. See *Ballota*.

PHLOX (*of Pliny.* Φλοξ *of Theophraſtus. Flamma.*)
Lin. gen. n. 214. *Reich. n.* 229. *Schreb. n.* 284. *Gærtn. t.* 62. *Juſſ.* 136. Lychnidea. *Dill. elth.* 166.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Rotaceæ. Polemonia*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, cylindrical, ten-cornered, five-toothed, acute, permanent.
COR. one-petalled, ſalver-ſhaped. *Tube* cylindrical, longer than the calyx, narrower below, curved in. *Border* flat, five-parted: *ſegments* equal, blunt, ſhorter than the tube.
STAM. *Filaments* five, within the tube of the corolla, two longer, one ſhorter. *Anthers* in the throat of the corolla.
PIST. *Germ* conical. *Style* filiform, the length of the ſtamens. *Stigma* trifid, acute.
PER. *Capſule* ovate, three-cornered, three-celled, three-valved.
SEEDS ſolitary, ovate.

ESSENTIAL CHARACTER.

Cor. ſalver-ſhaped. *Filam.* unequal. *Stigma* trifid. *Cal.* priſmatical. *Capſ.* three-celled, one-ſeeded.

SPECIES.

1. Phlox paniculata. *Panicled Lychnidea.*
Lin. ſpec. 216. *Reich.* 1. 431. *Willd.* 839. *Mill. fig. t.* 205. *f.* 2.
Lychnidea folio falcino. *Dill. elth.* 205. *t.* 166. *f.* 203.
Leaves lanceolate flat rugged at the edge, ſtem even, corymbs panicled; ſegments of the corolla rounded.
2. Phlox undulata. *Waved-leaved Lychnidea.*
Ait. hort. kew. 1. 205.
Leaves oblong-lanceolate ſomewhat waved rugged on the edge, ſtem even, corymbs panicled, ſegments of the corolla ſomewhat retuſe.
3. Phlox ſuaveolens. *White-flowered Lychnidea.*
Ait. hort. kew. 1. 206.
Leaves ovate-lanceolate even all over, ſtem very ſmooth, raceme panicled.
4. Phlox maculata. *Spotted-ſtalked Lychnidea.*
Lin. ſpec. 216. *ſyſt.* 199. *Reich.* 1. 431. *Willd.* 840. *mant.* 335. *Kalm. it.* 3. 153. *Jacqu. hort.* 2. 58. *t.* 127. *Gærtn. fruct.* 299.
Leaves oblong-lanceolate ſmooth, ſtem ſomewhat rugged, raceme corymbed.
5. Phlox pilоſa. *Hairy-leaved Lychnidea.*
Lin. ſpec. 216. *Reich.* 1. 431. *Willd.* 840. *Rati ſuppl.* 490. (Lychnoides). *Pluk. phyt. t.* 98. *f.* 1. (Lychnidea).
Leaves lanceolate villoſe, ſtem upright, corymb terminating.
6. Phlox carolina. *Carolina Lychnidea.*
Lin. ſpec. 216. *Reich.* 1. 432. *Willd.* 841. *Mart. dec.* 1. 10.
Leaves lanceolate even, ſtem rugged, corymbs ſubfaſtigiate,

7. Phlox glaberrima. *Smooth Lychnidea.*
Lin. ſpec. 217. *Reich.* 1. 432. *Willd.* 841. *hort. cliff.* 63. *Gron. virg.* 21. *Kalm. it.* 3. 153.
Lychnidea folio melampyri. *Dill. elth.* 203. *t.* 166. *f.* 202.
Leaves linear-lanceolate ſmooth, ſtem upright, corymb terminating.
8. Phlox divaricata. *Early-flowering Lychnidea.*
Lin. ſpec. 217. *Reich.* 1. 432. *Willd.* 841. *Mill. fig.* 137. *t.* 205. *f.* 1. *Curt. magaz.* 163.
Leaves broad-lanceolate, the upper ones alternate, ſtem bifid, peduncles in pairs.
9. Phlox ovata. *Ovate-leaved Lychnidea.*
Lin. ſpec. 217. *Reich.* 1. 433. *Willd.* 842. *Pluk. mant. t.* 348. *f.* 4. (Lychnidea).
Leaves ovate, flowers ſolitary.
[10. Phlox ſubulata. *Awl-leaved Lychnidea.*
Lin. ſpec. 217. *Reich.* 1. 433. *Willd.* 842. *Curt. magaz.* 411. *Pluk. phyt. t.* 98. *f.* 2. (Lychnidea).
Leaves awl-ſhaped hiſpid, flowers oppoſite.
11. Phlox fibirica. *Siberian Lychnidea.*
Lin. ſpec. 217. *ſyſt.* 800. *Reich.* 1. 433. *Willd.* 842. *amoen.* 2. 342. *Gmel. ſib.* 4. 87. *t.* 46. *f.* 2.
Leaves linear villoſe; peduncles in threes.
12. Phlox ſetacea. *Briſtle-leaved Lychnidea.*
Lin. ſpec. 217. *Reich.* 1. 433. *Willd.* 842. *Curt. magaz.* 415. *Pluk. phyt. t.* 98. *f.* 3. (Lychnidea).
Leaves briſtle-ſhaped ſmooth, flowers ſolitary.]

DESCRIPTIONS, &c.

1. Stalk ſmooth, of a light green, about two feet high, ſending out a few ſide branches. Leaves near three inches long, and one broad in the middle, of a dark green and ſeſſile. Flowers in a terminating corymb, compoſed of many ſmaller bunches, which have each a diſtinct footſtalk, and ſupport a great number of flowers, which ſtand on ſhort ſlender pedicels. Calyx ſhort, cut almoſt to the bottom into five narrow acute ſegments. Corolla pale purple, appearing late in july, and often followed by ſeeds which ripen in autumn.

[It is a large, lofty plant. Stem obtuſe. Leaves broad-lanceolate; the margin roughened with very minute ſcattered prickles. Corymbs cluſtered into an umbel, with very numerous flowers, pubeſcent in the tube[f].

Native of North America. Cultivated in 1732, by James Sherard, M.D. It flowers in auguſt and ſeptember[g].

2. Flowers blue. Native of North America. Cultivated in 1759 by Mr. Miller. It flowers in july and auguſt[h].

3. Flowers white, moderately ſweet-ſcented. Native of North America. Introduced about 1766, by Peter Collinſon, Eſq. It flowers in july and auguſt[i].]

4. Stalks upright, of a purpliſh colour, cloſely covered with white ſpots, and about three feet high. Leaves about three inches long and one broad at their baſe, ending in acute points. Towards the upper part of the ſtalks are ſmall branches oppoſite, each terminated by a ſmall bunch of flowers; but on the top of the principal ſtalk is a long looſe ſpike of flowers, compoſed of ſmall bunches from the axils at each joint; each cluſter having one common peduncle near an inch long, but the pedicels are ſhort. The flowers are of a bright purple colour, and appear late in july; if the ſeaſon be temperate, or the ſoil moiſt, they will continue in beauty great part of auguſt, but rarely perfect ſeeds in England.

[Stem a foot high, round, ſomewhat rugged, purple with green dots. Leaves rugged about the edge, ſpreading, ſeſſile, alternate except the loweſt, which are oppoſite. Raceme terminating, with alternate peduncled corymbs, ſeparated by leaflets. Calyx five-cornered. Corolla violet[k]. Capſule ovate, with a diaphanous membranaceous calyx, marked with five green ribs, ſmooth: partitions growing to the axis, contrary to the valves, and ſeparating from them, but not from the axis, when ripe. Seed one in each cell, elliptic, plano-convex, with a raiſed ſtreak on the

[f] Linn. ſpec. [g] Hort. kew. [h] Idem. [i] Idem. [k] Linn. mant.

plane part, brown, the ſurface irregular as it were gnawn'.

Native of North America. Cultivated in 1759, by Mr. Miller. It flowers in auguſt [n].]

5. Stalks about a foot high. Leaves narrow lanceolate, ending in acute points, ſeſſile, a little hairy. Calyx cut into acute ſegments almoſt to the bottom. Tube of the corolla ſlender and pretty long, cut at top into five ovate ſpreading ſegments. Flowers light purple, appearing at the end of june, but ſeldom followed by ſeeds in England.—Native of North America. [Cultivated by Mr. Miller in 1759.

6. This reſembles the next ſpecies, but the ſtem is three times as high, and ſomewhat rugged. Leaves wider, and ovate-lanceolate. Corymb conſiſting of numerous flowers, with ſeveral pedunculs from the uppermoſt axils of the leaves, erect and faſtigiate into a ſort of corymb. Tube of the corolla even [o].]

Stems near two feet high. Leaves ſtiff, ſhining, ſeſſile, entire, with the edges reflexed. The upper part of the ſtem has generally two ſlender ſide branches, and is terminated by a head of flowers growing in whorls, but the whorls are ſo near, as to appear one corymb. Calyx ſhort, deeply cut into five acute ſegments. Tube of the corolla long, cut at top into five roundiſh ſpreading ſegments. The corolla is of a deeper purple than that of the next ſpecies, and the flowers appear a fortnight later. It grows naturally in Carolina; [was cultivated here before 1728; and flowers from july to ſeptember [p].]

7. Stalks near a foot and half high, dividing into three or four ſmall branches towards the top, each terminated by a corymb of flowers. Lower leaves oppoſite, three inches long, and near half an inch broad at the baſe, ending in long acute points, ſmooth and ſeſſile; the upper ones are alternate. Tube of the corolla twice the length of the calyx; ſegments of the border roundiſh, ſpreading, of a light purple colour. The flowers appear in june, but unleſs the ſeaſon proves warm are not ſucceeded by ſeeds in England.

[Native of North America. Cultivated in 1731, by Mr. Miller. It flowers from june to auguſt [q].

8. Stems almoſt upright, ſimple and then divided into two branches. Leaves oppoſite on a ſimple ſtem in five oppoſitions, ſoftiſh, rugged; the upper ones alternate. Flowers from the partings of the ſtem and the axils of the alternate leaves, two together on ſeparate pedicels. Calyx five-parted. Corollas pale blue, with a crooked tube [r].]

Stalks ſlender, and apt to incline to the ground if they are not ſupported; they divide into ſeveral ſmall ſpreading branches. The lower part of the ſtalks have broad-lanceolate leaves, alternate and ſeſſile: on the branches they are narrower and oppoſite. The flowers grow in looſe bunches at the ends of the branches: they have ſhort calyxes, cut into five narrow, acute ſegments; the tube of the corolla is long and ſlender; the ſegments are broad and obcordate, of a light blue colour. The flowers appear at the end of may or the beginning of june, but are rarely ſucceeded by ſeeds in England.

It grows naturally in North America; [and was cultivated in 1788, by Mr. Miller [s]. According to the Kew catalogue, it flowers from april to june. Mr. Curtis ſays it flowers in may, with the yellow Alyſſum; that it is neither of ſo long duration, nor ſo ornamental as ſome of the other ſpecies; that it ſeldom exceeds a foot in height, and on this account may be regarded as a ſuitable rock-plant.]

9. Stalks two or three, ſlender, about nine inches high. Leaves rough, hairy, an inch and half long, and three quarters of an inch broad in the middle, oppoſite, on very ſhort foot-ſtalks. The flowers come out ſingly at the top of the ſtalk, have very ſlender tubes, with a border of five roundiſh, ſpreading ſegments. They are of a light purple colour, and appear in july, but are not followed by ſeeds in England.

Native of Maryland, and other parts of North America. [Cultivated by Mr. Miller in 1759.

10. If this plant be left to itſelf, the ſtems trail on the ground, the young ſhoots are of a reddiſh hue, and ſlightly villoſe; the leaves are edged with hairs, oppoſite, recurved, and rather fleſhy, producing others from their axils, becoming as the plant grows old of a browniſh colour, which renders the plant in ſome degree unſightly. Flowers from one to three or four in an umbel, drooping before they expand: calyxes villoſe; corolla pale purple or fleſh colour, with an eye of dark but brilliant purple, diſpoſed in a ſtar-like form [t]: the lobes are emarginate, and the tube twice as long as the calyx.

Native of Virginia [u]. The flowers appear at the beginning of may; they are extremely pretty but delicate, requiring ſhelter during the period of their flowering, which is ſhorter than in moſt of the other ſpecies [x].

11. Lobes of the corolla rounded, entire. Calyxes of the ſame length with the tube of the corolla. Stems from two inches to a hand in height. Leaves linear, hairy below, ſucculent, bright green. From the uppermoſt axils pedunculs from two to four, about an inch long, hirſute, each bearing one purple flower (varying to white with purple ſtreaks), with from four to ſix ſegments, which are rounded and often emarginate.—Native of Siberia [y].

12. The ſtalks, when ſupported, riſe to the height of about a foot; but, if left to themſelves, trail upon the ground: they are thickly covered with leaves, which are longer, and for the moſt part finer and more hairy than thoſe of *ſubulata*; and in the month of may the whole plant forms a highly ornamental buſh of purple flowers. It was brought from Carolina, by Mr. John Fraſer, in 1788 [z].

All theſe beautiful plants are natives of North America, except the eleventh, which is indigenous of the north of Aſia. They are herbaceous perennials, and moſt of them tolerably hardy.]

PROPAGATION AND CULTURE.

Theſe plants delight in a moiſt rich ſoil, not too ſtiff, in which they will grow tall, and produce much larger bunches of flowers than in dry ground; for when the ſoil is poor and dry, they frequently die in ſummer, unleſs they are duly watered.

They are generally propagated by parting their roots, becauſe they do not often produce ſeeds in England. The beſt time for this is in autumn, when their ſtalks begin to decay. Theſe roots ſhould not be divided into ſmall heads, if they are expected to flower well the following ſummer; nor ſhould they be parted oftener than every other year, becauſe when they are often removed and parted, it will greatly weaken the roots, ſo that they will ſend out but few ſtalks, and thoſe will be ſo weak as not to riſe their uſual height, and the bunches of flowers will be much ſmaller.

When the roots are tranſplanted and parted, it will be a good way to lay ſome old tan, or other mulch, upon the ſurface of the ground about their roots, to prevent the froſt from penetrating the ground; for as they will have put out new fibres before winter, the froſt when it is ſevere often kills the fibres, whereby the plants ſuffer greatly, and are ſometimes deſtroyed.

The firſt, ſixth, and ſeventh ſorts, propagate pretty faſt by their ſpreading roots, but the others increaſe but ſlowly this way, therefore the beſt method to propagate them is by cuttings; and if theſe with the fourth ſort are deſired in plenty, they may be eaſily obtained by this method. The beſt time to plant the cuttings, is about the end of april or the beginning of may, when the ſhoots from the roots are about two inches high; theſe ſhould be cut off cloſe to the ground, and their tops ſhould be ſhortened; then they muſt be planted on a border of light loamy earth, and ſhaded from the ſun until they have taken root; or if they are planted pretty cloſe together, and covered with bell or hand-glaſſes, ſhading them every day from the ſun,

[n] Gærtner. [o] Hort. kew. [p] Linn. ſpec. [q] Hort. kew. [r] Idem. [s] Linn. ſpec. [t] Hort. kew. [u] Curtis. [x] Linn. ſpec. [y] Curtis. [z] Linn. ſpec. & Gmel. [a] Curtis.

they will put out roots in five or six weeks; but when they begin to ſhoot, the glaſſes ſhould be gradually raiſed to admit the free air to them, otherwiſe they will draw up weak and ſoon ſpoil: as ſoon as they are well rooted, the glaſſes ſhould be taken off, and the plants inured to the open air; then they ſhould be ſoon after removed into a bed of good ſoil, planting them about ſix inches diſtance every way, obſerving to ſhade them from the ſun, and water them duly till they have taken new root; after which, if they are kept clean from weeds, they will require no other care till autumn, when they ſhould be tranſplanted into the borders of the flower-garden, where they are deſigned to remain.

If ſome of theſe plants are put into pots, and ſheltered under a hot-bed frame in winter, they will flower ſtrong the following ſummer; and theſe may be placed in court-yards, or other places near the habitation, when they are in beauty, and being mixed with other flowers will be very ornamental.

[10. This ſort ſhould be frequently renewed by cuttings, which ſtrike readily. It may be ſuffered to grow either in its natural procumbent way, or be made to appear to more advantage by training it to a ſtick.

12. This ſpecies, like moſt of the others, is eaſily raiſed from cuttings, which ſhould be ſtruck early in the ſpring, to make them become flowering plants the next ſeaſon. To have this plant in perfection, it is neceſſary to renew it thus yearly, old plants being leſs productive of flowers, and leſs perfect in their foliage.

In mild winters, this ſpecies like many other plants from Carolina, will live abroad; but requires the ſhelter of a frame, rather than more tender treatment in ſevere froſt [r].

PHOENIX. (Φοινιξ *of Theophraſtus and Dioſcorides. So named from the red colour of the ſpathe; ſuppoſed to be derived from* φονος, *which ſometimes ſignifies blood.*)
Lin. gen. n. 1224. *Reich. n.* 1339. *Schreb. n.* 1694. *Kempf.* 2. *Gærtn.* 9. *Juſſ.* 38. Elate. *Muſ. cliff.* 12. Katoundel. *Hort. mal.* 3. 23.
Appendix Palmæ. (Dioecia Triandria.)
Nat. order of *Palmæ* or *Palms.*

GENERIC CHARACTER.

* *Male Flowers.*

CAL. *Spatha* univerſal one-valved. *Spadix* branched.
Perianth three-parted, very ſmall, permanent.
COR. *Petals* three, concave, ovate, ſomewhat oblong.
STAM. *Filaments* three, very ſhort. *Anthers* linear, four-cornered, the length of the corolla.

* *Female Flowers* on a different plant, *or on the ſame ſpadix.*

CAL. as in the Male.
PIST. *Germ* roundiſh. *Style* awl-ſhaped, ſhort. *Stigma* acute.
PER. *Drupe* ovate, one-celled.
SEED ſingle, bony, ſubovate, with a longitudinal groove.

ESSENTIAL CHARACTER.

Cal. three-parted. *Cor.* three-petalled.
MALE. *Stam.* three.
FEM. *Piſt.* one. *Drupe* ovate.

SPECIES.

1. Phoenix dactyliſera. *Date Palm-tree.*
Lin. ſpec. 1658. *ſyſt.* 985. *Reich.* 4. 634. *mat. med.* 232. *hort. cliff.* 482. *upſ.* 306. *fl. zeyl. n.* 390.
Palma. *Bauh. hiſt.* 1. 351. *Dod. pempt.* 819. *Raii hiſt.* 1352. *Ger.* 1333. *emac.* 1517.
P. vulgaris. *Park. theat.* 1545. 1. *r.* 1546. *f.* 1, 2.]
P. major. *Bauh. pin.* 506.
P. dactyliſera. *Mill. dict. n.* 1. [—major vulgaris. *Jonſt. dendr. Sloan. jam.* 2. 111. *Brown. jam.* 344. 8.
P. hortenſis mas & femina. *Kempf. amoen.* 688. *t.* 1, 2. *f.* 1, 2.—*exot.* 668, 686. *t.* 1, 2. *f.* 2, 16, 11.
Dactylis Palma. *Blackw. t.* 202.
Fronds pinnate, leaves folded together enſiform.
2. Phoenix farinifera.
Roxb. corom. 3. 53. *t.* 74.
Fronds pinnate: leaves narrower more pointed.]

[r] Curtis.

4

DESCRIPTIONS, *&c.*

1. This riſes to a great height in the warm countries; the ſtalks are generally full of rugged knots, which are the veſtiges of the decayed leaves, for the trunks of theſe trees are not ſolid like other trees, but the centre is filled with pith, round which is a tough bark full of ſtrong fibres while young, but as the trees grow old, this bark hardens and becomes woody; to this bark the leaves are cloſely joined, and in the centre riſe erect, being cloſely folded or plaited together, but after they are advanced above the ſheath which ſurrounds them, they expand very wide on every ſide the ſtem, and, as the older leaves decay, the ſtalk advances in height. The leaves of theſe trees, when grown to a ſize for bearing fruit, are ſix or eight feet long, and may be termed branches (for the trees have no other) theſe have narrow long leaves (or pinnæ) ſet on alternately their whole length. The ſmall leaves or lobes are towards the baſe three feet long, and little more than one inch broad; they are cloſely folded together when they firſt appear, and are wrapped round by brown fibres or threads, which fall off as the leaves advance, making way for them to expand; theſe never open flat, but are hollow like the keel of a boat, with a ſharp ridge on their back; they are very ſtiff, and, when young, of a bright green, ending with a ſharp black ſpine. Theſe trees have male flowers on different plants from thoſe which produce the fruit, and there is a neceſſity for ſome of the male trees to grow near the female trees to render them fruitful; or, at leaſt, to impregnate the germ, without which the ſtones, which are taken out of the fruit, will not grow. Moſt of the old authors, who have mentioned theſe trees, affirm, that unleſs the female or fruit-bearing Palm-trees have the aſſiſtance of the male, they are barren; therefore in ſuch places where there are no male trees near the female, the inhabitants cut off the bunches of male flowers when they are juſt opened, and carry them to the female trees, placing them on the branches near the female flowers to impregnate them; which, they all agree, has the deſired effect, rendering the trees fruitful, which would otherwiſe have been barren. Pere Labat in his account of America, mentions a ſingle tree of this kind, growing near a convent in the iſland of Martinico, which produced a great quantity of fruit, which came to maturity enough for eating; but, as there was no other tree of this kind in the iſland they were deſirous to propagate it, and accordingly planted great numbers of the ſtones for ſeveral years, but not one of them grew; therefore after having made ſeveral trials without ſucceſs, they were obliged to ſend to Africa, where theſe plants grew in plenty, for ſome of the fruit; the ſtones of which they planted, and raiſed many of the plants. He then conjectures, that the ſingle tree before-mentioned, might be probably ſo far impregnated by ſome neighbouring Palm-trees of other ſpecies, as to render it capable of ripening the fruit, but not ſufficient to make the ſeeds prolific.

The flowers of both ſexes come out in very long bunches from the trunk between the leaves, and are covered with a ſpatha, (or ſheath) which opens and withers; thoſe of the male have ſix ſhort ſtamina, with narrow four-cornered anthers filled with farina. The female flowers have no ſtamina, but have a roundiſh germ, which afterwards becomes an oval berry, with a thick pulp incloſing a hard oblong ſtone, with a deep furrow running longitudinally. The bunches of fruit are ſometimes very large.

[The fruit of this tree makes a great part of the diet of the inhabitants of Arabia and part of Perſia [a]. In Upper Egypt many families ſubſiſt almoſt entirely upon it. They make a conſerve of it with ſugar; and even grind the hard ſtones in their hand-mills for their camels. In Barbary they turn handſome beads for pater noſters of theſe ſtones [b]. The Date is ſaid to ſtrengthen the ſtomach and inteſtines, to ſtop looſeneſſes and promote expectoration, for which purpoſe it is given in pectoral decoctions. It is alſo recommended in the piles given in red wine [b].

[a] Ives. [b] Haſſelquiſt. [b] Long. jam. 742.

From

From the leaves of the tree they make baſkets or bags in Barbary. In Egypt they make fly-flaps of them, and bruſhes to clean their ſofas or cloaths. The hard boughs are uſed as fences to their gardens, and cages to carry their fowls to market. The trunk is ſplit for the ſame purpoſes, and is even uſed in ſmall buildings. It ſerves likewiſe for firing. The threads of the web-like integument between the boughs make ropes and the rigging of ſmaller veſſels[e].

The juice of the Date-tree is procured, by cutting off the head or crown of the more vigorous plant, and ſcooping the top of the trunk into the ſhape of a baſin; where the ſap, in aſcending lodges itſelf, at the rate of three or four quarts a day, during the firſt week or fortnight; after which the quantity daily diminiſhes, and at the end of ſix weeks or two months the tree becomes dry, and ſerves for timber or fire-wood. This liquor, which has a more luſcious ſweetneſs than honey, is of the conſiſtence of a thin ſyrup, but quickly becomes tart and ropy, acquiring an intoxicating quality, and giving, upon diſtillation an agreeable ſpirit or *Araky*, which is the general name for all hot liquors extracted by the Alembeck[d].

Native of the Levant, &c. Cultivated by Mr. Miller in 1731[e].

2. The little trunk this has is only about one, or at moſt two feet high, and ſo entirely enveloped in the leaves that it is never ſeen, the whole appearing like a large round buſh. Leaves pinnate, as in the preceding, and nearly as large: leaflets longer, narrower, more pointed, and of a much deeper green. Spathe axillary, one-valved; inſide concave, fitting the trunk or baſe of the leaf immediately within it: this concavity is bordered by two ſharp edges, outſide convex, there ſplitting longitudinally, leathery, ſmooth, withering. Spadix erect, much branched: branches ſimple, ſpreading in every direction; eight to twelve inches long. Filaments ſix, inſerted into a fleſhy globular receptacle: anthers oblong, erect. Petals in the female flowers orbicular, equal, rigid, calyx-like, laſting. Berry (or drupe) ſhining black, ſize of a large Kidney-bean; the pulp ſweet and mealy, but in ſmall quantity. Seed cartilaginous, of the ſame ſhape with the berry, grooved longitudinally, pretty ſmooth, brown on the outſide, light-grayiſh white within: on the middle of the back a ſmall elevation, under which is an oblong pit containing the embryo.

Native of Coromandel, in dry barren ground, chiefly on ſandy lands at a ſmall diſtance from the ſea. It flowers in january and february; and the fruit is ripe in may. This the natives eat as gathered from the buſh, without any preparation.

The leaflets are wrought into mats; the common petioles are ſplit into three or four, and uſed for making ordinary baſkets of various kinds; but they are not ſo proper for this purpoſe as the Bamboo.

The ſmall trunk, when diveſted of its leaves, and the ſtrong brown fibrous web that ſurrounds the trunk at their inſertions, is generally fifteen or eighteen inches long, and ſix in diameter, at the thickeſt part; its exterior or woody part conſiſts of white fibres matted together, which envelope a large quantity of a farinaceous ſubſtance, uſed as food by the natives in times of ſcarcity; but to ſeparate this from the fibres, the trunk is ſplit into ſix or eight pieces, then dried, beaten in wooden mortars, and afterwards ſifted: the reſt of the preparation conſiſts in boiling the meal into a thick gruel, or as it is called in India, congee. It ſeems to be much leſs nutritive than Sago, and is leſs palatable, being conſiderably bitter when boiled; but probably by more care in the preparation, or by varying the mode, it might be improved. It certainly deſerves attention, for during the end of 1790, and beginning of 1791, it ſaved many lives, Rice being very dear, and at times not to be had[f].

Loureiro has a dwarf Phoenix or Date Palm, which he names *Ph. puſilla*, and characterizes by its having ſix ſtamens, and a dwarf trunk. He deſcribes the trunk as two feet high, thick and rugged. Fronds ſix feet long, unarmed, pinnate, reclined: leaflets long, awl-ſhaped, plaited, ſmooth. Univerſal ſpathe many-valved. Spadix upright, ſhort, corymbed. Calyx of both flowers three-parted and very ſhort. Petals three, ovate-oblong, curved, ſpreading. Filaments, in the male flowers none, but ſix oblong anthers, equal to the corolla. Style in the female flowers ſhort, with a ſimple ſtigma. Drupe ovate, four lines in length, fleſhy, black, ſmooth, ſweet, with a ſingle, oblong, ſolid, horny nucleus, having a longitudinal groove on one ſide, and a ſmall circle on the other.

Native of Cochinchina, on mountains ſix leagues from Hüeá the capital of Cochinchina, in rocky places near ſtreams[g].

Loureiro refers to *Burm. zeyl.* 183. *Herm. parad.* 361. and *Kæmpf. amoen.* 667.

It ſeems in moſt reſpects not to differ from that deſcribed above from Coromandel.]

PROPAGATION AND CULTURE.

Theſe plants may be eaſily produced from the ſeeds taken out of the fruit, (provided they are freſh) ſown in pots filled with light rich earth, and plunged into a moderate hot-bed of tanner's-bark, which ſhould be kept in a moderate temperature of heat, and the earth frequently refreſhed with water.

When the plants are come up, they ſhould be each planted into a ſeparate ſmall pot filled with the ſame light rich earth, and plunged into a hot-bed again, obſerving to refreſh them with water, as alſo to let them have air in proportion to the warmth of the ſeaſon, and the bed in which they are placed. During the ſummer they ſhould remain in the ſame hot-bed, but in the beginning of auguſt let them have a great ſhare of air to harden them againſt the approach of winter; for if they are too much forced, they will be ſo tender as not to be preſerved through the winter without much difficulty, eſpecially if you have not the conveniency of a bark-ſtove to keep them in.

The beginning of october remove the plants into the ſtove, placing them where they may have a moderate ſhare of heat (theſe being ſomewhat tenderer, while young, than after they have acquired ſome ſtrength; though indeed they may be ſometimes preſerved alive in a cooler ſituation, yet their progreſs would be ſo much retarded, as not to recover their vigour the ſucceeding ſummer. Nor is it worth the trouble of raiſing theſe plants from ſeeds, where a perſon has not the conveniency of a ſtove to forward their growth; for where this is wanting, they will not grow to any tolerable ſize in twenty years.

Whenever theſe plants are removed, (which ſhould be done once a year) be very careful not to cut or injure their large roots, which is very hurtful to them; but clear off all the ſmall fibres which are inclinable to mouldineſs, for if theſe are left on, they will in time decay, and hinder the freſh fibres from coming out, which will greatly retard the growth of the plants.

The ſoil in which theſe plants ſhould be placed, muſt be compoſed in the following manner, viz. half of light freſh earth taken from a paſture ground, the other half ſea-ſand, and rotten dung or tanner's bark in equal proportion; theſe ſhould be carefully mixed, and laid in a heap three or four months at leaſt before it is uſed, but ſhould be often turned over to prevent the growth of weeds and to ſweeten the earth.

You ſhould alſo obſerve to allow them pots proportionable to the ſizes of the plants; but you muſt never let them be too large, which is of worſe conſequence than if they are too ſmall: During the ſummer ſeaſon they ſhould be frequently refreſhed with water, but you muſt be careful not to give it in too great quantities; and in winter they muſt be now and then refreſhed, eſpecially if they are placed in a warm ſtove, otherwiſe they will require very little water at that ſeaſon.

Theſe plants are very ſlow growers, even in their native countries, notwithſtanding they arrive to a great magnitude; for it has been often obſerved by ſeveral of the old inhabitants of thoſe countries, that the

[a] Haſſelquiſt. [b] Shaw, 142. [c] Roxburgh. [d] Hort. kew. [e] Loureiro.

plants of ſome of theſe kinds have not advanced two feet in height in ten years; ſo that when they are brought into theſe countries, it cannot be expected they ſhould advance very faſt, eſpecially where there is not due care taken to preſerve them warm in winter. But however ſlow of growth theſe plants are in their native countries, yet they may be with us greatly forwarded, by placing the pots in a hot-bed of tanner's bark, which ſhould be renewed as often as is neceſſary, and the plants always preſerved therein both winter and ſummer, obſerving to ſhift them into larger pots as they advance in growth, as alſo to ſupply them with water properly, with which management I have had ſeveral of them come on very faſt; for I obſerve the roots of theſe plants are very apt to root into the bark, if their pots remain a conſiderable time without ſhifting, where they meet with a general warmth, and the moiſture ariſing from the fermentation of the bark preſerves their fibres plump and vigorous; but although the leaves grow tall in a few years with this management, yet it is long before the plants come to have any ſtems. There are plants in the Chelſea garden, whoſe leaves are ſeven feet long, which were raiſed from ſeeds more than twenty years ago, and their ſtems are not two feet high, ſome of which have produced ſmall bunches of male flowers.

PHOENIX. See *Andropogon* and *Poa*.

PHORMIUM. (Φορμιον *is the name of a plant in Ariſtotle's hiſtory of animals, of which they made mats. Forſter has given this name to a plant of New Zealand, uſed for the like purpoſe.*)

Lin. gen. Schreb. n. 578. *p.* 799. *Forſt. gen. t.* 24. *Juſſ.* 52. Chlamydia. *Banks. Gærtn. t.* 18.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Coronariæ*. *Aſphodeli*, Juſſ.

GENERIC CHARACTER.

CAL. none.

COR. *Petals* ſix, aſcending obliquely, converging into a tube, oblong, connate at the baſe, unequal: *three outer* acute, more raiſed on the back; *three inner* longer, rounded at the top, concave.

STAM. *Filaments* ſix, filiform, aſcending, longer than the corolla. *Anthers* erect, ſubtriquetrous.

PIST. *Germ* bluntly three-ſided. *Style* filiform, aſcending, a little ſhorter than the ſtamens. *Stigma* ſimple.

PER. *Capſule* oblong, three-ſided, the angles grooved, acuminate, three-celled, three-valved.

SEEDS very many, oblong, compreſſed.

ESSENTIAL CHARACTER.

Cal. none. *Cor.* ſix-petalled, the three inner petals longer. *Capſ.* oblong, three-ſided. *Seeds* oblong, compreſſed.

SPECIES.

1. Phormium tenax. *New Zealand Flax-plant.*

Lin. ſyſt. 336. *Suppl.* 204. *Forſt. flor. auſtral. n.* 153. *Cook voy.* 2. 96. *t.* 23. *J. Miller ic. t.* 2.

Chlamidia tenaciſſima. *Gærtn. fruct.* 1. 71.

DESCRIPTION, *&c.*

Leaves many. Inflorescence branched. Flowers of the Hyacinth. Capſule ſuperior, twiſted, attenuated outwards; valves bearing the partition in the middle; on the outſide of a ſmoaky or blackiſh colour, very finely ſtriated; within poliſhed, ſhining, pale bay colour. Seeds bracted, ſurrounded by a membranaceous margin, wrinkled, dark, ſhining, incumbent, faſtened in a double row to the inner margin of the partitions [b].

Native of New Zealand, Norfolk iſland, and other iſlands in the Southern ocean.

The inhabitants of New Zealand make a thread of the leaves, with which the women weave a variety of fine matting for cloathing and other uſes. Many other plants of the Liliaceous tribe might be applied to the ſame purpoſes [i]. It is now manufactured in Norfolk iſland: canvas and other coarſe linen cloth having been wove with the thread [k].

Phormium Aloides, bulbiferum and Hyacinthoides. See *Lachenalia*.

PHRAGMITES. See *Arundo*.

[b] Gærtner. [i] Linn. ſuppl. [k] Collins's New South Wales.

PHRYMA.

Lin. gen. n. 738. *Reich. n.* 796. *Schreb. n.* 994. *Gærtn. t.* 75. *Juſſ.* 117. Leptoſtachya. *Mitch.* 11.

Claſſ. 14. 1. Didynamia Gymnoſpermia.

Nat. order of *Perſonatæ*. *Labiatæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, cylindric, gibbous above at the baſe, ſtriated, with a two-lipped mouth: *upper lip* narrow, longer; with three, awl-ſhaped, converging teeth; *lower lip* blunt, bifid.

COR. one-petalled, ringent: *tube* the length of the calyx: *upper lip* ſhorter, ſubovate, emarginate, ſtraight: *lower lip* larger, more ſpreading, trifid, the middle ſegment more produced.

STAM. *Filaments* four, two on each ſide, the upper ones ſhorter. *Anthers* roundiſh, converging, in the throat of the corolla.

PIST. *Germ* oblong. *Style* filiform, the length of the ſtamens. *Stigma* blunt.

PER. none. *Calyx* unchanged, grooved, converging.

SEED ſingle, oblong, roundiſh, grooved on one ſide: (ovate, drawn to a point at top, obſcurely five-cornered. *G.*

ESSENTIAL CHARACTER.

Seed one.

SPECIES.

1. Phryma Leptoſtachya.

Lin. ſpec. 838. *ſyſt.* 548. *Reich.* 3. 103. *Suppl.* 277. *amœn.* 3. 19. *Gærtn. fruct.* 363. *Pluk. amalth. t.* 380. *f.* 5. *Gron. virg.* 92. (Verbena.)

Leptoſtachia. *Mich. gen.* 9.

Leaves ovate ſerrate petioled, calyx one-leafed, five-cleft.

2. Phryma dehiſcens.

Lin. ſyſt. 548. *Suppl.* 277.

Calyxes finally opening longitudinally.

DESCRIPTIONS, *&c.*

1. Stem a foot high, obtuſely quadrangular, ſmoothiſh, brachiate. Leaves oppoſite, acute, ſomewhat rugged, groſsly ſerrate. Spikes terminating, ſolitary. Flowers oppoſite, remote. Bractes by threes, awl ſhaped: the lower of the ſame length with the calyx; the lateral ones erect, ſhort. Flowers horizontal, as they fade immediately drooping. Calyx cylindrical, striated, hard: upper lip purple on the outſide. Corolla white, the form of *Dodartia*, but ſmall [l]. Allied to *Verbena* [m].

The calyx, which is cloſed, bent down, pyramidal-awl-ſhaped, five-grooved and unequally five-toothed, ſerves for a pericarp: three briſtle-ſhaped recurved teeth, and two others that are membranaceous and ſtraight ſhut up the mouth. There is but one ſeed, and that of a brown-bay colour [n].—Native of North America.

2. Stems ſuffruticoſe at the baſe: branches oppoſite, few, upright. Leaves oppoſite, ſubpetioled, wedge-ſhaped, rounded above, equal in length and breadth, nine-toothed, thickiſh. Racemes terminating, ſolitary, quite ſimple, upright, with very ſhort pedicels. Bractes minute, awl-ſhaped, ſolitary. Calyx five-grooved, truncate, five-toothed. Corolla like that of Vervain: border five-cleft, ſmall, almoſt equal; with rounded ſegments. Seed filling up the calyx and burſting it, compreſſed a little, ſubcylindric, compreſſed-wedge-ſhaped at the baſe, two-celled. The calyx and corolla are regular in this; and as the fruit ripens, the calyx burſts longitudinally, expoſing the ſeed naked, almoſt as in *Lythrum Cuphea*. This plant is aſſociated with the preceding, till it is better known; though it has a different appearance. Thunberg found it at the Cape of Good Hope [o].

PHRYNIUM. (Φρυνιον, *a kind of ſhrub. From* φρυνος, *a ſpecies of frog.*)

Lin. ſyſt. ed. Willd. 17. *Swartz obſ.* 123. *ſub Pontederia*. Phyllodes. *Loureiro*, 13. 16.

Claſſ. 1. 1. Monandria Monogynia.

GENERIC CHARACTER.

CAL. *Spathes* many, acute, imbricate, many-flowered.

Perianth three-leaved: *leaflets* awl-ſhaped, erect, equal.

[l] Linn. ſpec. [m] Linn. ſuppl. [n] Gærtner. [o] Linn. ſuppl.

Cor. tubular: *border* seven-cleft; the three *outer* segments acute, almoſt equal, reflex: the four *inner* obtuſe, erect, unequal.

Nectary long, channelled, erect. (The four inner ſegments belong properly to this.)

Stam. *Filament* one, awl-ſhaped, ſhort, growing to the ſide of the nectary at bottom. *Anther* oblong, irregular, emitting little balls of pollen diſtinguiſhable by the naked eye.

Pist. *Germ* ovate-three-cornered, inferior. *Style* thick, ſhort, rather longer than the ſtamen. *Stigma* concave, inclined towards the anther.

Per. *Capſule* obtuſely triangular, three-celled.

Seed. *Nuts* three, ovate, ſmooth.

ESSENTIAL CHARACTER.

Cal. three-leaved. *Pet.* three equal, growing to the long channelled tube of the nectary. *Nect.* tube filiform, border four-parted. *Capſ.* three-celled. *Nuts* three.

SPECIES.

1. Phrynium capitatum.
Lin. ſpec. ed. Willd. 17.
Phyllodes Placentaria. *Laur. cochinch.* 13. *ed. Willd.* 17.
Pontederia ovata. *Lin. ſpec.* 412. *Reich.* 2. 13.
Nâru-kila. *Rheed. mal.* 11. 67. *t.* 34. *Raii ſuppl.* 573.

DESCRIPTION, *&c.*

Perennial, ſtemleſs, five feet high; on four fifths of it are very ſtraight, round, regular ſhining petioles. Leaves a foot long, ovate-oblong, ſharp, quite entire, flat, obliquely grooved, ſmooth, coriaceous. Flowers white, collected into a large, ſeſſile, hemiſpherical cyme, burſting out below the middle of the gaping petiole, (from which circumſtance Loureiro named it *Phyllodes*.) Involucre two-leaved, collecting together partial, many-flowered ſpathes. The root tubercled with fibres, horizontal, creeping. The germ is commonly abortive [a].

Native of Malabar, China and Cochinchina, in ſhady wet places.

It differs entirely from *Pontederia*, with which Linnæus aſſociated it; and approaches to *Thalia* ſo near that it may perhaps be a ſpecies of that genus [b]. According to Willdenow it is moſt nearly allied to *Maranta*, differing from it only in the ſeven-cleft border of the corolla, and the long channelled tube of the nectary.

The leaves are uſed for wrapping up cakes, &c. in the oven, whence Loureiro's trivial name of *placentaria*: when tender, and not yet unfolded, they infuſe them in ſpirit of rice or ſugar diluted with three times its quantity of water, to make vinegar [c].

PHYLICA. (Φυλικη *is the name of an evergreen ſhrub in Theophraſtus.*)
Lin. gen. n. 266. *Reich. n.* 285. *Schreb. n.* 359. *Gærtn. t.* 24. *Juſſ.* 381.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Dumoſæ*. *Rhamni*, Juſſ.

GENERIC CHARACTER.

Cal. *Common Receptacle* of the fructifications collecting the flowers into a diſk.
Perianth proper one leafed, five-cleft, turbinate, mouth villoſe, permanent.

Cor. none. *Scalelets* five, acuminate, one at the baſe of each diviſion of the calyx, converging.

Stam. *Filaments* five, very ſmall, inſerted under the ſcalelet. *Anthers* ſimple.

Pist. *Germ* at the bottom of the corolla. *Style* ſimple. *Stigma* obtuſe.

Per. *Capſule* roundiſh, three-grained, three-celled, three-valved, crowned.

Seeds ſolitary, roundiſh, gibbous on one ſide, angular on the other.

ESSENTIAL CHARACTER.

Perianth five-parted, turbinate. *Pet.* none, but five ſcales deſcending the ſtamens. *Capſ.* tricoccous, inferior.

[a] Loureiro. [b] Swartz. [c] Loureiro.

SPECIES.

1. Phylica ericoides. *Heath-leaved Phylica.*
Lin. ſpec. 283. *Reich.* 1. 546. *Willd.* 1108. *hort. cliff.* 70. *Gærtn. fruct.* 1. 114. *Berg. cap.* 49. *Thunb. prodr.* 44. *Fabric. helmſt.* 233. *Knipb. cent.* 1. *n.* 62. *Curt. magaz.* 224. *Comm. hort.* 2. 1. *t.* 1. (Alaternoides.)
Leaves linear in whorls.

[2. Phylica lanceolata. *Lance-leaved Phylica.*
Lin. ſpec. ed. Willd. 1108. *Thunb. prodr.* 44.
Leaves ſcattered lanceolate tomentoſe underneath, heads terminating hirſute.

3. Phylica bicolor. *Two-coloured Phylica.*
Lin. ſyſt. 235. *Reich.* 1. 547. *Willd.* 1108. *mant.* 208.
P. ſtrigoſa. *Thunb. prodr.* 44?
Leaves linear pubeſcent, common calyxes ſhorter than the corolla.

4. Phylica capitata. *Downy Phylica.*
Lin. ſpec. ed. Willd. 1109. *Thunb. prodr.* 45. *Burm. afr.* 121. *t.* 44. *f.* 3.
P. pubeſcens. *Ait. kew.* 1. 268?
Leaves linear-lanceolate villoſe, bractes woolly, heads terminating.

5. Phylica eriophoros. *Pale-flowered Phylica.*
Lin. ſpec. ed. Willd. 1109. *Ait. kew.* 1. 268. *Berg. cap.* 52. *Thunb. prodr.* 44. *Pluk. amalth. t.* 445. *f.* 1. (Elichryſum).
Leaves linear ſomewhat hairy tomentoſe underneath rolled back at the edge, heads terminating, flowers tomentoſe.]

6. Phylica plumoſa. *Woolly-leaved Phylica.*
Lin. ſpec. 283. *ſyſt.* 235. *Reich.* 1. 547. *Willd.* 1109. *Gærtn. fruct.* 1. 115. *Thunb. prodr.* 45. *Seba theſ.* 1. 38. *t.* 23. *f.* 4. 5. (Ricinus). *Pluk. mant. t.* 342. *f.* 3. (Chamælea). *Comm. prælud.* 63. *t.* 13. (Alaternoides).
Leaves linear-awl-ſhaped: the uppermoſt hirſute.

[7. Phylica villoſa. *Villoſe-leaved Phylica.*
Lin. ſpec. ed. Willd. 1109. *Thunb. prodr.* 44.
Leaves linear the upper ones villoſe, flowers in racemes.

8. Phylica imberbis. *Beardleſs Phylica.*
Lin. ſyſt. 235. *Reich.* 1. 547. *Willd.* 1109. *mant.* 209. *Berg. cap.* 51. *Thunb. prodr.* 44. *Breyn. cent.* 18. *t.* 7. (Sanamundæ). *Seba muſ.* 2. *t.* 49. *f.* 5. (Erica).
Leaves linear obtuſe rugged, flowers terminating pubeſcent.

9. Phylica ſtipularis. *Stipuled Phylica.*
Lin. ſyſt. 235. *Reich.* 1. 548. *Willd.* 1110. *mant.* 208. *Thunb. prodr.* 44. *Ait. kew.* 3. 488. *Burm. afr.* 117. *t.* 43. *f.* 2. (Chamælea).
Leaves linear ſtipuled, flowers five-horned.

10. Phylica pinifolia. *Pine-leaved Phylica.*
Lin. ſyſt. 235. *Willd.* 1110. *ſuppl.* 153. *Vahl ſymb.* 3. 41. *Thunb. prodr.* 44.
Beckea africana. *Burm. prodr.* 12.
Leaves acerose flat on both ſides very ſmooth, flowers panicle-racemed.

11. Phylica cordata. *Heart-leaved Phylica.*
Lin. ſpec. 283. *Reich.* 1. 549. *Willd.* 1111. *Comm. rar.* 62. *t.* 12.
Leaves cordate-ovate ſpreading, ſtem proliferous.

12. Phylica dioica. *Dioecous Phylica.*
Lin. ſyſt. 235. *Reich.* 1. 548. *Willd.* 1111. *mant.* 342.
Leaves cordate, flowers dioecous.]

13. Phylica buxifolia. *Box-leaved Phylica.*
Lin. ſpec. 283. *Reich.* 1. 548. *Willd.* 1111. *Knipb. cent.* 2. *n.* 56. *Burm. afr.* 119. *t.* 44. *f.* 1. *Herm. afr.* 6. (Chamælea).
Leaves ovate ſcattered and by threes tomentoſe underneath.

[14. Phylica ſpicata. *Spiked Phylica.*
Lin. ſyſt. 235. *Willd.* 1111. *ſuppl.* 153. *Ait. kew.* 1. 269. *Thunb. prodr.* 45.
Leaves oblong cordate acuminate tomentoſe underneath, ſpikes cylindrical, flowers the length of the bractes.

15. Phylica calloſa. *Callous-leaved Phylica.*
Lin. ſyſt. 235. *Willd.* 1112. *ſuppl.* 153. *Ait. kew.* 1. 269. *Thunb. prodr.* 45.
Leaves oblong cordate acuminate hairy tomentoſe underneath, flowers in a ſort of head.

16. Phylica paniculata. *Panicled Phylica.*
Lin. ſpec. ed. Willd 1112.
Leaves ovate mucronate ſmooth above ſhining tomentoſe underneath, racemes leafy panicled.

17. Phylica imbricata. *Imbricate Phylica.*
Lin. ſpec. ed. Willd. 1112. *Thunb. prodr.* 45.
Leaves cordate-ovate ſmooth, flowers in racemes.

18. Phylica racemoſa. *Racemed Phylica.*
Lin. ſyſt. 235. *Willd.* 1112. *mant.* 209. *Thunb. prodr.* 45.
Beckea cordata. *Burm. prodr.* 12.
Leaves ovate ſmooth, flowers ſimple panicle-racemed.

19. Phylica parviflora. *Small-flowered Phylica.*
Lin. ſyſt. 235. *Willd.* 1113. *mant.* 209. *Berg. cap.* 48. *Thunb. prodr.* 44.
Leaves awl-ſhaped acute rugged ſomewhat hairy, branches panicle-many-flowered.

20. Phylica ſecunda.
Thunb. prodr. 44.
Leaves linear mucronate ſmooth, heads terminating birſute.]

DESCRIPTIONS, &c.

1. This is a low buſhy plant, ſeldom riſing more than three feet high; the ſtalks are ſhrubby and irregular, dividing into many ſpreading branches, ſubdividing into ſmaller ones. The young branches are cloſely beſet with ſhort, narrow, acute-pointed, ſeſſile leaves, of a dark green, and continuing all the year. At the end of every ſhoot, the flowers are produced in ſmall cluſters ſitting cloſe to the leaves; they are of a pure white, begin to appear in the autumn, continue in beauty all winter, and decay in ſpring. [Capſule ovate-globular, crowned with the permanent, white, villoſe, acutely-five-toothed calyx: ſkin membranaceous, ſlightly ſtriated, black; ſhells cartilaginous, thin, convex on one ſide, angular on the other, opening elaſtically by the inner angle. Seed one in each cell, faſtened to the bottom of it, of an oblong ſpheroidal form, ferruginous, ſhining, having a thick fungous white umbilicus at the baſe [a].]

It grows naturally at the Cape of Good Hope, whence it was firſt brought to the gardens in Holland: but it alſo occupies large tracts of ground about Liſbon, in the ſame manner as many lands in England are with heath.

[It was cultivated in 1731, by Mr. Miller [b]. The flowers are ſlightly odoriferous [c].

2. Found at the Cape of Good Hope by Thunberg.

3. Stem determinately branched: branches rod-like, ruſeſcent, white-pubeſcent. Leaves ſcattered, lanceolate-linear, like thoſe of the Yew-tree, revolute at the edge, ſpreading, ſubpubeſcent, white-tomentoſe underneath. Heads terminating, ſolitary. Common calyx ſhorter than the corolla, netted-veined, with lanceolate ſcales having a red keel, with hairs on the outſide the colour of red wine. The corolla has white hairs. The ſtigma is blunt [d].

4. This, as well as the preceding is a native of the Cape of Good Hope. If it be the ſame with the *pubeſcens* of the Kew catalogue, it was introduced by Maſſon in 1774; and flowers here from february to april.

5. This alſo is a native of the Cape, and was introduced at the ſame time by Maſſon. It flowers in november [e].]

6. This has an erect ſhrubby ſtalk, which riſes near three feet high, covered with a purpliſh bark, and here and there ſome white down upon it. Leaves narrow, ſhort, acute-pointed, ſeſſile, alternate on every ſide, thick, nerved, dark green on their upper ſurface, but hoary on their under. Flowers collected in ſmall heads at the end of the branches, white, woolly, fringed on their borders, cut into ſix acute ſegments at top. [Capſule ſubterminate, rounded-three-cornered, ferruginous, ſmooth, terminated at top by a widiſh area with three riſes, ſurrounded by a membranaceous, very narrow, toothleſs margin, from the fall of the calyx. Grains or diviſions of the capſules a little larger than in the firſt ſort. Seeds elliptic, deep cheſtnut-coloured, ſmooth but not ſhining: navel fungoſe, white, widely ſurrounding the baſe of the ſeed [f].

Cultivated by Mr. Miller in 1759. It flowers from march to may [g].

7. Native, as the reſt are, of the Cape of Good Hope. Found there by Thunberg.

8. Leaves compreſſed a little, rugged with minute dots, ſomewhat hirſute, ſpreading, ſubpetioled, with a tomentoſe groove underneath. Flowers ſolitary, ſeſſile, the ſize of a pea. Calyx with ciliate leaflets [h].

9. Stem proliferous, naked or ſomewhat rugged from the fallen leaves. Leaves ſcattered, awl-ſhaped, roundiſh, bluntiſh, even, ſpreading, channelled underneath or with revolute margins. Stipules in pairs, awl-ſhaped, very ſmall. Heads of flowers with a many-leaved calyx of naked, obovate, two-parted ſcales, interwoven with wool. Corollas funnel-form with a ſhort tube; ſegments of the border five, linear, long, woolly-white on the outſide. Stamens in the throat: ſtyle very ſhort, with three globular ſtigmas.—It differs from *P. ericoides*, by the horn-ſhaped ſegments of the corolla, longer than the yellow corolla itſelf [i].

Introduced from the Cape in 1786, by Maſſon [k].

10. Plant a fathom in height, with ſcattered branches, bifid or by threes at top, round elongated, ſmooth, purple, raceme panicled with flowering branchlets at top. Leaves ſeſſile, an inch and more in length, frequent, almoſt like thoſe of the Spruce Fir, blunt, even, quite entire, veinleſs, flexile, pale at the baſe. Inflorescence much reſembling that of *Ph. racemoſa*. Spikes from the upper axils, and the topmoſt twigs, ſometimes an inch and half in length, ſlender. Flowers ſeſſile, alternate, approximating, ſimple. Bracles linear, the lower ones longer than the flowers; alſo three ſcales, ovate, ferruginous, concave, blunt, ſhorter than the flower, at the baſe of each. Bottom of the corolla villoſe. Petals five, white, linear, blunt, without any nectary. Germ turbinate, ferruginous [l].

11. This differs from *Ph. buxifolia*, in having the leaves not ovate but cordate, drawn to a very fine point at the tip. The ſtem is proliferous, and the heads are not lateral [m].

12. Scales of the calyx rough with glaucous-gray hairs. Corolla with white hairs. It varies with revolute-linear leaves.—Found at the Cape by Burman [n].]

13. This riſes with a ſhrubby erect ſtalk five or ſix feet high, when old covered with a rough purpliſh bark, but the younger branches have a woolly down. Leaves thick, the ſize of thoſe of the Box-tree, veined, ſmooth and of a lucid green on their upper ſide, but hoary on their under; they have ſhort foot-ſtalks, and ſtand without order on the branches. The flowers are collected in ſmall heads at the ends of the branches; they are of an herbaceous colour and make no great appearance.

[It was cultivated in 1759, by Mr. Miller, and flowers during a great part of the year [o].

14. This differs from all the reſt by its inflorescence, or head of flowers elongated into a villoſe ſpike [p]. Introduced in 1774 by Maſſon. It flowers in november and december [q].

15. This is a very diſtinct ſpecies from *Ph. cordata*, with which it agrees in the form of the leaves [r]. Introduced with the preceding by Maſſon. It flowers in march and april [s].

16. This approaches to *Ph. calliſa*, but differs from it in not having the leaves rugged above, and the flowers racemed and panicled [t].

17. Found at the Cape by Thunberg.

18. Stem five feet high, ſhrubby, with determinate, ruſeſcent, ſubpubeſcent branches. Leaves alternate, cluſtered, ſeſſile, acute, quite entire, like thoſe of *Passerina macronata*. Panicle terminating, compoſed of ſpikes: flowers alternate, ſeſſile, ſimple, ſmall, within a cordate bracle. Calyx inferior, three-leaved, the length of the germ. Corolla ſuperior, five-parted: petals ovate, flat, even, white. Stamens the length of the

[a] Gærtner. [b] Hort. kew. [c] Linn. mant. [d] Idem. [e] Hort. kew. [f] Vahl. [g] Linn. ſpec. [h] Linn. mant. [i] Hort. kew. [k] Linn. ſuppl. [l] Hort. kew. [m] Linn. ſuppl. [n] Hort. kew. [o] Willdenow.

corolla. Germ turbinate between the calyx and corolla. Perhaps it may be of a diſtinct genus [a].

19. This ſhrub grows to the height of two feet, and is very like the firſt ſpecies; but the branches are many-flowered, and the flowers ſmaller [b].

20. Found by Thunberg at the Cape of Good Hope, where all the other ſpecies are natives.]

PROPAGATION AND CULTURE.

As theſe ſhrubs do not produce ſeeds in England, they are propagated by cuttings. There are two ſeaſons for planting theſe; the end of march, before the plants begin to ſhoot, and the beginning of auguſt. In the firſt ſeaſon plant them in pots, and plunge them into a very moderate hot-bed, covering them cloſe with bell or hand-glaſſes, ſhading them in the middle of the day, and refreſhing them gently with water: they will put out roots in two months; then inure them to the open air, and when they have obtained ſtrength, take them careſully out of thoſe pots, and plant each in a ſeparate ſmall pot, filled with ſoft loamy earth, placing them in a ſhady ſituation until they have taken new root; when they may be removed to a more ſheltered place, there to remain to autumn.

In the ſecond ſeaſon, plant the cuttings in pots, which may be either plunged into an old hot-bed or in the ground, covering them cloſe as before, and treating them in the ſame way: when they put out roots it will be too late to tranſplant them, and they muſt remain in the ſame pots until ſpring. If theſe are placed under a hot-bed frame in autumn, where they may be protected from froſt, and expoſed to the open air in mild weather, they will ſucceed better than when they are more tenderly treated.

Theſe ſhrubs being too tender to thrive in the open air in England, muſt be kept in pots, and houſed in winter: but they require no artificial heat. In ſummer they may be placed abroad in a ſheltered ſituation. As they flower in winter, they make a good appearance in the green-houſe or dry ſtove at that ſeaſon. The firſt ſort will live through the winter, when mild, in a warm ſheltered ſituation, but is always deſtroyed by ſevere froſt.

[PHYLICA. See *Brunia* and *Rhamnus Alaternus*.

PHYLLACHNE. (*From φυλλον a leaf, and αχνη a glume; becauſe it has both leaves and perianth like a glume or chaff.*)

Lin. gen. Schreb. n. 1490. *Suppl. n.* 1427. *p.* 62. *Forſt. gen. t.* 58. *Juſſ.* 422.

Claſſ. 22. 1. Dioecia Monandria.

GENERIC CHARACTER.

* *Male* Flowers.

CAL. *Perianth* three-leaved, ſuperior: *leaflets* very ſmall, awl-ſhaped.

COR. one-petalled: *tube* gradually widening and ſpreading: *border* five-cleft, ſpreading; *ſegments* oblong, blunt, the length of the tube.

STAM. *Filament* ſingle, capillary, erect, the length of the corolla, with a gland on each ſide at the baſe. *Anther* globular, three-grooved.

PIST. Rudiment of a germ. *Style* and *Stigma* none.

* *Female* Flowers, on a different plant.

CAL. and COR. as in the Male.

PIST. *Germ* turbinate, inferior. *Style* filiform, ſtraight, the length of the corolla, with a gland on each ſide of the baſe. *Stigma* capitate, four-cornered; with four *tubercles*, the two upper ones larger.

PER. *Berry* ? inferior, one-celled, many-ſeeded.

SEEDS numerous, ovate-oblong, very ſmall, faſtened to the receptacle.

ESSENTIAL CHARACTER.

Cal. three-leaved, ſuperior. *Cor.* funnel-form.

FEM. *Stigma* four-cornered. *Caſſ.* inferior, many-ſeeded.

SPECIES.

1. Phyllachne uliginoſa.

Forſt. gen. 116. *Lin. ſuppl.* 412.

DESCRIPTION, *&c.*

It is a very ſmall moſſy plant, growing in tufts, like the common Polytrichum. Stems cloſely approximating, covered with imbricate leaves, proliferous into two or three branchlets. Leaves ſmall, awl-ſhaped, crenulate with a cartilaginous margin. Flowers terminating, ſeſſile, white. It is a pretty plant, having the ſtructure of a Moſs all over, but adorned with flowers of a very different kind.

Native of Terra del Fuego, where it was found by Sparrmann [a].

Commerſon, who named it *Stibas*, deſcribes the corolla as being ſometimes ſix or ſeven-cleft, and the flowers as monoecous, with a ſingle ſtamen on one ſide, and a ſingle piſtil on the other [b].]

PHYLLANTHUS. (Phyllanthes *of Pliny. From φυλλον a leaf, and ανθος a flower. The flower growing out of the leaf.*)

Lin. gen. n. 1050. *Reich. n.* 1142. *Schreb. n.* 1412. *Gaertn. t.* 108. *Juſſ.* 386. Emblica. *Gaertn. t.* 108.

Claſſ. 21. 3. Monoecia Triandria.

Nat. order of *Tricoccæ. Euphorbiæ*, Juſſ.

GENERIC CHARACTER.

* *Males.*

CAL. *Perianth* one-leaſed, ſix-parted, bell-ſhaped, coloured: *ſegments* ovate, ſpreading, blunt, permanent.

COR. none, except the calyx be called ſo.

STAM. *Filaments* three, ſhorter than the calyx, approximating at the baſe, diſtant at the tips. *Anthers* twin.

* *Females.*

CAL. *Perianth* as in the males.

COR. none.—*Nectary* a rim of twelve angles, ſurrounding the germ.

PIST. *Germ* roundiſh, obtuſely three-cornered. *Styles* three, ſpreading, bifid. *Stigmas* blunt.

PER. *Capſule* roundiſh, three-grooved, three-celled: *cells* bivalve.

SEEDS ſolitary, roundiſh.

ESSENTIAL CHARACTER.

MALE. *Cal.* ſix-parted, bell-ſhaped. *Cor.* none.

FEM. *Cal.* ſix-parted. *Cor.* none. *Styles* three, bifid. *Capſ.* three-celled. *Seeds* ſolitary.

SPECIES.

[1. Phyllanthus grandifolia. *Great-leaved Phyllanthus.*

Lin. ſpec. 1392. *Reich.* 4. 121. *hort. cliff.* 440. *Leaves ovate blunt quite entire, ſtem arboreous.*

2. Phyllanthus mutans. *Pendulous-flowered Phyllanthus.*

Swartz prodr. 27.

Tilia racemoſa, folio longiore ſubtus albicante, &c. *Sloan. jam.* 2. 19. *t.* 158. *f.* 3. *Raii hiſt.* 3. *dendr.* 88.

Shrubby, leaves alternate oval glaucous underneath, racemes terminating leafy nodding.

3. Phyllanthus mimoſoides. *Mimoſa-like Phyllanthus.*

Swartz prodr. 27.

Stem ſhrubby, branches rod-like, leaves pinnate floriferous.

4. Phyllanthus Conami.

Swartz prodr. 28.

Conami braſilienſis. *Aubl. guian.* 926. *t.* 354.

Stem ſhrubby very much branched, branches diffuſed, leaves petioled roundiſh attenuated but bluntiſh at the tip, pedunckes faſcicled axillary.]

5. Phyllanthus Niruri. *Annual Phyllanthus.*

Lin. ſpec. 1392. *Reich.* 4. 121. *fl. zeyl. n.* 331. *hort. upſ.* 282. *cliff.* 440. *Swartz obſ.* 354. *Humb. jap.* 56. *Pluk. phyt. t.* 183. *f.* 5.

Urinaria indica erecta vulgaris. *Burm. zeyl.* 230. *t.* 93. *f.* 2.

Herba mœroris alba. *Rumph. amb.* 6. 41. *t.* 17. *f.* 1.

Niruri barbadenſe, &c. *Mart. cent. t.* 9.

Kirganeli. *Rheed. mal.* 10. 29. *t.* 15.

Leaves pinnate floriferous, flowers peduncled, ſtem herbaceous erect.

[6. Phyllanthus Urinaria.

Lin. ſpec. 1393. *Reich.* 4. 122. *fl. zeyl. n.* 332. *Lour. cochinch.* 554. *ed. Willd.* 677. *Pluk. phyt. t.* 183. *f.* 6.

Herba mœroris rubra. *Rumph. amb.* 6. 41. *t.* 17. *f.* 2.

Tſieru-Kirganeli. *Rheed. mal.* 10. 8. *t.* 16. *Raii dendr.* 29.

Leaves pinnate floriferous, flowers ſeſſile, ſtem herbaceous, procumbent.

[a] Linn. mant. [b] Idem.

[a] Linn. ſuppl. [b] Juſſieu.

7. Phyllanthus bacciformis.
Lin. ſyſt. 847. *Reich.* 4. 122. *mant.* 294. *ſuppl.* 415. *Swartz obſ.* 355.
Leaves pinnate with ſix leaflets, female flower terminating.

8. Phyllanthus racemoſus.
Lin. ſyſt. 847. *ſuppl.* 415.
Leaves pinnate flowering in a raceme at the tip, fruit berried juiceleſs, ſtem ſuffruticoſe.

9. Phyllanthus Emblica. *Shrubby Phyllanthus.*
Lin. ſpec. 1393. *Reich.* 4. 123. *fl. zeyl. n.* 333. *mat. med.* 199. *Swartz obſ.* 355. *Lour. cochinch.* 553. *ed. Willd.* 677.
Myrobalams in Java. *Bont. jav. l.* 6. *c.* 24. *f. p.* 110.
M. Emblica. *Bauh. pin.* 445. *Rumph. amb.* 7. 1. *t.* 1. *Blackw. t.* 400.
Emblica officinalis. *Gærtn. fruct.* 2. 122.
Nellika. *Zan. biſt.* 159. *t.* 61.
Nelli-camarum. *Rheed. mal.* 1. 69. *t.* 38. *Raii biſt.* 1156.
Leaves pinnate floriferous, ſtem arboreous, fruit berried.

[10. Phyllanthus maderaſpatenſis.
Lin. ſpec. 1393. *Reich.* 4. 123. *Gærtn. fruct.* 2. 125.
Nirouri maderaſpat. ſennæ folio longiore. *Petiv. gaz.*
Leaves alternate wedge-ſhaped mucronate.

11. Phyllanthus virgata.
Forſt. auſtral. n. 341.
Leaves ſimple alternate linear mucronate, peduncles axillary ſolitary one-flowered, ſtem ſhrubby.

DESCRIPTIONS, *&c.*

1. Native of America.

2. Branches ſlender, covered with a light-coloured reddiſh-brown ſmooth bark, divided into twigs ſet with leaves at one-third of an inch diſtance from each other, two inches long and one inch and a half broad, with one middle and ſeveral tranſverſe ribs of a purple colour; petioles ten inches long[a].—Native of Jamaica.

3. Native of Antigua.

4. Native of the Weſt Indies.

5. Root filiform, long, white. Stem about a foot high, branched, erect, roundiſh, even. Leaves alternate, diſtant, often only terminating. Petioles filiform, bearing both leaves and flowers. Pinnas from eight to twelve pairs, alternate, oblong, entire, ſmall, ſmooth. Petiolets very ſhort. Stipules very minute, in pairs, at the baſe of the pinnas, coloured. Flowers on very ſhort peduncles, axillary, nodding, under the leaves. Males and females mixed, but ſolitary. Calyxes of both five-leaved; leaflets ovate, in the males pale. Theſe have one, columnar, round filament, and three twin contiguous anthers, with five glands at the baſe of the filament. Capſule ſix-valved, marked with three lines. Seeds ſix, oblong, angular[b].]

According to Miller, it is an annual plant, with an herbaceous ſtalk a foot and half high. The leaflets contract every evening, turning their under ſide outwards. The flowers are produced on the under ſide of the leaves along the midrib, and turn downwards. It uſually flowers here from june to october. The ſeeds ripen in ſucceſſion, and are caſt out of the capſules, when ripe, with ſo much force, as to be thrown to a conſiderable diſtance. It is very common in Barbadoes, (in the mountainous ſwamps of Jamaica, on the banks of rivers in Hiſpaniola; in the Eaſt Indies[c], and Japan[d]. It was cultivated in 1692, in the Royal Garden at Hampton Court[e].

6. Stem herbaceous, annual, one foot high, manifold, diffuſed, ſubprocumbent, hiſpid. Leaves many-paired: leaflets ovate-lanceolate, hairy, browniſh-green, oppoſite. Flowers heaped, axillary, ſubſeſſile. Stamens three. Styles three, bifid. Capſule three-cornered, three-valved, three-grained. The whole herb is milky; the ſtem, leaves and calyx reddiſh[f]. The leaves are erect in this, not horizontal as in the preceding; the ſtem ſubpubeſcent, not ſmooth as in that[g].

It has the trivial name from its diuretic quality; and is a native of the Eaſt Indies, China about Canton, Cochinchina, and the eaſtern coaſt of Africa[h].

7. Stem half a foot high, quite ſimple, aſcending, angular, even. Leaves alternate: leaflets alternate, oval, blunt, mucronate, on very ſhort petiolets, ſomewhat fleſhy, even, veinleſs, twice as big as thoſe of *Ph. Niruri*. Stipules in threes; two of them ſemicordate, acuminate, in pairs, the third or middle one under the petiole, awl-ſhaped, running down into the angular ſtem. Stipules at the leaflets two, acute. Male flowers a few, from each axil of the leaves, pendulous, minute; on one-flowered, capillary pedicels. Perianth of ſix, ovate-ſubulate, equal leaflets; (according to Swartz, ſix-parted.) Filaments three, very ſhort, approximating, with the anthers ſomewhat oblong; (but Swartz obſerves, that there is only a ſingle filament, with three twin anthers, ſo united as to appear like one that is ſix-grooved, or diſcharging its pollen by ſix grooves. Female flower ſolitary, terminating the compound leaves or common peduncle, it is on a longer peduncle than the male, and ten times bigger than that, or the ſize of the flower of *Uva Urſi*, and therefore ſingular. Perianth as in the male. Nectary ovate, three times as large as the calyx, with the mouth gaſhed. Capſule ſix-valved, elaſtic, and containing ſix ſeeds.

It is an annual plant, native of Tranquebar, where it was found by Koenig[i]. *See after n.* 11.

8. This very much reſembles the other ſpecies, but the leaves are ſimply pinnate; the leaflets alternate, linear, acute, ſmaller at the tip, where the petiole terminates in a contracted little raceme.—Native of Ceylon. *Koenig*[i].]

9. This riſes in Malabar with a tree-like ſtem to the height of twelve or fourteen feet, but in England not more than half that height, ſending out from the ſide many patulous branches. The leaves have very narrow leaflets.

[According to Loureiro, the common height is eight feet, with diffuſed branches. Leaves alternately pinnate, with many oblong-ovate, quite entire, ſmooth leaflets. Berry ſmall, ſomewhat pear-ſhaped, fleſhy, ſubacid, eatable, three-celled, two-ſeeded. Calyx of both flowers ſomewhat wheel-ſhaped, ſix-cleft; ſegments blunt, thick. Filaments none: anthers three, placed on the angles of a three-cornered receptacle. Flowers ſcattered. Germ three-cornered. Style none. Stigmas three, bifid.

Swartz obſerves, that the filament, in the male flower, is very ſhort and columnar: the three anthers minute and coaleſcent.—*See after n.* 11.

Native of the Eaſt Indies, Cochinchina and China, in which latter country, as Loureiro remarks, the berry is juiceleſs.—It was cultivated by Mr. Miller in 1768[e].

10. Calyx of the female flower ſix-toothed, blunt; of the male five-toothed: theſe latter have five ſmall petals, and three ſtamens[k]. Capſule orbicular, depreſſed, contained at the baſe in a ſix-leaved calyx, a little wider than itſelf, having ſix very obſcure ſwellings, tricoccous. The cocculi are papery, not ſeparating from the epidermis, two-valved, opening with a ſpring. Receptacle central, filiform, ſhort. In each cell two ſeeds, which are three-ſided, dotted, ſerruginous[l].—Native of the Eaſt Indies.

11. Native of the Society iſlands[k].

Gærtner ſeparates *Ph. Emblica* from the other ſpecies, becauſe it has not only a drupaceous fruit, but an embryo that is not ſpiral. He names it *Emblica officinalis*, and deſcribes the fruit to be a drupaceous capſule, globular, depreſſed, ſix-grooved, tricoccous; with a leathery-fleſhy, thick, ſmoothiſh rind. Shell ſtony, obovate, hexangular, mucronate at the tip, compoſed of three bony cocculi, having on one ſide a raiſed dorſal ridge, commonly (but not always) creſted with bundles of woody fibres; on the other they are angular; they are half-two-valved, and open with a ſpring from the baſe. Receptacle central, columnar, three-ſided. Seeds in each cell two, three-ſided, bowed on

[a] Sloane. [b] Swartz. [c] Idem. [d] Thunberg. [e] Hort. kew. [f] Loureiro. [g] Linn. [h] Loureiro. [i] Linn. mant. [k] Linn. ſuppl. [l] Hort. kew. [m] Reichard from Forſk. ægypt. 6. 159. [n] Gærtner. [o] Forſter.

one side, with flat planes on the other converging to an acute angle, smooth, bay-coloured, hard: navel simple, small, in the middle of the belly of the seed. Cover three-fold: outer membranaceous; middle cruftaceous, hard, brittle; inner membranaceous, ferruginous. Albumen fleshy, friable, pale. Embryo almoft the length of the albumen, inverted, milky: cotyledons leafy, cordate-lanceolate, with the edges reflexed towards the back of the feed and flightly bowed: radicle roundifh, fuperior.

Gærtner adds another fpecies, which he names *Emblica grandis*, and fufpects to be the *Ph. baccifermis* of Linneus. The fruit is a largifh globular drupe, very obfcurely three-grooved, fmooth, by age becoming brown or the colour of fmoke, tricoccous: rind thin, coriaceous. Cocculi bony, on the back very thick and convex, but on the fides thin and converging to an angle, two-valved. Receptacle obfcure below, but above three-forked; with roundifh arms, curved upwards, but running down in their proper grooves between the fides of the cocculi to the cruft of the rind, in which their fibres are ultimately difperfed. Seeds folitary, biggifh, thick, gibbous on one fide and as it were keeled on the back, flightly convex on the other, with a ftreak along the middle of the belly; in other parts fmooth, bay-coloured, perforated with a fmall hole under the tip: outer cover cruftaceous; inner membranaceous, with a wide ferruginous wart at the bafe: albumen thick, oily, whitifh: embryo inverted, fnow-white: cotyledons cordate-elliptic, leafy, flat: radicle fmall, fuperior. Retzius has three other fpecies from the Eaft Indies—*fimplex*, *ftellata*, and *rhamnoides*.]

PROPAGATION AND CULTURE.

Thefe plants may be propagated by feeds, when they can be procured from the countries where they grow naturally. They muft be fown on a hot-bed, and when the plants are fufficiently grown up, each fhould be planted in a fmall pot filled with light earth, and plunged into a hot-bed of tanner's bark; fhading and watering them until they have taken good root: after this, they muft remain conftantly in the bark-ftove, and be treated in the fame manner with plants from hot countries.

[PHYLLANTHUS AMERICANA. See *Caftus*.

——— Epiphyllanthus. See *Xylophylla*.

——— fpecioſus. See *Xylophylla*.]

PHYLLIS. (*One of the poetical names, like* Amaryllis, Hyacinthus, &c.)

Lin. gen. n. 323. *Reich. n.* 353. *Schreb. n.* 454. *Gærtn. t.* 25. *Juſſ.* 198. Bupleuroides. *Boerh.*

Claſs. 5. 2. Pentandria Digynia.

Nat. order of *Stellatæ*. *Rubiaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Umbel* none (but a panicle.) *Perianth* very ſmall, ſuperior, two-leaved, obſolete.

COR. *Petals* five, lanceolate, obtuſe, revolute, ſcarcely connected at the baſe.

STAM. *Filaments* five, ſhorter than the corolla, capillary, flaccid. *Anthers* ſimple, oblong.

PIST. *Germ* inferior. *Style* none. *Stigmas* two, awl-ſhaped, pubeſcent, reflex.

PER. none. *Fruit* turbinate-oblong, blunt, angular.

SEEDS two, parallel, convex and angular on one ſide, flat on the other, wider at top.

OBS. *Stigmas as in* Graſſes, Elm, Tetragonia.

ESSENTIAL CHARACTER.

Stigmas hiſpid. *Fructifications* ſcattered. (*Cal.* two-leaved, obſolete. *Cor.* five-petalled. *Seeds* two.)

SPECIES.

1. Phyllis Nobla. *Baſtard Hare's-ear.*

Lin. ſpec. 335. *Reich.* 1. 647. *Willd.* 1354. *hort. cliff.* 87. *upſ.* 57. *Knipb. cent.* 5. *n.* 66. *Gærtn. fruct.* 1. 123.

Valerianella canarienſis fruteſcens, Simpla nobla dicta. *Dill. elth.* 405. *t.* 299. *f.* 386.

Bupleuroides quæ Arbor umbellifera. *Walth. hort. ingbe* 1. 72.

Stipules toothed.

DESCRIPTION, *&c.*

This plant rifes with a ſoft ſhrubby ſtalk about two or three feet high, which is ſeldom thicker than a man's finger, of an herbaceous colour, and full of joints. Theſe ſend out ſeveral ſmall ſide branches towards the top, garniſhed with ſpear-ſhaped leaves near four inches long, and almoſt two broad in the middle, drawing to a point at each end; they are of a lucid green on their upper ſide, but pale on their under, having a ſtrong whitiſh midrib, with ſeveral deep veins running from it to the ſides; the leaves are for the moſt part placed by threes round the branches, to which they fit cloſe. The flowers are produced at the end of the branches, in looſe panicles; they are ſmall, of an herbaceous colour at their firſt appearance, but before they fade, change to a brown or worn-out purple, and are cut into five parts to their baſe, where they are connected, and fall off without ſeparating. Theſe ſegments are reflexed ſo as to cover the germ, which is ſituated under the flower, and afterwards becomes a ſhort, turbinated, obtuſe, angular fruit, which ſplits in two parts when ripe, each containing one ſeed, flat on the inſide, convex on the outſide and angular.

[Gærtner calls the fruit a capſule. It is inferior, cruſtaceous, obovate, rhomb or lenticular-compreſſed, two-celled, bipartile: the cruſt on the back and ſides is coriaceous and thick, but on the belly membranaceous, ſubdiaphanous and white. Seed in each cell one, obovate, ſmooth, of a ruſty-red colour, convex on one ſide, flat on the other or very ſlightly concave; faſtened by the baſe. The ſeeds being of a different colour from the cruſt that covers them, entirely diſtinct and eaſily ſeparating from it; Gærtner, agrees with Adanſon in conſidering the ſeeds as included in a pericarp, rather than as being naked, with Linneus.

According to Fabricius, this plant recedes entirely from the *Umbellatæ*, in having an arboreſcent ſtem, ſimple leaves oppoſite or often by threes, and the flowers in a dichotomous panicle. The ſtructure of the germ and ſeed however ſhow it to be of that order [1].

Native of the Canary iſlands. Cultivated in 1699 by the Dutcheſs of Beaufort. It flowers in june and july [2].]

PROPAGATION AND CULTURE.

It is propagated by ſeeds, which muſt be ſown on a bed of freſh light earth towards the end of march, and the plants will come up by the beginning of may; when they are fit to tranſplant, they ſhould be put into ſeparate pots, and placed in a ſhady ſituation until they have taken root; after which time they ſhould be placed in a ſheltered ſituation, where they may have the morning ſun, and in the ſummer will require to be frequently watered. In winter they muſt be ſheltered from the froſt, but require to have as much free air as poſſible in mild weather; the ſecond year the plants will flower, if therefore in the ſpring ſome of the plants are ſhaken out of the pots and put into the full ground, they will perfect their ſeeds much better than thoſe which remain in the pots.

As theſe plants ſeldom continue in health above four or five years, it will be proper to raiſe a ſupply of young plants to ſucceed them.

The plants retain their leaves all the year, which being large and of a ſhining green, make a handſome appearance in winter, in which the beauty of it conſiſts, for the flowers have none.

[PHYLLIS. See *Acroſtichum*.

Phyllitidi affinis. See *Marcgravia*.

Phyllitidi, &c. folio. See *Arum*.

PHYLLITIS. See *Acroſtichum*, *Aſplenium*, *Hemionitis*, *Polypodium*, *Pteris*, *Trichomanes*.

PHYLLOCHNOIS. See *Aſuga*.

PHYLLON and PHYLLUM. See *Mercurialis*.]

PHYSALIS. (Φυσαλὶς *of Dioſcorides, from* φυσα *a bladder: the calyx being much inflated.*)

Lin. gen. n. 250. *Reich. n.* 267. *Schreb. n.* 336 *Gærtn. t.* 131. *Juſſ.* 126. Alkekengi. *Tournef. t.* 64.

[1] Giſeke prælect. Linn. 512. [2] Hort. kew.

Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Luridæ*. *Solanæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ventricoſe, half-five-cleft, ſmall, five-cornered, with acuminate ſegments, permanent.

COR. one-petalled, wheel-ſhaped: *tube* very ſhort: *border* half-five-cleft, large, plaited: *ſegments* wide; acute.

STAM. *Filaments* five, awl-ſhaped, very ſmall, converging. *Anthers* erect, converging.

PIST. *Germ* roundiſh. *Style* filiform, generally longer than the ſtamens. *Stigma* blunt.

PER. *Berry* ſubglobular, two-celled, ſmall, within a very large, inflated, cloſed, five-cornered, coloured calyx. *Receptacle* kidney-form, doubled.

SEEDS very many, kidney-form, compreſſed.

ESSENTIAL CHARACTER.

Cor. wheel-ſhaped. *Stam.* converging. *Berry* within an inflated calyx, two-celled.

SPECIES.

* *Perennial.*

1. Phyſalis ſomnifera. *Cluſtered Winter Cherry.*
Lin. ſpec. 261. *Reich.* 1. 506. *Willd.* 1019. *hort. cliff.* 62. *Gærtn. fruct.* 2. 239. *Cavan. ic.* 2. 2. *t.* 103. *Lour. cochinch.* 132. *Deſfont. atlant.* 192.
Solanum ſomniferum. *Camer. epit.* 815. *Matth.* 755. *Cluſ. hiſt.* 2. 85. *Dod. pempt.* 455. *Lob. ic.* 263. *Ger. emac.* 339. *f.* 2. *Park. theat.* 345. *n.* 3. 346. *f.* 3.
S. ſomn. verticillatum. *Baub. pin.* 166.
S. verticillatum. *Baub. hiſt. Raii hiſt.* 682.
S. veſicarium coralloides. *Barrel. ic. t.* 149.
Stem ſhrubby, branches ſtraight, flowers cluſtered.

[2. Phyſalis ariſtata. *Bearded Winter Cherry.*
Ait. hort. kew. 1. 244. *Lin. ſpec. ed. Willd.* 1020.
Stem ſhrubby, leaves oblong entire ſmooth, branches petioles and peduncles lanuginoſe, calycine toothlets awned.]

3. Phyſalis flexuoſa.
Lin. ſpec. 261. *Reich.* 1. 507. *Willd.* 1020.
Baccifera indica, &c. *Raii hiſt.* 1632.
Pevetti. *Rheed. mal.* 4. 113. *t.* 55.
Stem ſhrubby, branches flexuoſe, flowers cluſtered.

4. Phyſalis arboreſcens.
Lin. ſpec. 261. *Reich.* 1. 507. *Willd.* 1020. *Thunb. prodr.* 37 ? *Mill. fig. t.* 206. *f.* 2.
Stem ſhrubby, leaves ovate hairy, flowers ſolitary, corollas revolute.

5. Phyſalis curaſſavica. *Curaſſavian Winter Cherry.*
Lin. ſpec. 261. *Reich.* 1. 507. *Willd.* 1020. *vir. cliff.* 16. *hort. cliff.* 62.
Solanum veſicarium curaſſ. &c. *Mor. hiſt.* 3. 527. *n.* 26. *Pluk. phyt. t.* 111. *f.* 5.
Stem ſhrubby, leaves ovate tomentoſe.

[6. Phyſalis tomentoſa. *Downy Winter Cherry.*
Lin. ſpec. ed. Willd. 1021. *Thunb. prodr.* 37.
Stem ſhrubby tomentoſe, leaves elliptic-oblong tomentoſe, flowers lateral aggregate.]

7. Phyſalis viſcoſa. *Clammy Winter Cherry.*
Lin. ſpec. 261. *ſyſt.* 222. *Reich.* 1. 507. *Willd.* 1021. *hort. cliff.* 496. *Gron. virg.* 24. *Jacqu. hort.* 2. 64. *t.* 136.
Alkekengi bonarienſe repens, bacca turbinata viſcoſa. *Dill. elth.* 11. *t.* 10. *f.* 10.
Leaves in pairs repand blunt ſubtomentoſe, ſtem herbaceous panicled at top.

8. Phyſalis penſylvanica. *Penſylvanian Winter Cherry.*
Lin. ſpec. 1670. *Reich.* 1. 508. *Willd.* 1021.
Alkekengi virginianum perenne majus, flore luteo amplo, fructu minimo. *Rand. cat. angl.* 399.
Leaves ovate ſubrepand blunt almoſt naked, flowers in pairs, ſtem herbaceous.

9. Phyſalis Alkekengi. *Common Winter Cherry.*
Lin. ſpec. 262. *Reich.* 1. 508. *Willd.* 1022. *mat. med.* 65. *hort. cliff.* 62. *upſ.* 49. *vir. cliff.* 16. *Gærtn. fruct.* 2. 238. *Hall. helv. n.* 577. *Hoffm. germ.* 78. *Rotb. germ.* 1. 96. 2. 246. *Pollich pal. n.* 227. *Lour. cochinch.* 133. *Gmel. it.* 1. 158. *Blackw. t.* 161. *Knorr. del.* 1. *t.* L 4. *Bubb. hort.* 2. *t.* 63. *Ludw. eſt. t.* 151. *Planck, it. t.* 124. *Woodv. med. bot.* 2. 33. *t.* 224.
P. Halicacabum. *Scop. carn. n.* 286.
Solanum veſicarium. *Baub. pin.* 166. *Dod. pempt.* 454.
S. halicacabum. *Ger.* 271. *f.* 1. *emac.* 342. *f.* 1.—vulgare. *Baub. hiſt. Raii hiſt.* 681.—f. Alkekengi vulgare. *Park. theat.* 462. 1. 463. *f.* 1.
Leaves in pairs entire acute, ſtem herbaceous ſomewhat branched at bottom.

[10. Phyſalis peruviana. *Peruvian Winter Cherry.*
Lin. ſpec. 1670. *Jyſt.* 222. *Reich.* 1. 509. *Willd.* 1022.
Pubeſcent, leaves cordate quite entire.]

* *Annual.*

11. Phyſalis angulata. *Tooth-leaved Winter Cherry.*
Lin. ſpec. 262. *Reich.* 1. 509. *Willd.* 1022. *hort. cliff.* 62. *upſ.* 50. *fl. zeyl. n.* 97. *Kniph. cent.* 7. *n.* 72. *Lour. cochinch.* 132.
Halicacabum ſ. Solanum indicum. *Cam. hort.* 70. *t.* 17.
H. indicum rectum. *Park. theat.* 462. *n.* 3.
Solanum veſicarium indicum. *Baub. pin.* 166. *Raii hiſt.* 681.—annuum indicum erectum. *Mor. hiſt.* 3. *ſ.* 13. *t.* 3. *ord.* 2. *f.* 22.
Alkekengi ind. glabrum, chenopodii folio. *Dill. elth.* 13. *t.* 12. *f.* 12.
β. A. ind. glabr. capſici folio. *Dill. elth.* 12. *t.* 11. *f.* 11.
Very much branched, branches angular ſmooth, leaves ovate toothed.

12. Phyſalis pubeſcens. *Woolly Winter Cherry.*
Lin. ſpec. 262. *ſyſt.* 222. *Reich.* 1. 509. *Willd.* 1023. *hort. cliff.* 62. *Lour. cochinch.* 133.
P. ramoſa. *Mill. dict. n.* 9.
Alkekengi virginianum fructu luteo. *Feuill. peruv.* 3. 5. *t.* 1.
Halicacabum ſ. Alk. virginenſe. *Park. theat.* 462. 2. *Raii hiſt.* 681.
Solanum veſicarium virginianum procumbens annuum, folio lanuginoſo. *Mor. hiſt.* 3. 527. *ſ.* 13. *t.* 3. *f.* 24.
Very much branched, leaves villoſe-aſcid cordate, flowers pendulous, fruiting calyxes roundiſh-globular angular.

[13. Phyſalis proſtrata. *Trailing blue-flowered Winter Cherry.*
Lin. ſpec. ed. Willd. 1024. *L'Herit. ſtirp. nov.* 43. *t.* 22. *Jacqu. ic. rar.* 1. *t.* 38. *collect.* 1. 99. *Ait. kew.* 1. 245. *Lamarck encycl.* 2. 103.
P. limenſis. *Retz. obſ.* 5. 22.
Very much branched, ſtem procumbent round hirſute, leaves ſomewhat fleſhy.

14. Phyſalis barbadenſis. *Barbadoes Winter Cherry.*
Lin. ſyſt. 222. *ed. Willd.* 1023. *Jacqu. ic. rar.* 1. *t.* 39. *miſc.* 2. 359. *Retz. obſ.* 3. 26.
Very much branched, leaves ovate-cordate pubeſcent, flowers pendulous, fruiting calyxes ovate-acuminate angular.

15. Phyſalis chenopodiifolia. *Gooſe-foot-leaved Winter Cherry.*
Lin. ſpec. ed. Willd. 1023.
Very much branched, leaves ſmooth ovate acuminate angular-toothed, calyxes even the ſize of the fruit globular.]

16. Phyſalis minima. *Small Winter Cherry.*
Lin. ſpec. 263. *ſyſt.* 222. *Reich.* 1. 509. *Willd.* 1024. *hort. cliff.* 62.
Solanum veſicarium indicum minimum. *Herm. lugdb.* 569. *t.* 571.
Pee-inota-inodien. *Rheed. mal.* 10. *t.* 140. *f.* 71.
Very much branched, fruiting peduncles longer than the villoſe leaf.

[17. Phyſalis pruinoſa. *Hairy annual Winter Cherry.*
Lin. ſpec. 263. *ſyſt.* 222. *Reich.* 1. 510. *Willd.* 1024.
Alkekengi barbadenſe nanum alliariæ folio. *Dill. elth.* 12. *t.* 9. *f.* 9.
Very much branched, leaves villoſe, peduncles ſtriated.]

DESCRIPTIONS, &c.

1. This riſes with a ſhrubby ſtalk near three feet high, dividing into ſeveral branches which grow erect, and are covered with a woolly down. Leaves ovate-lanceolate, almoſt three inches long, and an inch and a half

half broad in the middle, downy and on short petioles. Flowers small, of an herbaceous white colour, sitting very close to the branches; and succeeded by small berries nearly of the same size as the common Winter Cherry, and red when ripe.

[Branches flexuose, with short very close villose hairs. Leaves quite entire, the lower blunt, the upper sharp. Flowers glomerate, axillary, subsessile. Calyx pubescent, five-cornered, when the fruit is ripe ovate-pyramidal, five-toothed; teeth sharp. Corolla pale yellow, villose, twice as long as the calyx: tube very short: segments acute spreading [a]. According to Gærtner, the calyx has ten angles, the alternate angles standing out less. Berry spherical, scarlet, very shining, pulpy. Seeds biggish, dotted, pale yellow [b]. Fruit of Physalis, but flower of Atropa; herb of A. frutescens, which it resembles so much, that it can scarcely be separated from that genus [c].

Native of Spain, Sicily, Candia, Barbary, Zanguebar on the coast of Africa, and Mexico in America.

Cultivated in 1596 by Gerarde. It flowers in july and august.

2. Native of the Canary islands, where it was found by Masson. Introduced in 1779 [d].

3. Habit and stature of the first species; flowers in like manner scattered at the axils of the leaves; the calyxes also grow out and involve the berry: but it differs manifestly in having the flowers smaller, the branches very flexuose, and hence the leaves disposed as it were in a double row, inserted into the outer angles of the flexure.—Native of the East Indies [e].]

It rises to the height of five or six feet, sending out long flexuose branches covered with a gray bark. Leaves oblong-ovate, often placed opposite, sometimes by threes round the branches, to which they sit close. Flowers in clusters at the base of the petioles, small, of an herbaceous yellow colour: they are succeeded by round purplish berries having ten cells, each including one seed. It flowers in july and august, but unless the season is warm, the berries do not ripen in England.

4. Stalk shrubby, ten or twelve feet high, dividing towards the top into several small branches, covered with a gray hairy bark. Leaves on the lower part alternate; but towards the end of the branches opposite. Lower leaves from three to four inches long, and two broad in the middle, drawing to a point at both ends; they are of a pale green and are downy. Flowers from the axils towards the end of the branches, one, or two at the same joint opposite, on short nodding peduncles; they are small, of a pale dirty yellow colour, with purple bottoms. Berries small, spherical, red, included in an oval, dark-purple bladder.

It flowers in june and july, but unless the season proves warm, no berries succeed. Discovered by Dr. Houstoun at Campeachy, whence he sent the seeds to England. [It must therefore have been cultivated by Mr. Miller before 1733. Willdenow suggests that the *Ph. arborescens* of Thunberg is probably a different species.]

5. Root perennial, creeping. Stalks several, slender, about a foot high, becoming somewhat woody, but seldom lasting above two years. Leaves alternate, on short foot-stalks; they are about two inches long, and an inch and half broad. Flowers axillary towards the top, on short slender peduncles. Petals small, sulphur-coloured with dark-purple bottoms: they appear in july and august, but are rarely succeeded by berries in England.

Native of Curassao in the West Indies. [Cultivated in 1699, by Viscount Falkland [f].

6. Found at the Cape of Good Hope by Thunberg.]

7. Root creeping, sending up a great number of smooth stalks, about a foot high, dividing towards the top into small spreading branches. Leaves heart-shaped or ovate, about three inches long, and two broad near their base, entire, rough to the touch, of a pale yellowish green, alternate, on pretty long foot-stalks. Flowers towards the top, axillary, on long slender peduncles, of a dirty yellow colour with purple bottoms. They appear in june and july, and are succeeded by viscous berries about the size of the common sort, of an herbaceous yellow colour, inclosed in a light-green swelling bladder.

[Native of America. Cultivated in 1732 by James Sherard, M. D.]

8. Stems many, procumbent or erect, scarcely a foot in height, somewhat flexuose, roundish or obscurely angular, on the top at the flowers branched, having an obscure down scattered over them. Leaves alternate, like those of Boerhaavia, ovate, blunt, serrate-repand, almost naked above, obscurely tomentose underneath, next the flowers in pairs. Petioles shorter by half than the leaves. Peduncles at the axils of the branches, solitary, a little longer than the petioles. Calyx subcylindric, subangular, retuse at the base. Corolla yellow, darker at bottom. Stamens yellow. Berry globular, small, the size of a pea, red [g].]

Root not creeping. Stalks two feet long, spreading on the ground if not supported. Leaves three inches long, and two inches and a half broad, alternate on very long foot-stalks, pale green, having several acute indentures on their edges. Flowers axillary on very short peduncles, larger than those of the common sort, and of a pale yellow colour. They are succeeded by very small yellowish berries, which ripen in the autumn, when the season proves warm.

[Native of North America. Cultivated in 1726 by Mr. Miller. It flowers from july to september [h].]

9. Roots perennial, and creeping to a great distance. They shoot up many stalks in the spring a foot high or more. Leaves of various shapes, some angular and obtuse, others oblong and acute-pointed, of a dark green, on long foot-stalks. Flowers axillary, on slender peduncles, white, appearing in july. Berry round, the size of a small Cherry, inclosed in the inflated calyx which turns of a deep red in the autumn [succulent, very smooth, shining, red: skin membranaceous, very thin: pulp soft, red: partition very narrow, membranaceous. Receptacle central, solid, globular, fleshy, excavated, cohering with the inside of the berry by means of the partition. Seeds very numerous, covered with little raised points, yellowish or rufescent [i].

Native of the South of Europe, Germany, China, Cochinchina, &c.—Cultivated here in 1597 [k].

The berries of Alkekengi, commonly called with us Winter Cherries, were well known to the ancients, and are described by Dioscorides, under the name of Στρυχνὸς ἀλικακάβου. They have an acidulous and not unpleasant taste, followed by a slight bitterness, which they are said to derive from the investing calyx.

Though esteemed detergent and aperient, their fruit is chiefly recommended as a diuretic in suppression of urine, and for removing of obstructions occasioned by gravel or mucous. From six to twelve Cherries, or an ounce of the expressed juice, is given as a dose: there seems however to be no danger from a much larger quantity; for in some parts of Germany the country people eat them by handfuls, and in Spain and Switzerland, they frequently supply the place of other eatable fruits. Ray says, that a gouty person prevented the returns of the disorder, by taking eight of these berries at each change of the moon. Instances of their good effects are related in dropsical and calculous complaints, but at present they are wholly disregarded with us [l].

10. Plant very much resembling *Datura Metel*. Stem (in the stove) perennial, lofty, divaricating, very finely pubescent and extremely soft, as are also the leaves. Flowers solitary, pendulous, yellow, with five dusky spots at bottom, visible on both sides, and the throat hirsute.

Native of South America: found about Lima by Allstroemer [m]. Introduced about 1772. It flowers from april to october [n].—*Physalis peruviana* of Miller is *Atropa physaloides*.]

[a] Desfontaines. [b] Gærtner. [c] Linn. [d] Hort. kew. [e] Linn. spec. [f] Hort. kew.

[g] Gærtner. [h] Hort. kew. [i] Woodville. [k] Linn. spec. & syst. [l] Hort. kew.

11. This is ſeldom a foot high. Leaves of a deep green, on long foot-ſtalks. Flowers ſmall, white, on ſhort pedunculs. Berries ſmall, green when ripe.

[Stem ſtraight, the thickneſs of the little finger, three-cornered below, four-cornered above, as are alſo the branches, which come out obliquely from top to bottom, in alternate order, and are thicker at the baſe. Lower leaves wider and rounder than thoſe about the middle of the ſtem, and theſe larger than thoſe of the branches, deeply toothed or jagged, like thoſe of common Gooſe-foot, ſmooth. Flowers five-cornered, of an extremely pale yellow colour, with ſpots of a darker yellow at the baſe: ſtamens ſhort, purple, with oblong anthers of a duſky blue colour. Calyx of the fruit ſwelling, pendulous, oblong at firſt, but rounder afterwards, green frequently ſtreaked with dark purple at the angles, which are ſo little apparent in this ſpecies, that the bladder ſeems to be roundiſh. The fruit, when ripe, fills the bladder and burſts it.—The ſtem and leaves ſmell diſagreeably when handled [d].

Native of both Indies, Cochinchina and Japan. In the Eltham garden, where it was cultivated before 1732, it came up among earth that was brought with other plants from Carolina.

β. Dillenius has figured another Alkekengi which Linneus ſuppoſes to be a variety of the preceding, although the leaves are in a manner entire. Stem eighteen inches high and more, the thickneſs of the little finger at bottom, purpliſh green, ſmooth, three-ſided, but the upper branches four-ſided. Leaves reſembling thoſe of *Capſicum*, thin, ſmooth but not ſhining, the midrib whitiſh, paler underneath. Flowers ſmall, five-cornered, very pale yellow, with five duſky yellow ſpots at the bottom. In other reſpects this agrees with the preceding; as alſo in its diſagreeable ſcent. The only differences are, that the flowers and bladders are a little ſmaller, ſhorter and leſs produced, and the leaves always entire. The ſeeds of this were gathered by Dr. Sherard in Holland, and introduced into his garden at Eltham.]

12. This branches out very wide cloſe to the ground, and the branches frequently lie upon it; they are angular and full of joints, dividing again into ſmaller branches. Leaves on pretty long foot-ſtalks, about three inches long and almoſt two broad, having ſeveral acute indentures on their edges. Flowers produced on the ſide of the branches upon ſhort, ſlender, nodding pedunculs; they are of an herbaceous yellow colour with dark bottoms, and are ſucceeded by large, ſwelling bladders, of a light green, incloſing berries as large as common Cherries, which are yellowiſh when ripe. It flowers in july, and the berries ripen in autumn.

[Linneus remarks, that the ſpots on the corolla are duſky, not pale; the pedunculs nodding, not drooping; the berries globular, filling the calyx.

Native of America, eſpecially Virginia. Alſo of Cochinchina, according to Loureiro.—Cultivated in 1739, by Mr. Miller [e].

13. Stem herbaceous, branched from the bottom, brittle, a foot high. Branches and branchlets numerous, alternate, flexuoſe. Lower leaves oppoſite, ſtem-leaves alternate, branch-leaves in pairs one leſs than the other, petioled, ſpreading, cordate, the upper ones unequal at the baſe, bluntiſh, repand-ſubangular, villoſe underneath, brittle, bright green, flat, two inches long and upwards, and from eighteen to twenty-ones lines in breadth. Petioles rounded on one ſide, flattiſh on the other, channelled below, the length of the leaf. Flowers axillary, ſolitary or in pairs, pedunculed, fragrant, fugacious, an inch in width. Corollas violet, with a whitiſh eye, and radiating lines of a darker violet. Pedunculs round, villoſe; of the flower ſhort, upright; of the fruit lengthened, reflex, ſtill ſhorter than the petiole.

Native of Peru; found in the ſands near Lima by Dombey, who ſent the ſeeds to the Paris garden in 1780 [f]. It was introduced here in 1782, by Monſ. Thouin [g].

Monſ. L'Heritier remarks, that on account of its funnel-form corolla and diſtant ſtamens it might be referred to *Atropa*; but the bladdery calyx involving the berry determines it to this genus.

14. Stem ſlightly pubeſcent, pellucid, pale green tinged here and there with red, branchlets ſlightly channelled. Leaves cordate, with the lobes of the baſe placed ſpirally on each other, but little toothed. Calyx oblong, very long-pointed, pubeſcent; when in fruit conic-priſmatic, excavated-flat at the baſe. Corolla yellow with purple ſpots and anthers. Its purple anthers, unclammy leaves, want of hoarineſs, flowering pedunculs nodding and not very long, diſtinguiſh this from *Ph. pruinoſa* [h]. Retzius refers the *Alkekengi barbadenſe nanum* of Dillenius to this ſpecies. See *Ph. pruinoſa*.

According to Jacquin, the ſtem is round, about the thickneſs of a reed, villoſe, upright, with many divaricating branches. Leaves acute, toothed, ſoft, ſomewhat villoſe on both ſides, but not viſcid, on long petioles. Pedunculs ſhort. Flowers drooping. Corolla pale yellow, with five fulginous ſpots at the baſe. Fruits pendulous, deciduous. Fruiting calyx ovate, acuminate, ſmooth, veined, acutely five-cornered, aſh-coloured. Berry roundiſh, ſhining, very ſmooth, pale green, much leſs than the calyx, acid.—Native of Barbadoes.

15. This is ſufficiently diſtinct from the other ſpecies, by the berries being of the ſame ſize with the calyx [i].—See ſpecies 11 and 12. The native place is not known.

16. This is a ſmall ſpreading plant, with oblong hairs at the axils of the branches.—Native of the Eaſt Indies [k].]

Stems ſeldom above a foot high. Leaves ovate, of a deep green, on long foot-ſtalks. Flowers ſmall, white, on ſhort pedunculs. Berries ſmall, green when ripe.

[Native of the Eaſt Indies. Cultivated by Mr. Miller in 1759. It flowers in july and auguſt [l].

17. This has the appearance of the preceding ſpecies, n. 9. 10. 11. but the anthers are yellow, not blue; the branches round, flat above and villoſe; the leaves villoſe-viſcid; the axils of the ramifications germinant with a green ſort of froſting. Flowering pedunculs long, erect, ſtrict. Flowers drooping. Calyxes with a flat baſe. Berries ſubturbinate.

Native of America [m]. Mr. Miller cultivated it in 1726. It flowers in july and auguſt [n].

Forſter has another ſpecies, a native of the Society iſlands, which he names *Phyſalis flaccida*, but he does not give any deſcription or ſpecific character of it [o].

Mr. Miller has the following ſpecies not noticed by Linneus:]

1. Phyſalis virginiana.
Mill. dict. n. 4. fig. t. 206. f. 1.
Stem herbaceous, leaves ovate-lanceolate acutely toothed.

Root perennial, compoſed of ſtrong fibres, from which ariſe two or three hairy ſtalks nine or ten inches high, dividing into ſeveral branches. Leaves pale green and hairy, two inches and a half long, and an inch and half broad, placed alternately on ſhort foot-ſtalks. The flowers come out from the ſide of the branches, at the baſe of the petioles, which are long and ſlender. The corolla has a very ſhort tube, but is larger than in moſt of the ſpecies, ſulphur-coloured with a dark purple bottom. The flowers appear in july, and in warm ſeaſons are ſucceeded by oval yelloviſh berries, which ripen in the autumn. The ſeeds were ſent from Philadelphia by Dr. Benſil, who found the plant growing there naturally.

2. Phyſalis patula.
Mill. dict. n. 12.
Very much branched patulous, branches angular, ſmooth, leaves lanceolate pinnate-toothed.

This is a low annual plant. Leaves downy, with deep indentures on their edges, which are oppoſite, and regular like a pinnate leaf. Flowers ſmall and white. Fruit ſmall, yelloviſh when ripe.

[a] Dillenius. [b] Hort. kew. [c] L'Heritier. [d] Hort. kew. [e] Retzius. [f] Willdenow. [g] Linn. [h] Hort. kew. [i] Linn. [k] Hort. kew. [l] Flor. auſtral. n. 506.

3. Physalis villosa.
Mill. dict. n. 13.
Alkekengi americanum annuum ramosissimum villosum, fructu rotundo ex luteo virescente. *Houst. Mss.*
Very much branched, branches villose, leaves ovate acuminate serrate-toothed.
This is an annual plant, with a very branching hairy stalk. Flowers small, of a pale yellow colour. Fruit round, as large as a Cherry, and of a yellowish green when ripe.

4. Physalis cordata.
Mill. dict. n. 14.
Alkekengi americanum annuum, Lamii folio, fructu cordato. *Houst. Mss.*
Stem erect branched, leaves ovate serrate toothed, petioles and peduncles very long.
This is an annual plant, near two feet high. The leaves change to a purplish colour in the autumn. Flowers small and white. Berries almost as large as Heart-Cherries, and of that shape, yellowish green with some purple stripes.

5. Physalis maxima.
Mill. dict. n. 15.
Alkekengi americanum annuum maximum viscosum. *Houst. Mss.*
Stem erect branched, leaves ovate-lanceolate viscid, fruit very large heart-shaped.
This also is an annual plant, with a smooth stalk near three feet high. Leaves on long foot-stalks. Flowers small, pale yellow. Fruit pale yellow when ripe.
All these were found at Vera Cruz by Dr. Houstoun.

6. Physalis peruviana.
For which see *Atropa physaloides*.

PROPAGATION AND CULTURE.

1. Sow the seeds on a bed of light earth the beginning of april: when the plants are two or three inches high take them up carefully, and plant each in a small pot filled with kitchen-garden mould, placing them in the shade till they have taken new root; then remove them to a sheltered situation till the beginning of october; at which time remove them into the greenhouse, watering them sparingly in winter. They will continue several years, if they are not too tenderly treated.

3. Sow the seeds on a moderate hot-bed, and when the plants have four leaves, transplant them on a fresh hot-bed, shading them till they have taken new root; then admit fresh air to them every day in warm weather. When they are three or four inches high, take them up carefully, and plant each in a small pot, filled with light loamy earth, placing them in a frame upon an old hot-bed, and shading them till they have taken new root; then gradually inure them to the open air, into which they may be removed in july, and being placed in a warm situation, they may remain there till the end of september. The first winter place them in a moderate stove; but when they have obtained strength, they will live through the winter in a good greenhouse.

4. Sow the seeds in the same manner, and treat the plants as directed for the preceding; except that not being so hardy, they must be kept in a moderate stove in winter; but in the middle of summer they should be placed in the open air, in a sheltered situation, for about three months; for if they are constantly kept in the stove, they will draw up weak, and not flower. It may also be increased by cuttings, planted in pots during the spring and summer months, and plunged into a gentle hot-bed.

5. 7. Part the roots in the spring: place the plants under a hot-bed frame, or other moderate warmth in winter, and during the months of july, august and september, in a warm situation in the open air.

8. Sow the seeds upon a warm border at the end of march; when the plants come up, thin them where they are too close, and keep them clean from weeds till autumn, when they should be transplanted to the places where they are to remain, which should be in a warm situation, where they will live through the winter in mild seasons.

9. This sort is easily propagated, either by seeds or by parting the roots; the latter, being the most expeditious method, is generally practised, any time after the stalks decay, till they begin to shoot in the spring: it loves a shady situation, and should be confined, otherwise the roots will ramble to a great distance. Its only beauty is in autumn, when the fruit is ripe.

11, &c. The annual sorts are propagated by seeds sown on a moderate hot-bed, and when the plants come up and are a little advanced, they should be planted on a fresh hot-bed to bring them forward, and treated in the same way as the Capsicum. When they are grown strong, and are hardened to bear the open air, they may be transplanted with balls of earth to their roots into a warm border, observing to water and shade them till they have taken root, after which, they will require no other care but to keep them clean from weeds.

12. If the seeds are permitted to scatter, the plants will come up in the spring, and require no other care but to thin them, and keep them clean from weeds; or if the seeds be sown in the spring on a common border, the plants will rise very well, and need no other care.

[PHYSIC-NUT. See *Jatropha*.
PHYTENOIDES. See *Scoparia*.
PHYTEUMA (*of Pliny.* Φυτευμα *of Dioscorides. From* φυτευω *gigno; or, according to others, from* φυτον, *a plant.*)
Lin. gen. n. 220. *Reich. n.* 236. *Schreb. n.* 292. *Gaertn. t.* 30. *Juss.* 165. Rapunculus. *Tourn. t.* 38.
Class. 5. 1. Pentandria Monogynia.
Nat. order of *Campanaceæ*. *Campanulaceæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted, acute, from erect-spreading, superior.
COR. one-petalled, wheel-shaped, spreading, five-parted: *segments* linear, acute, recurved.
STAM. *Filaments* five, shorter than the corolla. *Anthers* oblong.
PIST. *Germ* inferior. *Style* filiform, the length of the corolla, recurved. *Stigma* bifid or trifid, oblong, revolute.
PER. *Capsule* roundish, two-celled or three-celled, opening on both sides by a lateral hole.
SEEDS very many, small, roundish.

ESSENTIAL CHARACTER.

Cor. wheel-shaped with linear segments, five-parted. *Stigma* bifid or trifid. *Caps.* two-celled or three-celled, inferior.

SPECIES.

1. Phyteuma pauciflora.
Lin. spec. 241. *Syst.* 211. *Reich.* 1. 470. *Willd.* 919. *Jacqu. collect.* 2. 63. *Allion. pedem. n.* 424. *Villars dauph.* 2. 515.]
Rapunculus pauciflorus. *Mill. dict. n.* 4. [*Scop. carn. n.* 241. *Hall. helv. n.* 680.
R. alpinus parvus comosus. *Bauh. hist.* 2. 811. *Raii hist.* 745.
Head somewhat leafy, bractes ovate ciliate, all the leaves linear-lanceolate subcrenate.

2. Phyteuma Scheuchzeri.
Lin. spec. ed. Willd. 919. *Allion. pedem. n.* 428. *t.* 39. *f.* 2.
P. scorzonerifolia. *Villars dauph.* 2. 519. *t.* 12. *f.* 2.
Rapunculus. *Hall. helv. n.* 682. *Scheuch. it.* 6. 460.
Head somewhat leafy, bractes linear, longer than the head, leaves lanceolate toothed.

3. Phyteuma Michelii.
Lin. spec. ed. Willd. 920. *Allion. pedem. n.* 427. *t.* 7. *f.* 3.
Rapunculus alpinus cœruleus, &c. *Mich. flor.* 80.
Head roundish, bractes oblong-lanceolate, leaves linear rigid almost entire.

4. Phyteuma hemisphærica.
Lin. spec. 241. *Syst.* 211. *Reich.* 1. 470. *Willd.* 920. *Moench. hass. n.* 176. *Allion. pedem. n.* 425. *Villars dauph.* 2. 515. *Ger. prov.* 454. *Jacqu. ic. rar. vol.* 2. *collect.* 2. 61.]
Rapunculus hemisphæricus. *Mill. dict. n.* 3. [*Hall. helv. n.* 679.

R. umbellatus folio gramineo. *Bauh. pin.* 92. *Raii hiſt.* 745.

R. ſylveſtris cœruleus umbellatus. *Tbal. here.* 94. *t.* 8. *f.* 3.

Rapunculus alterum anguſtifolium alpinum. *Col. ecphr.* 2. 23. *t.* 26.

Head roundiſh, bractes ovate, leaves linear almoſt quite entire ſcarcely ſhorter than the ſtem.

5. Phyteuma comoſa.

Lin. ſpec. 242. *Jacq. auſtr.* 211. *Reich.* 1. 470. *Willd.* 921. *Barr. ic.* 889. *Scop. ann.* 2. 48. *Jacqu. auſtr. app. t.* 50. *Villars dauph.* 2. 517.]

Rapunculus comoſus. *Mill. dict. n.* 2. [*Scop. carn. n.* 240.

R. alpinus corniculatus. *Bauh. pin.* 113. *prodr.* 33. *ic. Ger. emac.* 454. 4. *Raii hiſt.* 744.

Trachelium petræum minus. *Pona bald.* 336. *ic.*—globoſum. *Park. theat.* 643. 3. *t.* 644. 3.

Campanula. *Pluk. phyt. t.* 152. *f.* 6.

Flowers in a ſeſſile terminating bundle, leaves toothed, root-leaves cordate.

6. Phyteuma orbicularis. *Round-headed horned Rampion.*

Lin. ſpec. 242. *Jacq. auſtr.* 211. *Reich.* 1. 471 *Willd.* 921. *Huds. angl.* 97. *Wither. arr. ed.* 3. 245. *Engl. bot.* 142. *Jacqu. auſtr.* 5. 18. *t.* 437. *Villars dauph.* 2. 517. *Kruck. ſilef. n.* 326.]

Rapunculus orbicularis. *Mill. dict. n.* 5. [*Scop. carn. n.* 239. *Hall. helv. n.* 631.

R. folio oblongo, ſpica orbiculari. *Bauh. pin.* 92. *Mor. hiſt.* 2. 463. *ſ.* 5. *t.* 5. *f.* 47.

R. corniculatus cœruleus minor. *Barrel. ic.* 525.

R. corn. montanus. *Ger. emac.* 455. 5. *Raii hiſt.* 744. *ſyn.* 278.

R. alopecuroides orbiculatus. *Park. theat.* 648. *n.* 3.

Rapuntium montanum rarius corniculatum. *Col. ecphr.* 1. 222. *t.* 224.

β. P. lanceolata. *Villars dauph.* 2. 517. *t.* 12. *f.* 1. *Barrel. ic.* 526. (Rapunculus).

All the leaves oblong-lanceolate.

γ. P. elliptica. *Villars dauph.* 2. 517. *t.* 11. *f.* 2.

All the leaves oblong-elliptic obtuſe.

δ. P. Charmelii. *Villars dauph.* 2. 516. *t.* 11. *f.* 3.

Root-leaves cordate-toothed, ſtem-leaves linear quite entire.

Head roundiſh, leaves ſerrate, root-leaves cordate.

7. Phyteuma nigra.

Lin. ſpec. ed. Willd. 922. *Schmidt bohem.* 1. *n.* 189.

P. cordata. *Villars dauph.* 2. 517. *t.* 11. *f.* 1?

Head ovate, bractes briſtle-ſhaped, leaves ſimply toothed, root-leaves cordate, ſtem-leaves lanceolate embracing.

8. Phyteuma betonicæfolia.

Lin. ſpec. ed. Willd. 922. *Villars dauph.* 2. 518. *t.* 12. *f.* 3.

Spike oblong, leaves ſimply crenate, root-leaves lanceolate-cordate, ſtem-leaves lanceolate.

9. Phyteuma ſpicata. *Spiked horned Rampion.*

Lin. ſpec. 242. *Jacq. auſtr.* 212. *Reich.* 1. 471. *Willd.* 923. *Gærtn. fruct.* 1. 149. *Fl. dan. t.* 362. *Pollich pal. n.* 215. *Villars dauph.* 2. 520. *Kruck. ſilef. n.* 327.]

Rapunculus ſpicatus. *Mill. dict. n.* 1. *Bauh. pin.* 92. [*Scop. carn. n.* 238. *Hall. helv. n.* 684. *Raii hiſt.* 743.—cœruleus. *Bauh. prodr.* 32. *ic.*—alopecuroides. *Park. theat.* 648. *n.* & *f.* 2.

R. corniculatus ſpica longiore. *Rev. mon. t.* 109. *f.* 2.

R. corniculatus ſpicatus ſ. alopecuroides, flore albo & cœrtleo. *Mor. hiſt.* 2. 463. *ſ.* 5. *t.* 5. *f.* 46.

Rapuntium majus. *Ger.* 369. *emac.* 453. *f.* 1.

Spike oblong elongated, ſtyles ſomewhat hairy trifid, root-leaves cordate doubly-toothed.

10. Phyteuma ovata.

Lin. ſpec. ed. Willd. 923. *Schmidt bohem.* 1. *n.* 190.

P. Halleri. *Allion. pedem. n.* 430.

Rapunculus. *Hall. helv. n.* 683.—ſpicatus, flore purpureo-cœruleo. *Scheuch. it.* 518.

Spike ovate, ſtyles bifute longer than the flower emarginate-bifid, root-leaves cordate doubly-toothed.

11. Phyteuma virgata.

Lin. ſpec. ed. Willd. 924.

Campanula virgata. *Billard. ic ſyr.* 2. 11. *t.* 6.

Leaves lanceolate unequally toothed rugged, ſtem rod-like, flowers geminate ſeſſile ſcattered.

12. Phyteuma lobelioides.

Lin. ſpec. ed. Willd. 924. *Willd. phytog.* 1. *n.* 20. *t.* 4. *f.* 2.

Rapunculus orientalis heſperidis folio. *Tournef. cor.* 5.

Leaves linear-lanceolate toothletted biſpid, ſtem panicled, flowers geminate peduncled ſcattered.

13. Phyteuma lanceolata.

Lin. ſpec. ed. Willd. 924.

Rapunculus orientalis foliis anguſtis dentatis. *Tournef. cor.* 4.

Leaves linear-lanceolate very finely toothletted rugged, ſtem branched at the baſe, branches very ſimple leafy, flowers ſcattered geminate ſeſſile.

14. Phyteuma rigida.

Lin. ſpec. ed. Willd. 925.

Rapunculus orientalis altiſſimus, folio glabro & rigido. *Tournef. cor.* 4.

Leaves linear-lanceolate obſcurely toothletted ſmoothiſh, ſtem quite ſimple leafy, flowers ſcattered, peduncles three-flowered.

15. Phyteuma amplexicaulis.

Lin. ſpec. ed. Willd. 925.

Rapunculus orientalis Campanulæ patenſis folio. *Tournef. cor.* 4.

Leaves embracing cordate ovate, doubly-ſerrate, flowers ſcattered.

16. Phyteuma pinnata.

Lin. ſpec. 242. *Reich.* 1. 472. *Willd.* 925.

Rapunculus creticus ſ. pyramidalis altera. *Bauh. pin.* 93.

R. creticus petromarula. *Bauh. hiſt.* 2. 811. *t.* 812.

Leaves pinnate, flowers in cymes.

DESCRIPTIONS, *&c.*

The European ſpecies of Phyteuma have the flowers in a cloſe terminating head or ſpike: thoſe from the Eaſt have them ſcattered: in all, there is a little bractle to each flower, as in Plantago.

1. This is a very ſmall perennial plant; the ſtem being only about two or three inches high. In habit it reſembles Ph. hemiſpherica, but the leaves are petioled, ovate-lanceolate, and notched here and there. There is probably much variety in this circumſtance; for Haller ſays they are ſerrate or bluntly toothed, and Villars that they are entire. Flowers in ſmall number, ſupported by floral leaves that are wider than the others, cordate and blunt, by which it is alſo diſtinguiſhed from Ph. hemiſpherica. Head ſingle, thin, having not more than twenty large, blue flowers: teeth of the calyx the length of the germ. Style often bifid. Capſule two-celled or three-celled [p].—Native of the South of Europe.

2. Root-leaves ſometimes elliptic and blunt, or obſoletely cordate. Allioni's figure is very good, but too large. Villars's plant is perhaps a variety with a more oblong ſpike [q]. He thus deſcribes it: Root perennial, deep, fuſiform. Stem ſtrong, channelled, ſtraight, about a foot high. Leaves ſmooth, oblong, very ſlightly and remotely toothed, reſembling thoſe of *Campanula perſicifolia*. Flowers blue, in a cloſe ſpike from half an inch to an inch in length, with lineat almoſt imperceptible bractes.—Native of the Swiſs and Piedmonteſe mountains.

3. Head roundiſh, but when out of flower becoming more oblong. Leaves rigid, linear, with ſometimes a tooth or two, eſpecially above.—On mont Cenis, and the mountains of the Valais and Tuſcany [r].

4. It reſembles the preceding, but differs in having the leaves longer, flaccid and more lanceolate [s]. Haller remarks that the ſtyle is trifid. Scheuchzer obſerved it on the Speluga with a white flower.—Native of the South of Europe.

5. Root biennial or perennial. Leaves wide, blunt, crenate, dark green. Bractes cordate [t]. The lower leaves are petioled, the upper half embracing [u]. It varies with all the leaves ſpatulate and blunt [v].—Native of monte Baldo, and the Tyroleſe and Carniolian mountains.

6. The long woody root branches near the ſurface into ſeveral diviſions, each bearing a denſe tuft of pe-

[p] Haller, Scop. Villars, Linn. [q] Willdenow. [r] Idem.
[s] Idem. [t] Villars. [u] Scopoli. [v] Willdenow.

tioled, ſmooth, veiny ſerrate or rather crenate leaves, the firſt of which are heart-ſhaped, the reſt ovate-lanceolate. Stem ſimple, about a foot high, erect, ſlightly angular, clothed with alternate lanceolate leaves, the uppermoſt very acute, and ſomewhat recurved. A ſingle round head of blue flowers ſtands erect, on a few ovate acute ciliate bractes. The parts of fructification agree in ſtructure with *Campanula*, except that the corolla is divided to the very baſe, into five linear ſpreading ſegments, which in the bud cohere together, forming a curved horn, and ſeparating firſt at their lower part. Every part of the flower remains permanent, though faded, till the ſeeds are diſperſed, or longer. The herb is milky, but not acrid [f].

Native of the South of Europe, and of England in Surry, Suſſex, and Hampſhire, on chalk downs; as about Leatherhead, on Epſom downs, on the South downs; found near Maple-Durham in Hampſhire by Merrett; near Sutton and Dorking by Blackſtone; on Beacon-hill near Feverſham, Kent; alſo between Kingſbury and Harrow, and between Harrow and Pinner in Middleſex; and between Selbury-hill and Beacon-hill in the way to Bath. It flowers in july and auguſt.

β. Stem higher. Leaves petioled, lanceolate, and leſs rough. The flowers have often two ſtigmas.

γ. Leaves elliptic, oblong, blunt, ſoft, almoſt ſmooth. Stem almoſt a foot high.

δ. This has the habit of Campanula rotundifolia. Roots thick, twiſted, branched and knobbed. Stems thin, channelled, three or four inches long. Lower leaves round, heart-ſhaped: ſtem-leaves narrower the higher they are, having ſome diſtinct hair on their borders. Bractes very thin, filiform, a little longer than the flowers, which form a ſpherical ſpike, and are blue [g].

Monſ. Villars has named it from Monſ. Charmeil, a ſurgeon, who uſed this plant with great ſucceſs in venereal complaints.

7. The flowering ſpike is ovate, but it is lengthened out as it advances to maturity. It is a native of Bohemia, and is very diſtinct from all the ſpecies in the dark violet colour of the flower, the briſtle-ſhaped bractes, and the ſhape of the leaves. Villars's figure of *Ph. cordifolia* reſembles this, except in the head and bractes [h].

8. Root-leaves oblong, obtuſe, crenate, a little villoſe, cordate: ſtem-leaves lanceolate, oblong. Spike of flowers twice as long as it is wide, with very ſhort bractes. Flowers ſmall, with two ſtigmas.—Native of Dauphiné [i].

9. Root yellow on the outſide, white within, having ſome ovate little tubers hanging to it at bottom. Stem upright, not branched, a foot and half high, angular, ſmooth. Root-leaves cordate-ovate, on ſmooth petioles, grooved above, an inch and half long, running down a little into the petioles; they are an inch and half in length, and almoſt an inch in breadth, having frequently a blackiſh mark in the middle, and ſmall roundiſh blunt toothlets about the edge: ſtem-leaves alternate, linear-lanceolate, the uppermoſt quite entire; all bright green, ſmooth. Spike cylindrical, cloſe, two inches long, and one inch wide. Flowers ſeſſile, with a lanceolate bracte to it. Corolla blue [k], varying to whitiſh yellow. Capſule inferior, membranaceous, very thin, crowned with the radiating teeth of the calyx, pyramidal-globular, deeply two-grooved, and having three or five acute-angled ribs on each lobe, two-celled, opening by a round lateral hole between the lobes. Receptacle oblong, fleſhy, tubercled, faſtened longitudinally to the partition on each ſide. Seeds very numerous, ſmall, ovate, ſomewhat angular, ſmooth, ſhining, ſubferruginous, darker coloured at top and bottom [l].

Native of Germany, Switzerland, Auſtria, France and Italy. The whole plant abounds with a milky juice. The root is eaten boiled. Bees are fond of the flowers [m]. Cultivated 1683, by Mr. James Sutherland [n].

[f] Engliſh Botany. [g] Villars. [h] Willdenow. [i] Villars. [k] Pollich. [l] Gærtner. [m] Krocker. [n] Hort. kew.

10. Stem from eighteen inches to two feet in height, not branched. Root-leaves on long petioles, acutely gaſhed, like thoſe of the Nettle. Lower ſtem-leaves heart-ſhaped, upper ones more ſlender, long-lanceolate. Spike thick, longer than in ſome of the others. Bractes long, linear-lanceolate, and frequently two very large ones under the ſpike. Flower deep violet. Capſule two-celled [o].—Native of Bohemia, Switzerland and Piedmont.

11. For the deſcription of this plant ſee Campanula virgata, n. 77.

12. The lower toothlets of the leaves are elongated. It reſembles the preceding very much, but differs in having the flowers peduncled, the ſtem panicled with the branches brachiate, not ſtrict and rod-like, and the flowers narrower.—Native of Armenia, where it was found by Tournefort.

13. From the baſe of the rugged ſtalk ariſe filiform branches leafy to the middle, covered at the top with geminate diſtant ſeſſile flowers. Corolla of the ſame ſize with the preceding.—Found in Armenia by Tournefort.

14. The leaves appear to be quite entire, but when examined by a magnifier they are found to have very ſmall, thin-ſpread, blunt teeth on the thickened margin. It reſembles the preceding very much, but the leaves are ſmoothiſh and more rigid, the ſtem ſimple, ſmooth, and the peduncles ſomewhat branched and three-flowered.

15. Stem round, ſmooth, ſimple, leafy. Leaves ſmooth. Flowers on the upper part of the ſtem, diſtant, peduncled. Peduncles five, ſupported by an ovate-lanceolate, ſharply ſerrate, ſeſſile bracte. Corolla of the ſame ſize and appearance with P. ſpicata. Theſe are both natives of the Levant, and were found by Tournefort.

16. Stem ſomewhat branched, ſmooth, grooved. Leaves unequally pinnate; the lateral leaflets oblong-lanceolate, oblique, toothed on the lower margin only; the terminating leaflet very large, roundiſh-ovate, gaſh-toothed. Flowers the largeſt of any of the ſpecies, in many-flowered, ſcattered, alternate cymes, diſpoſed on the upper naked part of the ſtem.

Native of the iſland of Candia or Crete [p].]

PROPAGATION AND CULTURE.

All the European ſorts are hardy plants, which will thrive in the open air. They are propagated by ſeeds which ſhould be ſown in autumn, for if they are kept out of the ground till the ſpring, they frequently fail, or at leaſt lie a year in the ground. Theſe ſeeds ſhould be ſown on a bed of freſh undunged earth where they are deſigned to remain, for they do not thrive ſo well when they are tranſplanted; therefore the beſt method is to make ſmall drills croſs the bed about eighteen inches aſunder, and ſow the ſeeds therein; then cover them lightly over with earth, for if they are buried too deep, they will rot in the ground. In the following ſpring the plants will come up, when they ſhould be diligently weeded, which is all the care they require; only they ſhould be thinned where they are too cloſe, ſo as to leave them ſix or ſeven inches apart in the rows, and afterwards they require no farther attention but to keep them clear from weeds. In june the plants will flower, and if the ſummer prove favourable, they will produce ripe ſeeds.

As theſe plants do not continue above two or three years, there ſhould be ſeeds ſown every other year to continue the ſorts. They are plants which require little trouble to cultivate them, and their flowers make a pretty variety in large gardens, therefore they may be allowed a place amongſt other hardy flowers.

[PHYTEUMA. See *Lobelia* and *Reſeda*.]

PHYTOLACCA. (*From φυτον, a plant, and* Lacca, *a ſort of dye or varniſh.*)

Lin. gen. n. 588. *Reich. n.* 641. *Schreb. n.* 800. *Tournef. t.* 154. *Juſſ.* 84. *Gærtn. t.* 77.

Claſſ. 10. 5. Decandria Decagynia.

Nat. order of *Miſcellaneæ. Atriplices*, Juſſ.

[o] Haller. [p] Willdenow.

GENERIC

GENERIC CHARACTER.

CAL. none, unless the corolla be called a coloured calyx.
COR. *Petals* five, roundish, concave, spreading, bent in at top, permanent.
STAM. *Filaments* ten or eight or twenty, awl-shaped, the length of the corolla. *Anthers* roundish, lateral.
PIST. *Germ* orbiculate, depressed, divided externally by swellings, ending in eight or ten very short, spreading-reflex *styles*.
PER. *Berry* orbiculate, depressed, marked with ten longitudinal grooves, umbilicated with the pistils, and having as many cells.
SEEDS solitary, kidney-form, smooth.

OBS. Ph. dioica *has the sexes distinct. There is one species with eight, and another with twenty stamens.*

ESSENTIAL CHARACTER.

Cal. none. *Pet.* five, calycine. *Berry* superior, ten-celled, ten-seeded.

SPECIES.

[1. Phytolacca heptandra.
Retz. obf. 6. 29. *n.* 46.
Flowers seven-stamened six-styled, leaves lanceolate.]

2. Phytolacca octandra. *White-flowered Phytolacca.*
Lin. spec. 631. *Reich.* 2. 406. *Thunb. jap.* 189. *Brown. jam.* 232. 1.
P. mexicana. *Mill. dict. n.* 2.—baccis sessilibus. *Dill. elth.* 218. *t.* 239. *f.* 308.
Jamma gobo. *Kæmpf. amoen.* 828. *t.* 829.
Flowers eight-stamened eight-styled.

3. Phytolacca decandra. *Branching Phytolacca* or *Virginian Poke.*
Lin. spec. 631. *syst.* 438. *Reich.* 2. 406. *hort. cliff.* 177. *upf.* 117. *mat. med.* 118. *Gron. virg.* 161. *Brown. jam.* 232. 2. *Desfont. atlant.* 369. *Hall. helv. n.* 1007. *Du Roi harbk.* 2. 7. *Blackw. t.* 515. *Mill. illustr. Regn. bot. Berg. phyt.* 2. 165. *Plenck, ic. t.* 357. *Abbot, Georg. t.* 97.
P. vulgaris. *Mill. dict. n.* 1. *Dill. elth.* 318. *t.* 239. *f.* 309.
Solanum magnum virginianum rubrum. *Park. theat.* 347. 8.
S. racemosum americanum. *Raii hist.* 662. *Pluk. phyt. t.* 225. *f.* 3.
Flowers ten-stamened ten-styled.

4. Phytolacca icosandra. *Red Phytolacca.*
Lin. spec. 631. *Reich.* 2. 407. *Gærtn. fruct.* 1. 377. *Mill. fig.* 138. *t.* 207.
Flowers twenty-stamened ten-styled.

[5. Phytolacca dodecandra. *African Phytolacca.*
L'Herit. stirp. nov. 143. *t.* 69. *Ait. kew.* 2. 123.
Flowers fifteen-stamened, five to eight-styled.]

6. Phytolacca dioica. *Tree Phytolacca.*
Lin. spec. 632. *Reich.* 2. 407. *L'Herit. stirp. nov.* 145. *t.* 70. *Ait. kew.* 2. 123.
Flowers dioecous.

DESCRIPTIONS, *&c.*

[1. Root perennial. Stem two feet high, branched, upright, striated, smooth, hollow. Leaves scattered, petioled, lanceolate, quite entire, smooth, an inch and half in length. Flowers racemed, pedicelled, with some awl-shaped little bractes near and above the base. Corolla white, green underneath, spreading. Filaments the length of the petals, with roundish anthers. Pistils shorter by half. Berries fix in a calyx, distinct, yellow, pellucid, one-seeded. It is much smaller and more tender than the other sorts.—Native of America[1].

2. This has the stature of the common sort or *Ph. decandra:* but the leaves are whiter. The common peduncle is very short; and there are scarcely any pedicels. Calyx and corolla white, quite flat and not concave. Fruit red[2].

Native of Mexico. Cultivated in 1732, by James Sherard, M. D. It flowers from july to november[3].]

According to Mr. Miller Dr. Houstoun found it at Vera Cruz, where the inhabitants constantly used it at their tables. It seldom continues longer than two years, and when it flowers and seeds plentifully the first year, the plants frequently die before the following spring. The stalk is herbaceous, two feet high, about the size of a man's finger, and divides at top into two or three short branches. Leaves ovate-lanceolate, near six inches long, and almost three broad; they have a strong midrib, and several transverse veins, are of a deep green, and the foot-stalks are an inch and half long. The peduncles come out from the side of the branches opposite to the leaves, are seven or eight inches long, the lower part, about two inches in length, is naked; the remainder has sessile flowers, white with a blush of purple in the middle, cut into five segments almost to the bottom, and having from eight to fourteen stamens, and ten styles. Berries flat, with ten deep furrows; cells the same number, with one or two smooth seeds in each.

[Browne calls it Spanish Calaloe, and says it is a native of Jamaica, now cultivated in most of the kitchen gardens. It is a palatable wholesome green: the tender stalks are frequently served up for young Sperages (Asparagus,) and often prove a very agreeable succedaneum.

Thunberg on the contrary affirms that it is extremely poisonous; and relates, that having been eaten by two Japonese servants, one of them was eight days in recovering, and the other suffered during a much longer time.

Probably different species are confounded in these accounts.]

3. Root very thick and fleshy, as large as a man's leg, divided into several thick fleshy branches, which run deep in the ground. Stems three or four, herbaceous, as large as a good walking-stick, of a purple colour, six or seven feet high, dividing into many branches at the top. Leaves five inches long, and two inches and a half broad, rounded at their base, but terminating in a point, placed without order, on short foot-stalks; they are of a deep green, and in the autumn change to a purplish colour. The peduncles come out from the joints and divisions of the branches, and are about five inches long; the lower part is naked, but the upper half sustains a number of flowers ranged on each side like common Currants. Each flower stands upon a pedicel half an inch long, and the petals are purplish. Berry depressed, with ten furrows; having ten cells, filled with smooth seeds. It flowers in july and august, and in warm seasons the berries ripen in autumn.

[It is a very smooth plant, with an upright stem, frequently purple; the branches dichotomous at top. Leaves alternate, ovate, acute, quite entire, a little waved at the edge, on short petioles. Racemes solitary, opposite to the leaves. Peduncles striated. Pedicels spreading. Bractes awl shaped, pressed close. Calyx (or corolla) white or purple, five-parted; segments ovate, blunt. Filaments a little longer, five alternate and five opposite. Berry blackish blue, marked with ten or twelve grooves, one-celled, and containing ten or twelve seeds, which are semi-orbiculate, convex and thicker on one side, disposed in a ring in one row, adhering to the central receptacle[4].

Native of Switzerland, Spain and Portugal; Barbary, near Algiers; Virginia, Georgia, New England; Jamaica.—It was cultivated here in 1640, as appears from Parkinson[5]; who informs us that the inhabitants of North America use the juice of the root as a familiar purge.—An ounce of the dried root, infused in a pint of wine, and given to the quantity of two spoonfuls, operates kindly as an emetic, and is preferable to most others, as it hardly alters the taste of the wine. The roots are applied to the hands and feet in ardent fevers. Farriers give a decoction of them to drench cattle; and apply them in form of poultice for discussing tumours. Poultry are fond of the berries, but if eaten in large quantities, they give the flesh a disagreeable flavour[6].] The juice stains paper and linen of a beautiful purple colour, but it will not last long; if a method could be found of fixing the dye, it might be very useful.

[1] Retzius. [2] Linn. spec. [3] Hort. kew.
[4] Desfontaines. [5] Hort. kew.
[6] Cutler, mem. amer. vol. 1.

The vignerons in Portugal for many years uſed the juice of theſe berries to give a deep colour to the red Port wines, to which it was thought to communicate a diſagreeable taſte when mixed in too great a quantity. Complaint of this practice having been made to government, orders were given, that the ſtems of this plant ſhould be cut down and deſtroyed before they produced berries.

In North America and the Weſt Indies the young ſhoots are boiled and eaten like Spinach.

4. This plant is annual, always periſhing ſoon after it has perfected ſeeds. It riſes with an herbaceous ſtalk, from two to three feet high, with ſeveral longitudinal furrows, and changes at the end of ſummer to purple. It divides at top into three or four branches. Leaves lanceolate, ſix or ſeven inches long, and almoſt three broad in the middle, of a deep green, on ſhort foot-ſtalks; ſome are alternate, others oppoſite, and they are frequently oblique to the foot-ſtalk. The peduncles come out from the ſide of the branches oppoſite to the leaves; they are nine or ten inches long, the lower part being naked, but for a ſhorter ſpace than in the other ſorts: the upper part narrow and commonly inclined. The flowers are larger, white within, of an herbaceous colour on their edges, and purpliſh on the outſide, on ſhort pedicels. The ſtamens vary in number from eight to nine or eleven: [in the lower flowers, according to Linneus, there are certainly twenty; and Gærtner affirms that they vary from eight to twenty. Berry globular, ſcarcely depreſſed, not grooved, hollowed at top with a ſmall point, and terminated by ten permanent ſtyles, ſmooth, blueiſh black, pulpy, ten-celled: ſtyles clothed with their proper membrane, which is very tender: pulp dark blood-red. Seeds ſolitary, lens-ſhaped, very ſhortly beaked, ſmooth, ſhining, black, faſtened to the bottom of the cells near the axis of the fruit [a].] Theſe berries are very ſucculent, and their juice ſtains paper and linen of a beautiful purple colour, but it is not permanent.

[Native of the Eaſt Indies. Cultivated by Mr. Miller in 1758 [b].

5. This is a ſhrub, a fathom in height. Stem upright, rude, rubercled, aſh-coloured. Leaves alternate, ovate, entire, acuminate, acute at the baſe, thickiſh, ſpreading, permanent, four inches long, from eighteen to twenty-four lines in breadth. Petioles round on one ſide, channelled on the other, pubeſcent, one-third of the length of the leaf. Racemes terminating, but by a branchlet puſhing out from the uppermoſt axil they become lateral, and at the ſame time oppoſite to a leaf; they are upright, but when in fruit nodding or pendulous, on ſhort peduncles, villoſe, bracted, ſix inches long. Flowers ſcattered, on ſhort pedicels, herbaceous, three lines wide. Bracte acute, ſmall, under each pedicel; with other very minute bractes on the pedicel itſelf. Calyx (or corolla) five-parted to the very baſe. Filaments commonly fifteen, ten of which are alternate in pairs, the other five ſolitary, ſhorter than the calyx, inſerted into the bottom of the calyx, ſpreading, permanent; ſometimes there is only a ſingle row, and then there are but ten ſtamens. Germ roundiſh with from five to eight corners. Styles as many as there are ſwellings in the germ, moſt commonly five. Berry roundiſh, flattened, many-angled, but commonly five-angled, five-celled, marked at top with lines from the ſtyles then growing to the berry, fleſhy, ſoft, red, with a ſaffron-coloured juice, four lines in diameter. Seeds ſolitary, kidney-form, black. It is diſtinguiſhed from *Ph. ottandra* and *decandra* by its ſhrubby ſtalk, and decandrous flowers.

Native of Abyſſinia, where it was found by James Bruce, Eſq. and by him the ſeeds were communicated to the Paris garden [c], and to the Royal garden at Kew in 1775. It flowers in may and june [d].

6. This is a ſhrub two fathoms in height. Stem upright, a little branched, very thick, gray. Leaves ſcattered, oblong-ovate, acuminate, entire, ſmooth, flat or aſcending on the ſides, five inches long, and two inches and a half wide. Petioles ſpreading, cylindrical, reddiſh, equal to half the leaf in length. Racemes terminating, peduncled, ſolitary, pendulous, bracted, ſix inches long. Flowers ſcattered, pedicelled, ſpreading very much, whitiſh green; the males five or ſix lines in breadth, the females ſmaller by half. Bracte ſmall, acute, under the pedicel; with another under ſome flowers of the ſame ſhape with the calyx. Calyx (or corolla) five-leaved. Stamens about thirty, and a rudiment of a germ in the male flowers. In the females a head, compoſed of from ten to twelve germs, and as many ſtyles as there are ſwellings. Berry orbicular-flatted, umbilicated, toruloſe, many-celled or compoſed of united *acini*, fleſhy, ſoft, watery, ſeeming to be green even when ripe, half an inch in diameter. Seeds ſolitary, kidney-form, ſhining, brown. Both male and female plants flower every ſpring in the Paris garden, but ſtill the latter has continued barren [e].

It is a native of South America, and was cultivated by Mr. Miller in 1768 [f].]

PROPAGATION AND CULTURE.

3. Sow the ſeeds in the ſpring upon a bed of light earth, and when the plants come up tranſplant them into the borders of the flower-garden, allowing them ſpace to grow, for they will overbear other plants, if they are too near them, eſpecially if the ſoil be good. Clear them from weeds, and in the autumn they will produce flowers and fruit. The firſt froſts will deſtroy the ſtems, but the roots will abide, and ſhoot in the ſpring. In very ſevere winters the roots will be deſtroyed, eſpecially in a wet ſoil, unleſs the ſurface be covered with mulch.

2. 4. Theſe being leſs hardy, the ſeeds ſhould be ſown upon a moderate hot-bed in the ſpring. When the plants are fit to remove, tranſplant them into another hot-bed, ſhading them till they have taken new root. Then treat them as other tender exotic plants; and at the beginning of july, ſet them out upon a warm border, or in pots filled with light rich earth, and ſhaded till they have taken new root: water them duly in dry weather, and keep them clean from weeds. Theſe plants perfect their ſeeds every autumn, and may therefore be eaſily preſerved.

6. Plant cuttings during the ſummer months, in pots filled with light earth, and plunged into a moderate hot-bed, covering the pots with hand-glaſſes, and ſhading them. In five or ſix weeks they will put out roots; then plant each in a ſmall pot, plunge them into the bed again, ſhade them till they have taken root, and then gradually inure them to the open air, where they may remain to the end of ſeptember, when they muſt be removed into a moderate ſtove for the winter ſeaſon.

PICEA. See *Pinus*.

[PICK-TOOTH. See *Daucus*.

PICNOMON. See *Cnicus*.

PICRAMNIA. (*From* πικρος, *bitter, and* θαμνος *a ſhrub; the whole of it being remarkably bitter.*)

Lin. gen. Schreb. n. 1517. *Swartz prodr.* 27.

Claſſ. 22. 5. Dioecia Pentandria.—Triandria Digynia. *Sw.*

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* one-leafed, three or five-parted: *ſegments* lanceolate, erect.

COR. *Petals* three or five, lanceolate, from erect ſpreading, longer than the calyx.

STAM. *Filaments* three or five, awl-ſhaped, approximating at the baſe, erect, longer than the corolla. *Anthers* ovate, twin.

* *Female.*

CAL. as in the Male, permanent.

COR. as in the Male.

PIST. *Germ* oblong, ſomewhat compreſſed. *Styles* two, ſhort, recurved, permanent. *Stigmas* ſimple, acute.

PER. *Berry* ovate-roundiſh, two-celled.

SEEDS two in each cell, ovate-oblong.

[a] Gærtner. [b] Hort. kew. [c] L'Heritier. [d] Hort. kew. [e] L'Heritier. [f] Hort. kew.

Obs. *Swartz describes three ſtamens, a three-parted calyx and a three-petalled corolla. In the ſpecimens ſent to Schreber by Crudy there are five ſtamens and five-cleft flowers.*

The Berry ſometimes, but very ſeldom, is three-celled and one-ſeeded. Is two the natural number of the fruit?

ESSENTIAL CHARACTER.

Cal. three or five-parted. *Cor.* three or five-petalled. *Berry* two-celled.

SPECIES.

1. Picramnia Antideſma.
Swartz prodr. 27. *deſcr.* 218.
Antideſma fruticoſa ramulis teretibus racemis laxis terminalibus. *Brown. jam.* 123.
Berberis frut. racemoſa, fraxini folio alato fructu nigro dipyreno. *Sloan. jam.* 2. 101. *t.* 209. *f.* 2. *Raii hiſt.* 3. *dendr.* 65.
Racemes very long, flowers three-ſtamened.
2. Picramnia pentandra.
Swartz deſcr. 220.
Racemes ſhorter, flowers five-ſtamened.

DESCRIPTIONS, &c.

1. This is a ſmall tree, with an upright weak even trunk: branches ſubdivided, rod-like, ſpreading, bending down, ſmoothiſh, with an aſh-coloured bark. Leaves pinnate, a foot long and more: leaflets petioled, alternate, elliptic with a blunt tip, entire, nerved and veined, ſmooth, bent down each way by the ſide of the petiole. Petioles roundiſh, ſpreading, ſmooth: petiolets very ſhort, pubeſcent, red. Racemes terminating, from one to two feet in length, filiform, ſtriated, looſe, pendulous, many-flowered. Flowers alternately conglomerate, peduncled, whitiſh-green. Peduncles from five to ſeven, cluſtered, whitiſh, longer than the flowers. Males deciduous. Calyx three-parted. Petals three. Filaments three. Anthers ruſous. Females the ſame ſize with the males. Berries oblong, the ſize of a Gooſeberry when ripe, two-celled: cells two-ſeeded, at firſt ſcarlet, afterwards black. Native of Jamaica and Hiſpaniola, in mountain coppices [x].

Dr. Browne ſays it is pretty frequent about St. Mary's in Jamaica, and ſeldom riſes above eight or nine feet from the ground; it was not put to any uſe there. Swartz relates, that it is looked upon by the negroes as antivenereal, and that they commonly uſe an infuſion of it in the colic. The whole plant is very bitter, and is called *Mojo Bitters* in Jamaica. It flowers in auguſt, and the fruit is ripe in november [y].

Browne uſes Burman's appellation, as more expreſſive of the virtues of this plant, which he thinks ſhould be the principal ſource whence the names of vegetables ought to be derived, when they are remarkably noted for any.

2. This alſo is a ſmall tree, with the branches, branchlets and leaves as in the preceding; but the leaflets are commonly wider. Racemes much ſhorter, commonly ſubdivided at the baſe, nodding. Flowers a little ſmaller, alternately cluſtered; (in ſcattered little balls) pedicels pubeſcent. Calyx five-parted. Petals five. Filaments five. Anthers roundiſh. In the female flowers the calyx is permanent. Germ roundiſh, without any ſtyles; but two-headed ſtigmas.

Native of the Weſt Indies: found by Ryan at Palmeto point in the iſland of Montſerrat [z].

PICRIS. (*Picris of Dioſcorides: from πικρος, bitter.*)
Lin. gen. n. 907. *Reich. n.* 986. *Schreb. n.* 1231. *Gærtn. t.* 159. *Juſſ.* 170. Helminthotheca. *Voiſſ. act. gall.* 1721. 47. 25. 26.
Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.
Nat. order of *Compoſitæ Semiflosculoſæ. Cichoraceæ*, Juſſ.

GENERIC CHARACTER.

Cal. *Common* double. *Outer* very large, five-leaved: *leaflets* cordate, flat, looſe, converging. *Inner* imbricate, ovate.
Cor. *Compound* imbricate, uniform: with numerous hermaphrodite *corollets*.

[x] Swartz. [y] Idem. [z] Idem.

Proper one-petalled, ligulate, linear, truncate, five-toothed.
Stam. *Filaments* five, capillary, very ſhort. *Anther* cylindric, tubular.
Pist. *Germ* ſubovate. *Style* the length of the ſtamens. *Stigmas* two, reflex.
Per. none. *Calyx* unchanged, at length reflex.
Seeds ſolitary, ventricoſe, tranſverſely grooved, blunt. *Down* feathered, ſtipitate.
Rec. naked.

ESSENTIAL CHARACTER.

Cal. calycled. *Recept.* naked. *Seed* tranſverſely grooved. *Down* feathered.

SPECIES.

1. Picris echioides. *Rough Ox-tongue.*
Lin. ſpec. 1114. *Reich.* 3. 619. *hort. cliff.* 387. *upſ.* 241. *Hudſ. angl.* 342. *Wither. arr. ed.* 3. 673. *Curt. lond.* 3. 51. 150. *Relh. cant. n.* 572. *Sibth. oxon. n.* 667. *Neck. gallob.* 323. *Villars dauph.* 3. 149.
Hieracium echioides capitulis Cardui benedicti. *Bauh. pin.* 128. *Raii hiſt.* 233. *ſyn.* 163. *Petiv. brit.* 1. 12. *f.* 12. *Mor. hiſt.* 3. 64. *n.* 41. *ſ.* 7. *t.* 5. *f.* 38. *Bauh. hiſt.* 2. 1029. 1.
Bugloſſum luteum. *Ger.* 655. 2. *emac.* 798. 1.—*f.* Lingua bovis. *Park. theat.* 800.
B. echioides luteum Hieracio cognatum. *Lob. ic.* 1. 577. 2.
Outer perianths five-leaved larger than the inner one, which is awned.
2. Picris aculeata. *Prickly Ox-tongue.*
Vahl ſymb. 2. 89. *Deſcnt. atlant.* 221. *Gron. orient. n.* 243.
Hieracium montanum longifolium ſinuatum aſperitudine Borraginis. *Raii hiſt.* 139.
H. mont. Borr. facie aſperum dentatum. *Cup. hort. caibol.* 95.
H. tortuoſum ſiculum echioides, integro bullato folio ſpinoſo, capitulis tuberoſis. *Bocc. opp.* 8.
Helminthotheca hiſpida, pedunculis florum tumentibus. *Vaill. mem. acad.* 1721. *p.* 206.
Hiſpid rough, ſtem naked at top, leaves obovate-oblong unequally toothed, flowers corymbed, peduncles thickened at top, down feathered ſtiped.
3. Picris hieracioides. *Hawkweed Ox-tongue.*
Lin. ſpec. 1115. *fyſt.* 711. *Reich.* 3. 619. *hort. cliff.* 387. *fl. ſuec. n.* 686. *Gærtn. fruct.* 2. 366. *Wither. arr. ed.* 3. 673. *Engl. bot.* 196. *Relh. cant. n.* 573. *Sibth. oxon. n.* 668. *Hall. helv. n.* 24. *Scop. carn. n.* 953. *Pollich pal. n.* 725. *Neck. gallob.* 322. *Krock. ſileſ. n.* 1249. *Villars dauph.* 3. 148. *Gmel. ſib.* 2. 39.
Hedypnois hieracioides. *Hudſ. angl.* 342.
Cichoreum pratenſe luteum hirſutie aſperum. *Bauh. pin.* 126. *Park. theat.* 777.
Hieracium aſperum majori flore, in agrorum limitibus. *Bauh. hiſt.* 2. 1029. 2. *Raii hiſt.* 233. *ſyn.* 167.
H. aſperum. *Ger.* 234. 8. *emac.* 298. 7.
Perianths looſe, leaves entire, peduncles ſcaly up to the calyx.
4. Picris flexuoſa.
Linn. tranſ. 2. 349.
P. japonica. *Thunb. jap.* 299.
Perianths bifid, leaves toothed cordate-embracing, ſtem grooved hiſpid.
5. Picris aſplenioides.
Lin. ſpec. 1115. *Reich.* 3. 620. *Vahl ſymb.* 2. 90. *Deſcnt. atlant.* 222.
Leontodon muricatum. *L'Herit. ſtirp. nov.* 173. *Dict. noſtr. n.* 4.
Virea ſcabra. *Scop. inſubr.* 2. 85. *t.* 13.
Helminthotheca hiſpidoſa aſplenioides, ſucco ſulphureo. *Vaill. mem.* 1721. *p.* 206.
Stem proſtrate at the baſe; leaves rough, the lower runcinate, lobes rounded, calyxes imbricate, leaflets reflex at the tip.
6. Picris repens.
Lour. cochinch. 478.
Outer perianths imbricate ſhort, inner cylindric eight-leaved even, ſtem creeping.

DESCRIP-

DESCRIPTIONS, &c.

1. Root annual, branched. Root-leaves ovate, crenate, rigid, with numerous warty protuberances, set with short spinose ciliæ; as are also the nerves and margins of the leaf. Stem two or three feet high, round, firm, striated, usually reddish, much branched; both stem and branches irregularly set with scattered rigid spines, hooked at the end. Stem-leaves embracing, oblong or cordate-lanceolate, pointed, entire, thick set with tubercles and spines, particularly on the margins and midrib. Flowers solitary, on grooved peduncles gradually thickening upwards. Leaves of the outer calyx very spreading, heart-shaped, acuminate and ending in a sharp awn, fringed with rigid ciliæ: scales of the inner calyx ciliate on the back. Corolla yellow. Seed shining, of a red orange colour, and when viewed with a glass very beautiful from its numerous transverse streaks or grooves. Down the length of the inner calyx, on a stipe three or four lines in length; rays downy [a].

The flower expands at four or five in the morning, and never closes before noon; sometimes it remains open till nine at night [b].

It grows not unfrequently on banks, on the edges of corn fields, and in woods that have been cut down; flowering in june and july.

The only use to which this singular plant has been applied is as a pot-herb, to which purpose its appearance is certainly no recommendation [c]. It can only be eaten when young, and then it is said to be agreeable; the juice is milky, but not too acrid [d].

2. The root-leaves and lower stem-leaves obovate-oblong, blunt, running down into a short petiole, unequally toothed, having short stiff hairs scattered over them. Stem upright, firm, thick, striated, rough, hispid, having on it a few, small, lanceolate, sessile leaves. Flowers in a loose corymb. Peduncles thickened upwards, hairy, simple or forked, unequal. Calyx round, loose: leaflets linear-lanceolate, hairy on the back. Corolla yellow. Down stiped, white, feathered. Seeds brown, slightly striated transversely [e].

It differs from the preceding in having no outer five-leaved perianth [f].

Native of Barbary. Vahl found it near Zowan, a city of Tunis; and Desfontaines on mount Atlas and uncultivated hills of that country.

3. This is a plant of rude growth, and not very attractive appearance. The root is perennial, or at least biennial. Stem three feet high, round, furrowed, rough with stiff hairs; much branched; the branches furrowed, purple on their upper side and in their axils, as Linnæus most truly observes. Lower leaves on foot-stalks; upper sessile, oblong or lanceolate, acute; uppermost approaching to linear; all mostly undivided, except that the root-leaves are frequently grossly toothed. The herb is rough with hooked bristles. Peduncles branched: each branch bearing a single flower; the lateral ones elongated so as to rise above the central stem. Calyx scarcely to be called double; numerous loose scales, all rough on the back, on the upper part of the peduncle approaching to, and at length imbricated with, and forming a part of the calyx: the inner row almost linear, parallel, and exactly the length of the seed-down, which is slightly feathery and sessile; whence Hudson has made this plant a *Hedypnois*: but that, as Dr. Stokes has observed, is an artificial genus, the species of which are no ways naturally allied; and the down being sessile or stiped, affords no certain permanent character in this tribe.

The corolla is bright yellow; and the seeds are longitudinally and transversely furrowed [g]. According to Gærtner, they are uniform, oblong, roundish, drawn to a point at both ends, netted and rugged, but without any lateral sutures: the down is twice as long as the seed, and has the rays filiform, regularly bearded. Receptacle flat, with shallow pits inclining to a pentagon figure, and between them a minute tear. It differs from his *Picris* in having the rays of the down uniform; and from his *Helminthia*, in the down being not apparently stiped.

Native of many parts of Europe; with us it occurs abundantly about the borders of fields, in a gravelly or calcareous soil, flowering in july and august.

4. Stem grooved and angular, flexuose, bristly-hispid, branched at top, almost erect, scarcely a foot high. Leaves alternate, all sessile and embracing, subcordate, oblong, villose and rugged, the lower ones a finger's length, the upper ones gradually smaller. Flowers on the branches terminating, solitary. Peduncles or branches alternate, simple, hispid. Calyx double, the lower reflex. Corollas yellow, with a white feathered down.—Native of Japan [h].

5. Root perennial, fusiform, the thickness of a man's little finger. Stems several, prostrate at the base, rough-haired especially at bottom, angular, grooved, branched below: branches ascending, simple. Root-leaves many, wide, runcinate, the sinuses bowed: lobes irregular, rounded at top, unequal, often turned back, sometimes narrower at the base; the outmost larger, blunt. Peduncles one-flowered, striated, hispid, simple, firm, erect, gradually thicker upwards, covered with linear-spatulate, blunt, scattered leaflets, somewhat remote from each other. Calyx cylindric, imbricate, hispid: leaflets lanceolate-linear, obtuse; the outer reflex at the tip, and somewhat rigid. Flower the size of Tragopogon Dalechampii: corollets sulphur-coloured above, rose-violet underneath. Seed smooth, rufescent, oblong, slightly streaked across. Down stiped, feathered, white. Receptacle naked, flattish [i].

Native of Barbary; found by Vahl abundantly on the sandy coast of Tunis; and by Desfontaines near Hamamelif.

See L'Heritier's description of this plant under *Leontodon muricatum*.

6. Stem procumbent, slender, round, smooth. Leaves lanceolate linear, blunt, repand, toothletted, smooth. Flowers few, yellow, on long, scattered peduncles, almost equal to the leaves. Calycle short, imbricate: inner calyx oblong, round, eight-leaved; leaflets linear, even, equal. Down subplumose, stiped. Seeds grooved longitudinally, not transversely. Root slender, very bitter.—Native of China near Canton [k].

Picris pyrenaica of Gærtner; see under *Hieracium pyrenaicum*.—Receptacle flat, obsoletely excavated, smooth. Seeds roundish, drawn to a point at both ends, divided by four longitudinal depressed streaks, as it were into so many valves, and besides this muricated with thick transverse wrinkles, of a red ferruginous colour: the marginal seeds curved; those in the centre straight. Down feathered, subsessile, longer than the seed, caducous; all the rays filiform, equally bearded [l].

PICRIS. See *Aparzia*, *Hedypnois*, *Hieracium*, *Leontodon*, *Tragopogon*.

PICRIUM. (*From* πικρος, *bitter.*)
Lin. gen. Schreb. n. 1726. *p.* 791. Cottonbea.
Adul. t. 27. *Juss.* 141.
Class 4. 1. Tetrandria Monogynia.
Nat. order of *Rotaceæ*. *Gentianæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, four or five-cleft, permanent: *segments* linear, acute, erect.

COR. one-petalled, funnel-form: *tube* the length of the calyx: *border* four or five-cleft: *segments* ovate, acute.
Nectary: scales four or five: each at the base of each filament, between that and the tube of the corolla.

STAM. *Filaments* four or five, filiform, almost the length of the corolla, inserted into the tube. *Anthers* sagittate.

PIST. *Germ* oblong. *Style* filiform, longer than the corolla. *Stigma* capitate, bilamellate.

PER. *Capsule* ovate, half-two-celled, two-valved.

SEEDS very many, minute, fastened to the receptacle.

OBS. *It is allied to* Gentiana.

[a] Woodv. Mss. and Curtis. [b] Withering. [c] Curtis. [d] Withering. [e] Desfontaines. [f] Vahl. [g] Engl. bot. and Woodv. Mss.

[h] Thunb. in Linn. trans. [i] Desfontaines. [k] Loureiro. [l] Gærtner.

ESSENTIAL CHARACTER.

Cal. four or five-cleft. *Cor.* one-petalled, four or five-cleft. *Nect.* of four or five scales. *Stigma* bilamellate. *Caps.* half-two-celled, two-valved.

SPECIES.

1. Picrium spicatum.
Coutoubea spicata. *Aubl. gui.* 1. *p.* 72.
With ovate-oblong sharp leaves, and white flowers.

2. Picrium ramosum.
Coutoubea ramosa. *Aubl. gui.* 1. *p.* 74.
With narrow sharp-pointed leaves, and purple flowers.

DESCRIPTIONS, *&c.*

1. This is an annual, of about three feet high. The root is fibrous, branched, and somewhat woody. The stem round and straight: leaves opposite, rather fleshy, sessile, smooth, glaucous, lanceolate, perfectly entire, sometimes ternate, verticillate. Flowers spiked, axillary, and terminal: the inferior ones opposite in the spike, afterwards alternate; the four uppermost verticillate: all sessile at the base, and guarded by three bractes, of which the two lateral ones are smaller. Corolla white, not deciduous. The whole plant is bitter: it flowers at various times of the year. Its native name is Coutoubea. It is found near the banks of rivulets, pathways, &c. in Cayenne and Guiana.

2. This species differs from the former in having a branched stem, smaller and narrower leaves; solitary flowers, which are subsessile at the bosoms of the leaves, and have a purple corolla. The capsule is subcompressed: the leaves at the extremities of the branchlets are extremely narrow. It flowers at almost all times of the year, and is called Coutoubea also. It is found in woods and by sides of rivulets[m].

PIERCEA. See *Rivina.*

PIGEON PEA. See *Cytisus Cajan.*

PIG-NUT. See *Bunium.*

PILCORN or PILLIS. See *Avena nuda.*

PILEWORT. See *Ranunculus.*

PILOCARPOS. (*From πιλος, a hat or other covering of the head, and καρπος, a fruit.*)
Vahl eclog. 29. *t.* 10.
Class. 5. 1. Pentandria Monogynia.
Nat. order of *Dumosæ. Rhamni*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* inferior, very small, five-leaved: *leaflets* ovate, rounded.
COR. five-petalled. *Petals* flat, small, ovate.
STAM. *Filaments* five, inserted under the germ, erect, a little shorter than the petals. *Anthers* small, subcordate, erect.
PIST. *Germ* superior, flatted-globular, smooth, having five lines engraved on it at top towards the style. *Style* scarcely any. *Stigma* subsessile, acute.
PER. *Capsule* composed of five grains (cocculi), two or three, sometimes four of which are abortive, fastened from the base to the middle to an angular woody short receptacle, distinct above.
SEEDS solitary, arilled.

OBS. *It is very nearly allied to Euonymus.*

ESSENTIAL CHARACTER.

Cal. five-leaved. *Cor.* five-petalled. *Filaments* inserted below the germ. *Per.* with from two to five cocculi, united below, elastic.

SPECIES.

1. Pilocarpus racemosus.
Vahl eclog. 1. 29. *Lin. spec. ed. Willd.* 1133.
Euonymus latifolius racemosus, fructu pentagono atropurpureo. *Plum. spec.* 18. *ic.* 119. *t.* 127.

DESCRIPTION, *&c.*

This is a low Shrub, with round, smooth, pendulous branches, covered with an ash-coloured bark, and alternate, short, purplish-brown branchlets. Leaves on the latter, approximating, alternate, the two last almost opposite, two or three inches long, elliptic, very obtuse, commonly emarginate, more acute at the base, quite entire, membranaceous, smooth, veined, very minutely dotted on both sides. Petioles very short, smooth, flat above, convex underneath, purplish-brown. Stipules none. Racemes from the top of the branches, with a branchlet growing out at the farther side, solitary, a foot long and more. Peduncle straight, round, smooth, purplish brown. Pedicels scattered, about an inch in length, spreading very much, one-flowered. Bractes two above the middle of the pedicel, very minute, ovate, alternate, remote. Flowers bright purple. Petals terminated by a minute dagger-point, and having on the upper surface a longitudinal line, a little raised, springing from the tip, forked towards the middle of the petal, the divisions divaricating and running to the edges of the petal. Anthers of a deep golden colour, and shining very much. The cocculi or component parts of the capsule semiorbicular, more gibbous at the base, convex on the back and sides, more acute on the inner margin, the outer substance somewhat fleshy, the inner coriaceous; at first they have impressed dots scattered over them, but when ripe they are grooved longitudinally archwise, and open with a spring at top by the future. Seeds black and very smooth. Aril membranaceous, cordate, acute, keeled on the outside, closing the ventral triangular aperture of the inner cocculus.—Native of the West Indies. Found by Ryan in the island of Montserrat*.

PILOSELLA. See [*Arabis, Draba, Gnaphalium,*] *Hieracium,* [*Sideritis, Thlaspi.*

PILSEN. See *Boletus.*

PILULARIA. (*So named by Jussieu, from the receptacle of the seed having the shape and size of a common pill.*)
Lin. gen. n. 1183. *Reich. n.* 1300. *Schreb. n.* 1619. *Vaill. par. t.* 15. *f.* 6. *Dill. muse.* 538. *t.* 79. *f.* 1. *Juss. act. gall.* 1739. *p.* 251. *t.* 11. *Juss. gen.* 16.
Class. 24. 1. Cryptogamia Miscellaneæ.
Nat. order of *Filices* or *Ferns.*

GENERIC CHARACTER.

Common Receptacle globose, with four cells and four valves, lined with numerous *anthers*, and many globose *germs* beneath them.

SPECIES.

1. Pilularia globulifera. *Pill-wort* or *Pepper-grass. Lin. spec.* 1563. *fil.* 942. *Reich.* 4. 439. *fl. suec. n.* 950. *Hudf. angl.* 462. *Wither. arr. ed.* 3. 760. *Engl. bot.* 521. *Relton*, 40. *Fl. dan.* 223. *Pallas it.* 1. 431. *Allion. pedem. n.* 2420. *Bulliard*, 375. *Pluk. phyt. t.* 48. *f.* 1.

P. palustris junciifolia. *Vaill. par.* 159. *t.* 15. *f.* 6. *Dill. muse.* 538. *t.* 79. *f.* 1. *Juss. in act. par.* 1739. *p.* 240. *t.* 11.

Graminifolia palustris repens, vasculis granorum piperis æmulis. *Raii hist.* 1385. *syn.* 136. *Mor. hist.* 3. 608. *s.* 15. *t.* 7. *f.* 49.

Gramen piperinum. *Merr. pin. Petiv. brit. t.* 9. *f.* 8.

DESCRIPTION, *&c.*

Stem perfectly prostrate and trailing, throwing out numerous roots at every joint, by which it creeps to a considerable extent, and also about three delicate slender leaves, two or three inches in length, simple, upright, awl-shaped, smooth. Fructifications globular, like pepper-corns, downy, solitary, sessile or on very short pedicels at the base or axil of the leaves. What at first sight seems a capsule, is in fact a hollow receptacle, as in the Fig, which separates into four valves, and is internally divided into as many cells: the valves are lined with organs of fructification, several sessile club-shaped anthers being in the upper part, and about as many oblong germs occupying the lower. Jussieu says the anthers are most numerous; he also remarks that the seeds are coated. Mr. Sowerby found the germs shaped like an Acorn reversed, and terminating in a small acute style.

From the above description it appears that the *Pilularia* has almost as good a right to a place among the perfect flowers as the Fig, and might perhaps be ranged in the order *Polyandria* of the class *Monoecia.* In habit and sensible qualities it has most affinity with the *Equisetum, Lycopodium* and other plants of obscure fructification, which are akin to the proper Ferns. The fructification is produced from may to the end of autumn. It is found in shallow ponds, and watery places, on gravelly or sandy commons or heaths. On Hillingdon-common and Hounslow-heath in Middlesex.

[m] Aublet.

* Vahl.

Near Yarmouth in Norfolk, St. Faith's Newton near Norwich[a]: Hainford and Stratton heaths in the same county. In the ponds on the upper part of Streatham-common in Surrey, I observed it near fifty years ago; where Plukenet had before shewn it to Doody. About two miles from Mold, on the north side of the Chester road, near Offa's dyke, by Mr. Griffith.

PILUM. See *Abrus*.

PIMELÆA. (*From* πιμελη, *fatness*; *or* πιμελης, *fat or fuet.*)

Smith, nov. holland. 31.

Class. 2. 1. Diandria Monogynia.

ESSENTIAL CHARACTER.

Cal. none. *Cor.* four-cleft. *Stam.* inserted into the throat. *Nut* covered with a bark, one-celled.

SPECIES.

1. Pimelea linifolia.
   Smith, nov. holl. 1. 31. *t.* 11. *Lin. spec. ed. Willd.* 50.
   Leaves linear-lanceolate, heads terminating involucred, corolla villose on the outside.
2. Pimelea Gnidia.
   Lin. spec. ed. Willd. 50.
   Banksia Gnidia. *Forst. gen.* 8. *act. upf.* 3. 173.
   Passerina Gnidia. *Lin. suppl.* 226. *Forst. prodr. n.* 170.
   Leaves oblong-lanceolate acute very smooth, corolla villose on the outside.
3. Pimelea pilosa.
   Lin. spec. ed. Willd. 50.
   Banksia tomentosa. *Forst. gen.* 8.
   B. pilosa. *Forst. act. upf.* 3. 174.
   Passerina pilosa. *Lin. suppl.* 226. *Forst. prodr. n.* 171.
   Hairy, leaves linear obtuse.
4. Pimelea prostrata.
   Lin. spec. ed. Willd. 51.
   P. lævigata. *Gærtn. fruct.* 1. 186.
   Banksia prostrata. *Forst. gen.* 8. *act. upf.* 3. 175.
   Passerina prostrata. *Lin. suppl.* 227. *Forst. prodr. n.* 172.
   Leaves ovate sessile fleshy.

DESCRIPTIONS, *&c.*

1. This is a native of the coast of New South Wales, among rocks. It has a small zigzag root, from which rises a straight round smooth upright stem, generally branched in an irregular manner, though sometimes appearing dichotomous, in consequence of the young branches springing in pairs from the upper part of the old flowering ones: the bark is reddish, cracking longitudinally, and its inner layer is remarkably silky. Leaves clothing the younger branches, opposite, on very short footstalks, slightly spreading, linear-lanceolate, varying much in breadth, sharpish, entire, with a simple nerve. Stipules none. Flowers in terminal heads, numerous, inodorous. Bractes four, broad, ovate, entire, close to the flowers. Corolla very slender, tubular, snow-white, externally silky; the limb in four equal ovate spreading segments, with a red spot at the base of each within side. Stamens two, their filaments rather shorter than the limb, and inserted into the base of its two segments, so that they are altogether without the tube, and not within it, as in Daphne, Passerina, &c. Anthers oblong, yellow. Germ superior, oval, green, very small, smooth. Style rather longer than the tube, simple and capillary. Stigma headed, very small. Fruit a small oval dry berry or rather drupe, invested with the permanent base of the corolla, and containing a solitary hard seed or nut. Common receptacle clothed with numerous white permanent hairs[b].

2. The leaves of this are more rigid than the others, and resemble very much those of *Gnidia*, whence its trivial name. It is a native of New Zealand, in the fissures of rocks, both on the coast and on the tops of mountains.

3. This also is a native of New Zealand, where it was found, with the preceding and following species, by Forster[c].

4. Gærtner thus describes the fruit of this, from the Banksian collection. Nut superior, small, clothed with the permanent silky-white corolla, ovate-acuminate, covered with a thin coriaceous rind: shell somewhat bony, brittle, brown, having a moderately elevated longitudinal streak on one side, in the other parts smooth, one-celled, valveless. Seed one, of the same size and form with the cavity of the shell, pale.

The corolla is one-petalled, ventricose, narrowed and funnel-form at the throat; the four segments ovate-oblong. Stamens in the throat of the corolla.

Found by Forster on the dry mountains of New Zealand.

These plants are united by the younger Linnæus with the genus *Passerina*, because he was not willing to break a natural genus, on account of a diversity in the number of stamens. He remarks that the flowers have the odour of Syringa, and that the plants are evergreen[d].

PIMENTA and PIMENTO. See *Myrtus*.

PIMPERNEL. See *Anagallis*.]

PIMPINELLA. (*For* Bipennula. *Linn. from its pinnate leaves.*)

Lin. gen. n. 366. *Reich. n.* 396. *Schreb. n.* 498. *Gærtn. t.* 32. *Juss.* 219. Tragoselinum. *Tourn. t.* 163.

Class. 5. 2. Pentandria Digynia.

Nat. order of *Umbelliferæ*.

GENERIC CHARACTER.

CAL. *Umbel universal* of many rays: *partial* of still more. *Involucre universal* none: *partial* none. *Perianth proper* scarcely observable.

COR. *universal* almost uniform. *Florets* all fertile. *Proper*, Petals five, inflex-cordate, almost equal.

STAM. *Filaments* five, simple, longer than the corollet. *Anthers* roundish.

PIST. *Germ* inferior. *Styles* two, very short. *Stigmas* subglobular.

PER. none. *Fruit* ovate-oblong, bipartile.

SEEDS two, oblong, narrower towards the top, on one side convex and striated, on the other flat.

OBS. *The fruit of* P. dichotoma *is subglobular. The petals of* P. dioica (*formerly Seseli pumilum*) *are not emarginate, and there are male and hermaphrodite flowers on distinct individuals.*

ESSENTIAL CHARACTER.

Petals bent in. *Stigm.* subglobular. *Fruit* ovate-oblong.

SPECIES.

1. Pimpinella saxifraga. *Common Burnet Saxifrage.*
   Lin. spec. 378. *Syst.* 291. *Reich. t.* 723. *Willd.* 1471. *prodr. n.* 347. *fl. suec. n.* 361. *mat. med.* 86. *hort. cliff.* 106. *Retz. obs.* 3. 29. *Hudf. angl.* 127. *Wither. arr. ed.* 3. 311. *Engl. bot.* 407. *Lightf. scot.* 169.[a] *Relh. cant. n.* 241. *Sibth. oxon. n.* 313. *Fl. ruff.* 127. *Woodv. med. bot.* 488. *t.* 179. *Pollich pal. n.* 305. *Jacqu. auftr.* 4. *t.* 395. *Fl. dan. t.* 669. *Gmel. fib. t.* 220. *Lewis herb. n.* 224. 225. *Krock. filef. n.* 467. *Villars dauph.* 2. 604. *Allion. pedem. n.* 1329. *Blackw. t.* 472. *Plenck, ic.* 221.
   α. P. saxifraga minor. *Boub. pin.* 160. *Raii syn.* 213. *n.* 3. & — folia Sanguisorbæ, *n.* 2.
   P. saxifr. & hircina. *Mill. dict. n.* 2, 3.
   β. Pimpinella nigra.
   Willd. prodr. n. 348. *spec. Linn.* 1471. *Mill. dict. n.* 4. *Retz. obs.* 3. 30. *t.* 1. *obs.* 2.
   P. saxifr. major altera. *Boub. pin.* 159.
   Saxifraga hircina minor foliis Sanguisorbæ. *Boub. hift.* 3. 111.
   γ. Pimpinella dissecta.
   Lin. spec. ed. Willd. 1472. *Retz. obs.* 3. 30. *t.* 2. *Sibth. oxon. n.* 314. *Wither. arr. ed.* 3. 312. *var.* 5. *Hall. helv. n.* 787. (Tragoselinum).
   P. saxifr. major degener. *Mor. umb. t.* 5. *hift.* 3. 284. *Raii syn.* 213.
   Leaves pinnate, root-leaflets roundish, uppermost linear.
2. Pimpinella magna. *Great Burnet-Saxifrage.*
   Lin. syst. 291. *Reich. t.* 727. *Willd.* 1471. *prodr. n.* 349. *mant.* 219. *Wither. arr. ed.* 3. 313. *Relh. cant. n.* 242. *Sibth. oxon. n.* 315. *Pollich pal. n.* 306. *Jacqu. auftr.* 4. *t.* 396. *Krock.*

[a] Engl. bot. [b] Smith's New Holland. [c] Linn. suppl. [d] Idem.

filef. n. 468. *Villars dauph.* 2. 603. *Allion. pedem. n.* 1330. *Hall. helv. n.* 785. (Tragoſelinum). *Plenck, ic.* 222.

P. major. *Mill. dict. n.* 1. *Hudſ. angl.* 127. *Gouan illuſtr.* 21. *Lob. obſ.* 413. 2. *ic.* 1. 720. 1. *Fuchſ.* 608.

P. ſaxifraga. *Raii ſyn.* 213. *Scop. carn. n.* 345. *Comer. epit.* 775. *Petiv. brit. t.* 26. *f.* 5. *Ger. emac.* 1044. 1.

Saxifraga magna. *Dod. pempt.* 315. 1.

P. ſaxifr. hircina major. *Park. theat.* 947. 1.

Saxifr. hircina major. *Bauh. hiſt.* 3. 2. 109.

S. Pimp. German. major. *Cluſ. hiſt.* 2. 197. 1.

P. ſaxifr. maj. umbella candida. *Bauh. pin.* 159. 1. *Mor. hiſt. ſ.* 9. *t.* 5. *f.* 1. *umb. t.* 5. *f.* 1.—item, umbella rubente. *Bauh. pin.* 159. *n.* 3.

β. Pimpinella orientalis.

Gouan illuſtr. 21. *t.* 15. *Jacqu. auſtr.* 4. *t.* 397. *Riv. pent.* 80. *Wither. arr. ed.* 3. 312. *var.* 6. *Plenck, ic.* 1. 224.

Leaves pinnate, leaflets ovate, the terminating one three-lobed.

[3. Pimpinella lutea. *Yellow Burnet-Saxifrage.*

Deſfont. atlant. 265. *t.* 76.

P. ſaxifraga maxima africana. *Magn. bot. app.*

Tragoſelinum africanum altiſſimum. *Tournef. inſt.* 309.

Leaves pinnate-pubeſcent: leaflets cordate toothed, gaſhed in front, peduncles filiform panicled.

4. Pimpinella glauca.

Lin. ſpec. 378. *Reich.* 1. 724. *Willd.* 1473. *Pollich pal. n.* 307.

Seſeli pumilum. *Gouan illuſtr.* 15.

Leaves ſuperdecompound, ſtem angular, very much branched.

5. Pimpinella capenſis. *Cape Burnet-Saxifrage.*

Lin. ſpec. ed. Willd. 1473. *Thunb. prodr.* 51.

Leaves ſuperdecompound, ſegments acute, ſtem ſtriated.]

6. Pimpinella peregrina. *Nodding Burnet-Saxifrage.*

Lin. ſpec. 378. *ſyſt.* 291. *Reich.* 1. 724. *Willd.* 1473. *mant.* 457. *Jacqu. hort.* 2. 61. *t.* 131. *Allion. pedem. n.* 1332. *Lin. hort. cliff.* 107. *upſ.* 67. (Aniſum).

Apium peregrinum foliis ſubrotundis. *Bauh. pin.* 153.

Daucus tertius Dioſcoridis. *Col. ecphr.* 1. 108. *t.* 109.

Root-leaves pinnate crenate, upper leaves wedge-form gaſhed, umbels before flowering drooping.

7. Pimpinella Aniſum. *Aniſe.*

Lin. ſpec. 379. *ſyſt.* 291. *Reich.* 3. 724. *mat. med.* 86. *Woodv. med. bot.* 490. *t.* 180. *Blackw. t.* 374. *Kniph. cent.* 2. *n.* 57. *Thunb. jap.* 130.

Aniſum foliis radicalibus ſimplicibus. *Lin. hort. cliff.* 107. *upſ.* 67.

A. herbarii. *Bauh. pin.* 159.

A. vulgare. *Cluſ. hiſt.* 2. 202.

Aniſum. *Ger.* 880. *emac.* 1035. 1. *Park. theat.* 911. *Raii hiſt.* 450.

Root-leaves trifid gaſhed.

[8. Pimpinella dichotoma.

Lin. ſyſt. 291. *Reich.* 1. 725. *Willd.* 1474. *mant.* 58.

Peduncles oppoſite to the leaves, floriferous leaves twice trifid, petioles membranaceous-winged.

9. Pimpinella dioica. *Leaſt Burnet Saxifrage.*

Lin. ſyſt. 291. *Reich.* 1. 725. *Willd.* 1474. *mant.* 357. *Hudſ. angl.* 128. *Wither. arr. ed.* 3. 313.

P. pumila. *Jacqu. vind.* 227. *auſtr.* 1. 19. *t.* 28.

Seſeli pumilum. *Lin. ſpec.* 373.]

Peucedanum minus. *Hudſ. angl. ed.* 1. 101. *Lin. mant.* 219. *ſyſt.* 280. *Bauh. pin.* 149. *Raii ſyn.* 217. *hiſt.* 460. *Park. theat.* 880. *n.* 3.—numilum. *Ger.* 867. *emac.* 1054. 3. & 1021. 3.

[Selinum montanum pumilum. *Cluſ. hiſt.* 2. 200. 1. *Bauh. hiſt.* 3. 2. 18. *f.* 1.

Peucedani facie puſilla planta. *Lob. adv.* 331. 2. *ic.* 1. 745. 2.

Dwarf, umbels very numerous compound and ſimple, flowers dioecous.

DESCRIPTIONS, &c.

1. Root perennial, ſtrong, woody, highly aromatic and pungent, to ſome perſons not unpleaſant, eſpecially when dry. Stems about a foot high, erect, ſlender, rigid, round, ſtriated and roughiſh, varying much in luxuriance, generally branched above. Leaves on long footſtalks, veiny, roughiſh, and rigid; the leaflets of the firſt root-leaves roundiſh or ovate, acutely ſerrate and generally deeply notched, eſpecially that at the end; the other leaves are compoſed of decurrent, linear, often falcated, ſometimes twice pinnatifid leaflets, thoſe which grow high on the ſtem being the narroweſt and moſt ſimple, and their common footſtalk more membranous and dilated than in the reſt. Umbels drooping when young. Flowers ſmall, white with long ſtamina: top of the germ very rumid and reddiſh. Styles ſhort. Seeds ſmall*.

There is a wonderful diverſity in the ſize and foliage of this ſpecies. It often happens that the root-leaves become like thoſe of the ſtem, and then it has been ſuppoſed to be a diſtinct ſpecies. I ſhall not attempt to follow this Proteus through all its changes: and have only given above our common ſort here deſcribed, the *nigra* and the *diſſecta*, which are ſet down by ſome for diſtinct ſpecies.]

β. Mr. Miller ſays, that the ſeeds of the *nigra*, or black-rooted German Burnet-Saxifrage, were ſent him from Paris by Bernard de Juſſieu; that the lower leaves are compoſed of ſix or ſeven pairs of leaflets terminated by an odd one; that they are heart-ſhaped, almoſt two inches long, and an inch and half broad near the baſe, hairy and of a pale green; that the ſtalk riſes near two feet high, dividing into ſeveral branches, which have one narrow five-pointed leaf at each joint, and are terminated by umbels of white flowers, like thoſe of P. magna, of which this may perhaps rather be a variety. [Willdenow diſtinguiſhes it by the pubeſcence of the ſtem and leaves; the root leaflets are ſubcordate, gaſhed, blunt and toothed, the ſtem-leaves bipinnate and linear; the root when cut or wounded pours out a blue milky liquor. It is a native of Germany in dry ſoils.

γ. Retzius, who has figured this ſays, that the root-leaves of the firſt year are entirely pinnate, and the pinnas roundiſh; but when theſe decay, the pinnas are all many-parted, and the ſegments ſubfalcated and acute. He remarks farther, that in a garden it grows taller, and the ſtem is ſtiffer, but in other reſpects it does not undergo any change. It is a native of Germany and Sweden.

We have it alſo in England. It is the fifth variety of Withering, who deſcribes the "root-leaves as "doubly-winged, the leafits wing-cleft, with entire "ſegments; ſtem-leaves doubly winged, with entire "leafits; floral leaves cloven at the end."

He diſtinguiſhes four other varieties:

1. With all the leafits egg-ſhaped, ſerrate. For this he refers to the following figures: *Tabern. ic.* 88; 255, 1 & 2. *Germ. edit. Ger.* 887. 1 & 2. *Bauh. hiſt.* 3. 2. 111. 1 & 2. *Mor. hiſt. ſ.* 9. *t.* 5. *f.* 6. *Trag.* 466. *Fuchſ.* 609. *Matth.* 1032.
2. Leafits on the root-leaves egg-ſhaped, ſerrate, thoſe on the ſtem-leaves ſtrap-ſhaped (linear) moſtly entire, floral-leaves ſtrap-ſhaped. This is figured by Jacquin, *auſtr.* 395. *Cluſ.* 2. 197. 2. *Dod.* 315. 2. *Lob. obſ.* 413. 1. & *ic.* 719. 2. *Ger. emac.* 1044. 2. *Park.* 947. 4. *Cam. epit.* 776.
3. Leafits on the root-leaves egg-ſhaped ſerrate, on the lower ſtem-leaves deeply wing cleft, floral leaves winged.—Figured in *Flor. dan.* 669. *Blackw.* 472. *Riv. pent.* 8. *P. minor.*
4. All the leaves doubly winged, leafits ſtrap-ſhaped moſtly entire, floral leaves winged. From Mr. Relhan. No figure.

The ſixth variety belongs rather to P. magna.

All the above varieties, he adds, are probably occaſioned by the different age of the plant, and the greater or leſs expanſion of its foliage, according to the ſoil in which it grows. It is probable that the firſt root-leaves are the ſame in all, that is ſimply winged, the leafits egg-ſhaped and ſerrate: when theſe diſappear, the lower leaves have wing-cleft or doubly winged leaves, and the upper leaves become alſo more compound than the reſt.

* Engl. bot.

Common Burnet Saxifrage is a native of moſt parts of Europe, in dry gravelly or calcareous paſtures; flowering from midſummer through the autumn.

Mr. Miller's P. hircina, is nothing more than P. ſaxifraga β. of Hudſon—hircina minor of Parkinſon. *Ray ſyn.* 213. 3.

2. Root perennial, woody, like that of *P. ſaxifraga* in flavour, but rather weaker. Stem two feet or more in height, round, ſtriated. Leaves on rather ſhorter footſtalks than in the preceding, pinnated, but of fewer leaflets (ſcarcely more than three pairs), and thoſe larger, ovate or ovate-lanceolate, the terminating one more or leſs deeply three-cleft, and all ſtrongly ſerrated. Sometimes, it is ſaid, the upper leaves are deeply pinnatifid, but that is not generally the caſe. Flowers commonly white, about the ſize of the laſt, and like them in ſtructure; but in alpine ſituations they often become roſe-coloured [a]. The ſtem-leaves are gradually narrower as they are higher up; at length linear and almoſt entire. The univerſal umbel has fourteen, the partial from ten to eighteen rays, in the preceding both have from eight to twenty rays [b].]

Mr. Miller remarks, that the lower leaflets, which are the largeſt, are near two inches long, an inch and half broad at their baſe, and of a dark green, and that white and red flowers riſe from the ſame ſeed.

Native of the South of Europe, Germany, Switzerland and England. With us it grows chiefly in woods and hedges in a calcareous ſoil, flowering in auguſt or even later. Ray marks it to grow in the woods of Cambridgeſhire, Bedfordſhire, Kent, &c., Mr. Woodward in Ripton-wood, Huntingdonſhire, Mr. Ballard in Worceſterſhire, Dr. Pulteney in Hollinghall-wood, Leiceſterſhire, Mr. Robſon about Thirſk and Burroughbridge in Yorkſhire, Dr. Smith under the walls of York, Dr. Milne near Clandon-place in Surry, in Petworth-park, near Lord Petre's at Brentwood, at Greenhithe, by the 31ſt mile-ſtone on the Canterbury road, on Hampſtead-heath, at Leads near Claremont in Surry, about Guildford and Godalmin, between Wimbledon and Merton, Dr. Sibthorp in Stow-wood and Noke woods, Oxfordſhire. In Wedneſbury-field, Staffordſhire, with a red flower. In hedges near Maidſtone, Kent, with all the leaves jagged.

This and the former ſpecies partake nearly of the ſame qualities. The root is very acrid, burning the mouth like Pepper. It affords a blue oil. Its acrimony has occaſioned it to be uſed to cure the tooth-ache, and to cleanſe the ſkin from freckles. It is chewed to promote the ſecretion of ſaliva, and is uſed in gargles for diſſolving viſcid mucus in the throat. In Germany it is preſcribed in the aſthma and dropſy [c].

β. Root biennial, branched. Stem grooved and angular, panicled with branches. Primary root-leaves having five petioled leaflets, the lower cordate crenate, the middle obliquely ovate, the end one ovate equal three-lobed crenate; the ſecond root-leaves quinate alſo, but the two lower leaflets three-parted-palmate multifid, the middle ones ſmaller and leſs jagged, having a ſeſſile oblong leaflet at the baſe longitudinally truncate upwards; the odd leaflet three-lobed. The ſecond year the root-leaves or lower ſtem-leaves have ſometimes ſeven leaflets, but moſt commonly five, the loweſt ternate, the reſt three-parted multifid, deeply pinnatifid, almoſt like *Aconitum Napellus*. The other ſtem-leaves and branch-leaves have much ſmaller leaflets; and the uppermoſt are very ſmall, trifid and ſcarcely jagged. The petioles of the root-leaves are three inches long, three-ſided and grooved above; the ſheaths ſtriated-nerved and wide, frequently purple. The umbels have from fourteen to ſixteen rays, about half an inch in length but ſomewhat unequal. The umbellets have about ſixteen very ſlender rays, two lines long. Flowers white. Seeds ſmooth [d].

Found by Tournefort in the Levant, and by Jacquin in Auſtria.

[a] Engl. bot. [b] Relhan. [c] Withering. [d] Gouan.

Mr. Miller's *P. auſtriaca* is probably a variety of the *magna*, but it does not correſpond with the *orientalis*: as far as we can judge by his deſcription.] The lower leaves have five pairs of leaflets, with an odd one; they are placed at a wider diſtance than the other ſorts; are near two inches long, and three quarters of an inch broad in the middle, drawing to a point at each end, and are deeply cut in regular jags oppoſite; they are of a lucid green and are placed on long foot-ſtalks. The ſtems are two feet high, divide at the top into two or three ſlender branches, and at each joint have one pinnatifid linear leaf. Mr. Miller gathered the ſeeds in Boerhaave's private garden near Leyden, under the name of *Tragoſelinum auſtriacum maximum, foliis profundiſſime inciſis*.

[3. Leaves nearly thoſe of *P. magna*. Root-leaves pubeſcent, petioled: leaflets unequally and bluntly toothed, often gaſhed in front: terminating leaflets commonly three-lobed. Stem ſmooth, even, leafy below, leafleſs above and branched: branches dichotomous; branchlets filiform, panicled. Sheaths channelled, entire, membranaceous, deciduous. Peduncles nodding. Umbels ſmall. Rays three to five, capillary. Petals yellow, very ſmall. Filaments of the ſame colour. Seeds quite ſmooth, ſmall, half ovate, ſcarcely ſtriated. Central florets abortive. It flowers in ſummer, and has an aromatic odour.—Native of mount Atlas [a].

4. Root fuſiform, fibrous, brown without, white within. Stem erect, ſeldom attaining a foot in height, four or five-cornered, very ſmooth, divided from the very baſe into ſmaller branches, and into very ſmall ones much diverging. Leaves alternate, the lower petioled, the upper oppoſite or in threes ſeſſile, near four inches long, two inches wide, the laſt pinnas ſhort, twice-trifid, linear, ſomewhat fleſhy, quite entire, all glaucous-green and ſmooth. Sheaths ſtriated, ſmooth, with a white membranaceous margin. Peduncles angular, ſmooth. The univerſal umbel has about ten rays, the partial ſeventeen or more. Flowers ſmall, white [b]. It is not a ſpecies of *Seſeli*, becauſe it has no partial involucre [c]. Gouan affirms, that it has involucels, which are ſometimes deciduous, ſometimes permanent, but that the latter are ſo ſmall as not to be ſeen without a magnifier, or when the fruit is ripe.—Native of Germany, France and Italy.

5. Found at the Cape of Good Hope by Thunberg [d].

6. Root long, white and fibrous; of a very ſharp taſte. Radical leaves (at leaſt when raiſed in a garden) proſtrate, and numerous; thoſe which appear firſt are ſimple, the next ternate, and the ſucceeding ones pinnate: leaflets roundiſh and crenated. Stem ſolitary, two feet high, ſtriated, and branched above; it has but few leaves, the lower ones of which reſemble more or leſs the radical ones; but the upper ones are variouſly divided into lanceolate ſegments. The umbels nod extremely before flowering, and afterwards are upright. The flowers are white, and the petals hairy on the back. The fruit is very ſmall, and ovate-roundiſh, crowned with the two ſpreading ſtyles, and ſeparable into two brown ſeeds, flat on one ſide, and gibbous and ſtriated on the other, and beſet with numerous pale briſtles: they have no ſmell, and when firſt chewed, ſcarce any taſte, but in a ſhort time are very acrimonious, and excite a great heat in the fauces [e].

Native of Italy and Spain. Cultivated in 1739, by Mr. Miller [f].]

7. Root annual. Lower leaves divided into three lobes, which are deeply cut on their edges. Stem a foot and half high, dividing into ſeveral ſlender branches, which have narrow leaves on them, cut into three or four narrow ſegments. Umbels pretty large and looſe, on long peduncles. Flowers ſmall, yelloviſh white. Seeds oblong, ſwelling. It flowers in july, and if the ſeaſon prove warm, the ſeeds will ripen in autumn. It is a native of Egypt, but is cultivated in Malta and Spain, whence the ſeeds are annually

[a] Deſfontaines. [b] Pollich. [c] Linn. [d] Thunb. prodr. [e] Jacquin. [f] Hort. kew.

imported

imported into England. [It was in our gardens in 1551, as appears from Turner[1].

The ſeeds have an aromatic ſmell, and a pleaſant warm taſte, accompanied with a conſiderable degree of ſweetneſs. In diſtillation with water, three pounds of them yield an ounce or more of eſſential oil which, even when the air is not ſenſibly cold, congeals into a butyraceous white concrete. Its ſmell is very durable and diffuſive, and its taſte milder and leſs pungent than almoſt any other diſtilled vegetable oils.

Theſe ſeeds yield an oil likewiſe by expreſſion, of a greeniſh colour, and grateful taſte, ſtrongly impregnated with the flavour of the ſeeds: ſixteen ounces lightly moiſtened by expoſure to the ſteam of boiling water, are ſaid to afford one ounce, compoſed of a groſs inſipid inodorous oil, of the ſame nature with common expreſſed oils, and a part of the eſſential oil of the ſeed, on which the flavour depends.

The ſeeds of Aniſe have been long uſed by phyſicians as an aromatic and carminative, in preference to thoſe of moſt other umbellate plants; they have alſo been eſteemed good in pulmonary complaints, and like thoſe of Fennel, to promote the ſecretion of milk. Their chief uſe however is in flatulencies, and in the gripes to which children are more eſpecially liable; and they are combined with ſuch purgatives as are apt to produce theſe effects. Weakneſs of the ſtomach, diarrhœas, and loſs of tone in the primæ viæ are likewiſe complaints in which Aniſe-ſeeds are ſuppoſed to be peculiarly uſeful.

The eſſential oil, which is the only officinal preparation now directed by the Pharmacopœias, is uſually grateful to the ſtomach, and may be taken in the doſe of twenty drops. In diſeaſes of the breaſt the oil is preferred, but in flatulencies and colics the ſeeds in ſubſtance are ſaid to be more effectual.

It is aſſerted that the oil is a poiſon to pigeons[2].

8. This plant is half a foot high, very much branched, dichotomous. Lower leaves triternate, upper biternate, almoſt linear, ſhorter, acute; on petioles augmented on both ſides by a membrane wider than the others, quite membranaceous, white. Peduncles oppoſite to the leaf, and much longer than it, one from each axil, whence they are abundant. The univerſal umbels have five or ſix rays. Petals white, curved in and emarginate. Fruit ſubglobular, ſtriated. Native of Spain[3].

9. Root perennial, fuſiform, running ſtraight down, ſomewhat branched at the baſe, with a villoſe head. Stem from half a cubit to a cubit in height, upright, angular, ſtriated, leafy, ſmooth, very much branched; branches patulous. Lower leaves oppoſite, petioled, pinnate and bipinnate: leaflets ſimple and ternate, linear, channelled, naked, glaucous. Petiole membranaceous, ſheathing, oblong, ſtriated, entire. Umbels peduncled, axillary and terminating: univerſal of about ſix long rays; partial cluſtered, with about five ſhort rays. Flowers yelloviſh or whitiſh dioecous. Petals equal. The male flowers have no piſtil. The female flowers have anthers, but they are barren[4]. Mr. Swayne remarks, that the male plant has a yellow ſickly appearance[5].

According to Linneus, the ſtem is divaricating, even, ſtriated, with but few leaves. Leaves ternate or biternate, linear. Umbels one terminating and two lateral, oppoſite, generally compound, ſome few ſimple. Petals long-lanceolate, curved in but not emarginate. Filaments white, long. There is a male and an hermaphrodite plant. It is nearly allied to *P. glauca*, or of a diſtinct genus.]

Mr. Miller ſays it is a biennial plant, periſhing ſoon after it has perfected its ſeeds: leaves ſhort and very narrow, ſpreading near the ground; ſtems near a foot high, branched almoſt from the bottom; the branches are almoſt horizontal, and have a few narrow ſhort leaves of a lucid green: each ſtalk is terminated by a ſmall umbel of flowers of an herbaceous yellow colour and ſmall: they are ſucceeded by ſmall channelled ſeeds.

[1] Hort. kew. [2] Woodville. [3] Linn. mant. [4] Hudſon. [5] Withering.

[Native of Auſtria, Provence, Switzerland and England; on St. Vincent's rocks, near Briſtol, and above Uphill in Somerſetſhire. It flowers in May and june.]

PROPAGATION AND CULTURE.

Theſe are hardy perennials, except the fifth, which is a native of the Cape, and the ſeventh, which is an annual plant. They are propagated by ſeeds ſown in the autumn rather than ſpring. When the plants come up, thin them where they are too cloſe, and keep them clean from weeds: the ſecond year they will flower and produce ripe ſeeds. The roots will abide ſome years in poor land. The laſt ſort is biennial, (obſerves make it perennial) and rarely ripens ſeeds in a garden.

7. The ſeeds of Aniſe ſhould be ſown the beginning of april upon a warm border, where the plants are to remain; when they come up thin them and keep them clean from weeds. It is too tender to be cultivated in England for profit.

[PIMPINELLA. See *Peterium*, *Sanguiſorba*, *Seſeli*, *Sium*.— Gærtner has united the two firſt of theſe under the name of *Pimpinella*.

PINANGA. See *Areca*.

PINASTELLA. See *Hippuris*.]

PINASTER. See *Pinus*.

[PINEA. See *Pinus*.

PINE-APPLE. See *Bromelia*.

PINE, *Screw*. See *Pandanus*.

PINE-TREE. See *Pinus*.]

PINGUICOLA. [*Dimin. from* Pinguis, *fat: on account of the greaſineſs of the leaves.*)

Lin. gen. n. 30. *Reich. n.* 33. *Schreb. n.* 40. *Tournef. t.* 74. *Juſſ.* 98.

Claſſ. 2. 1. Diandria Monogynia.

Nat. order of *Corydales*. *Lyſimachiæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* ringent, ſmall, acute, permanent. *Upper lip* erect, trifid; *lower* reflex, biſid.

COR. one-petalled, ringent: *longer lip* ſtraight, blunt, trifid, ſupine: *ſhorter lip* biſid, blunter, more ſpreading.

Nectary horned, produced backwards from the baſe of the petal.

STAM. *Filaments* two, cylindrical, curved, aſcending, ſhorter than the calyx. *Authers* roundiſh.

PIST. *Germ* globular. *Style* very ſhort. *Stigma* two-lipped: *upper lip* larger, flat, reflex, covering the anthers: *lower lip* very narrow, erect, biſid, ſhorter.

PER. *Capſule* ovate, compreſſed at the tip, opening at the top, one-celled.

SEEDS very many, cylindrical. *Receptacle* free or detached.

ESSENTIAL CHARACTER.

Cor. ringent, with a ſpur. *Cal.* two-lipped, five-cleft. *Capſ.* one-celled.

SPECIES.

1. Pinguicula luſitanica. *Pale Butterwort.*
Lin. ſpec. 25. *ſyſt.* 65. *Reich.* 1. 49. *Willd.* 109. *Wither. arr. ed.* 3. 18. *Smith, angl.* 26. *Hudſ. angl. ed.* 1. 7. *Engl. bot. t.* 145. *Cullum, fragm.* 6. *Alion. pedem. n.* 198.
P. villoſa. *Hudſ. angl. ed.* 2. 8. *Ligtf. ſcot.* 77. *t.* 6.
P. minima flore albo. *Morr. pin.*
P. corniculata flore minore carneo. *Raii hiſt.* 752.
P. flore min. carneo. *Raii ſyn.* 2. 160. 3. *281.
Viola paluſtris, Pinguicula dicta, luſitanica, *Griſl. virid.* 84.
Nectary blunt ſhorter than the petal, ſcape villoſe, capſule globular.

2. Pinguicula vulgaris. *Common Butterwort.*
Lin. ſpec. 25. *ſyſt.* 65. *Reich.* 1. 50. *Willd.* 110. *fl. lapp. n.* 11. *ſuec. n.* 25. *Hudſ. angl.* 8. *Wither. arr. ed.* 3. 18. *Smith, angl.* 27. *Engl. bot. t.* 70. *Relh. cant. n.* 16. *Sibth. oxon. n.* 17. *Abbot, beſf. n.* 15. *Hall. helv. n.* 292. *Fl. dan. t.* 93. *Gmel. ſib.* 3. 225. *Roth. germ.* 1. 10. 2. 26. *Heſſm. germ.* 8. *Villars dauph.* 2. 445. *Allion. pedem. n.* 199.
P. Geſneri. *Bauh. hiſt.* 3. 546. 1. *Raii hiſt.* 751. *ſyn.* *281. *Petiv. brit. t.* 35. *f.* 7.

Pinguicula

Pinguicula. *Cluſ. hiſt.* 1. 310. 2.
P. 1. Sanicula choracenſis. *Ger.* 644. *emac.* 788. *Park. theat.* 532. 2. *Mor. hiſt. ſ.* 5. *t.* 7. *f.* 13.
Sanicula montana, flore calcari donato. *Baub. pin.* 243.
Nectary cylindrical acute the length of the petal, capſule ovate.
3. Pinguicula grandiflora. *Great-flowered Butterwort.*
Lin. ſpec. ed. Willd. 110. *Lamarck, encycl.* 3. 21. *t.* 14. *f.* 2.
P. flore amplo purpureo, cum calcare longiſſimo. *Raii hiſt.* 752. *Tournef. inſt.* 167.
Nectary awl-ſhaped ſtraight the length of the flower, upper lip ſpreading emarginate.
4. Pinguicula alpina. *Alpine Butterwort.*
Lin. ſpec. 25. *Jacq. hiſt.* 65. *Reich.* 1. 50. *Willd.* 111. *fl. lapp. n.* 12. *t.* 12. *f.* 3. *ſuec. n.* 26. *Fl. dan. t.* 453. *Hall. helv. n.* 293. *Scop. carn. n.* 28. *Gunn. norv. n.* 640. *t.* 4. *f.* 4. *Pallas, it.* 3. 33. *Roth. germ.* 1. 10. 2. 27. *Hoffm. germ.* 8. *Villars dauph.* 2. 445. *Allion. pedem. n.* 200.
P. flore albo minore, calcare breviſſimo. *Raii hiſt.* 752. *Tournef. inſt.* 167.
Nectary awl-ſhaped reflex ſhorter than the petals.
5. Pinguicula villoſa. *Villoſe Butterwort.*
Lin. ſpec. 25. *Jacq. hiſt.* 65. *Reich.* 1. 50. *Willd.* 111. *fl. lapp. n.* 13. *t.* 12. *f.* 2. *ſuec. n.* 27. *Gunn. norv. n.* 641. *Georgi. it.* 1. 195. *Villars dauph.* 2. 445. *Allion. pedem. n.* 201.
Scape ſtrict pubeſcent, nectary awl-ſhaped ſtraight very ſhort, leaves nerved.

DESCRIPTIONS, &c.

1. Root perennial. Leaves like thoſe of the other ſpecies, but rather more delicate and pellucid, reticulated with red veins, and much involute in the margin. Stalks hairy, eſpecially in their lower part, with ſhort ſpreading glandular hairs tipped with a viſcid fluid. Flowers a little nodding. Calyx ſcarcely two-lipped, but almoſt equally five-cleft. Tube of the corolla nearly cylindrical, yellow ſtreaked with red; limb in five equal obcordate ſpreading ſegments, of a pale lilac; orifice hairy; ſpur inflated at the baſe, then contracted, terminating in a very blunt conical figure, and when dried much thicker at the end than at the middle, ſtreaked with red. Stamens flattiſh. Germ hairy. Stigma blunt, excavated on the upper ſide. Capſule perfectly globular, crowned with the withered ſtigma.

To diſtinguiſh this ſpecies from others it may be remarked, that *P. vulgaris* has an unequal limb, ſharp ſlender ſpur, and oval capſule: *P. alpina* has a very ſhort conical ſpur, and a long roſtrated capſule: *P. villoſa* a ſlender ſharp ſpur, and obcordate compreſſed capſule, with ſhort round leaves. Its hairy ſtalk and regular limb agree nearly with *P. luſitanica*, but the *villoſa* is ſmaller in all its parts [a].

Ray had remarked that the leaves are almoſt pellucid, marked with purpliſh veins, and the edges rolled in; that the flowers are ſmaller with more of a reddiſh caſt than in *P. vulgaris*.

Found about Kilkhampton by Ray, and midway from Oakhampton to Launceſton by Merret; ſaid to be frequent in the weſtern counties by Hudſon; found in Stoneham-park, Hampſhire by Sir Joſeph Banks; Dr. Pulteney ſays it is abundantly more frequent in Dorſetſhire, on the borders of bogs, than *P. vulgaris*. Dr. Hope found it near Air in Scotland, and in the iſland of Lamlaſh; Mr. Stuart and Mr. Lightfoot in the Iſle of Skye: and Mr. Lambert on Croagh Patrick, in the county of Mayo, Ireland. It flowers in june and july.

2. This is a ſmooth plant. The leaves are leſs involuted. Scapes ſmooth, only a little pubeſcent at the top. Corolla violet-coloured, with an unequal limb: ſpur awl-ſhaped, acute. Capſule ovate [b]. The leaves are remarkably glutinous on their upper ſide, and afford a good example of an involuted margin. The ſtructure of the ſtigma, and its cloſe application to the ſtamens, are very remarkable [c].

Linnæus remarks that the ſoft upright prickles which cover the leaf, ſecrete the glutinous liquor; and that the corolla is violet, purple and reddiſh, with white lips, and an aſh-coloured woolly ſpot on the palate.

Native of many parts of Europe, on bogs. It is abundant in our northern counties, and Scotland; alſo in Norfolk; Cambridgeſhire at Hinton and Teverſham moors, and in the fens near Ely; in Bedfordſhire on Ampthill bogs, Mr. Abbot; on Bullington-green, and under Headington-Wick copſe in Oxfordſhire, Dr. Sibthorp; on the little bog by Charlton wood, near Shooter's-hill, on Pets-bog near Chiſelhurſt, and on the Mere near Feverſham, in Kent; at Harringay and Wellingborough in Northamptonſhire; at Baſford Scottum in Nottinghamſhire.

Gerarde ſets it down as growing in Crag-cloſe and at Croſby Ravenſwaith in Weſtmoreland, upon Ingleborough fells twelve miles from Lancaſter, and in Harwood in the ſame county near to Blackburne, ten miles from Preſton in Aunderneſſe; in the boggy meadows about Biſhop's Hatfield, and alſo in the fens in the way to Wittles meare from London in Huntingdonſhire. Johnſon adds, that it grows alſo in Hampſhire, and abundantly in many places of Wales.

It flowers in may and june.

In Yorkſhire, ſays Gerarde, where it doth eſpecially grow, and in greateſt abundance, it is called Butterworts, Butter-root, and White-root; but the laſt name belongeth more properly to Solomon's Seal. It is alſo named Yorkſhire Sanicle.

If the freſh-gathered leaves of Butterwort are put into the filtre or ſtrainer, through which warm milk from the Rein-deer is poured, and the milk is ſet by for a day or two to become acefcent, it acquires conſiſtence and tenacity, neither the whey nor the cream ſeparate: in this ſtate it is an extremely grateful food, and as ſuch is uſed in the north of Sweden. There is no farther occaſion to have recourſe to theſe leaves, for half a ſpoonful of the prepared milk, mixed with freſh warm milk, will convert it to its own nature, and ſo on. This has not ſucceeded when tried with Cow's milk. The juice of the leaves kills lice. The common people uſe it to cure cracks in Cow's udders [d]. This plant is generally ſuppoſed injurious to ſheep, and is called *White-rot*, from its occaſioning a diſeaſe which farmers call the rot. But it may be queſtioned whether the rot in ſheep be ſo much owing to the vegetables in marſhy grounds, as to the *Faſciola hepatica*, a flat inſect called a *Fluke*, from its ſimilitude to a Flounder or Fluke; and which is found in ſuch ſituations, adhering to ſtones and plants, as well as in the livers and biliary ducts of ſheep affected with the rot. From experiments made on purpoſe, and conducted with accuracy, it appears that ſheep, cows, horſes, goats and ſwine will not feed upon this plant [e].

3. The flowers are three times the ſize of thoſe of the preceding, of a violet purple colour: ſpur awl-ſhaped the length of the flower: upper lip dilated emarginate; lower wide, bluntly three-lobed, and not deeply three-parted, as in *P. vulgaris*.—Native of mountains in the South of France.

4. Corolla white with a reflex ſpur. Capſule beaked [f].—Native of the alps of Lapland, Norway, Switzerland, Auſtria, Germany, Dauphiné and Piedmont. It flowers earlier than the common ſort.

Villars remarks, that the flower is more open, the nectary ſhorter, and the leaves wider, leſs elongated and more yellow than the common ſort.

5. Scape ſetaceous, ſcarce apparently pubeſcent. Corolla violet-coloured, with the ſpur ſtanding out. It is ſix times leſs in all its parts than *P. vulgaris* [g]. It differs from *P. luſitanica* in having the ſcape ſtrict, the leaves three-nerved, and the flowers ſmaller [h].

Native of Lapland, Norway and Siberia.

PINGUIN. See *Bromelia*.

Pini foliis planta. See *Protea*.]

PINUS.

Lin. gen. n. 1077. *Reich. n.* 1175. *Schreb. n.* 1456. *Tournef. t.* 355. *Juſſ.* 414. Abies. *Tournef. t.* 353. *Juſſ.* 414. Larix. *Tournef. t.* 353.

[a] Engl. bot. [b] Smith, angl. [c] Engl. bot.
[d] Linn. lapp. and Withering. [e] Withering.
[f] Willdenow. [g] Linn. [h] Willdenow.

Claſſ. 21. 8. Monoecia Monadelphia.
Nat. order of *Coniferæ*.

GENERIC CHARACTER.

* *Male flowers diſpoſed in racemes.*

CAL. *Scales* of the bud opening, and no other.
COR. none.
STAM. *Filaments* very many, connected at bottom into an upright column, divided at top. *Anthers* erect, naked.

* *Female flowers on the ſame plant.*

CAL. *Strobile* ſubovate, conſiſting of *Scales* which are two-flowered, oblong, imbricate, permanent, rigid.
COR. none.
PIST. *Germ* very ſmall. *Style* awl-ſhaped. *Stigma* ſimple.
PER. none. *Strobile* ſerves for a calyx, having before been cloſed, but now only converging.
SEED. *Nut* augmented by a membranaceous wing which is larger than the ſeed, but leſs than the ſcale of the ſtrobile, oblong, ſtraight on one ſide, gibbous on the the other.

ESSENTIAL CHARACTER.

MALE. *Cal.* four-leaved. *Cor.* none. *Stam.* very many, with naked anthers.
FEM. *Cal.* Strobiles with a two-flowered ſcale. *Cor.* none. *Piſt.* one. *Nut* with a membranaceous wing.

SPECIES.

* *With two or more leaves from the ſame ſheathing baſe.* Pine.

1. Pinus ſylveſtris. *Wild Pine-tree.*
Lin. ſpec. 1418. *ſyſt.* 860. *Reich.* 4. 172. *hort. cliff.* 450. *fl. ſuec. n.* 874. *lapp. n.* 346. *mat. med.* 204. *Woodv. med. bot.* 570. *t.* 209. *Hudſ. angl.* 423. *Wither. arr. ed.* 3. 615. *Lightf. ſcot.* 587. *Hall. helv. n.* 1660. *Gmel. ſib.* 1. 178. *Pallas reiſ.* 1. 5. *t.* 2. *f.* Ii. *Scop. carn. n.* 1196. *Pollich pal. n.* 913. *Gunn. norv. n.* 337. *Villars dauph.* 3. 804. *Trew in nov. act. nat. cur.* 3. *app.* 452. *t.* 15. *f.* 1. 3. *t.* 16. *f.* 11—25. *Mill. illuſtr. Du Roi harbk.* 2. 13. *Evel. ſilv. ed. Hunt.* 274. *Blackw. t.* 190.
α. P. ſylveſtris. *Baub. pin.* 491. *Dalech. hiſt.* 45. *Matth.* 98. *Baub. hiſt.* 1. 253. *Ded. pempt.* 860. 1. *Lob. obſ.* 631. 2. *ic.* 2. 226. 2. *Ger.* 1175. 1. *emac.* 1356. 1. *Raii hiſt.* 1399. *Park. theat.* 1534. 2.
P. ſylv. fol. brevibus glaucis, conis parvis albicantibus. *Duham. arb.* 2. 125. *t.* 30. *Raii ſyn.* 442. *hiſt.* 1401.
P. rubra. *Mill. dict. n.* 3. *Scotch Fir* or *Pine Tree.*
P. communis. *Ait. kew.* 3. 366.
Leaves in twos ſhorter glaucous, cones ſmall.
β. P. tatarica. *Tartarian Pine Tree.*
Mill. dict. n. 4. *Ait. kew.* 3. 366.
Leaves in twos ſhorter broader glaucous, cones very ſmall.
γ. P. montana. *Mountain* or *Mugho Pine Tree.*
Mill. dict. n. 5. *Ait. kew.* 3. 366.
P. ſylv. mont. *Duham. arb.* 2. 125. *t.* 31.
P. ſylv. mugo. *Ger.* 1175. 2. *emac.* 1356. 2. *Scop. ann.* 2. 65.
Leaves often in threes narrower green, cones pyramidal with blunt ſcales.
δ. P. divaricata. *Hudſon's Bay Pine Tree.*
Ait. kew. 3. 366.
Leaves divaricate oblique.
ε. P. maritima. *Sea Pine Tree.*
Ait. kew. 3. 366.
P. marit. major. *Duham. arb.* 2. 125. *t.* 28.
Leaves two in a ſheath rigid, cones ovate-conical the length of the leaves ſingle or two together rounded at the baſe.
2. Pinus Pinaſter. *Pinaſter* or *Cluſter Pine Tree.*
Ait. kew. 3. 367.
P. ſylveſtris. *Mill. dict. n.* 1.
P. ſylv. γ. *Lin. ſpec.* 1418.
P. maritima altera. *Duham. arb.* 2. 125. *t.* 29.
Leaves two in a ſheath ſomewhat rough at the edge, cones oblong-conical ſhorter than the leaf attenuated at the baſe, ſcales echinated.
3. Pinus inops. *Jerſey Pine Tree.*
Ait. kew. 3. 367.
P. virginiana. *Mill. dict. n.* 6.
Leaves two in a ſheath, cones oblong-conical the length of the leaves ſolitary rounded at the baſe, ſcales echinated.
4. Pinus reſinoſa. *American Pitch Pine Tree.*
Ait. kew. 3. 367.
Leaves two in a ſheath, cones ovate-conical rounded at the baſe ſolitary ſhorter by half than the leaf, ſcales unarmed.
5. Pinus halepenſis. *Aleppo Pine Tree.*
Mill. dict. n. 8. *fig.* 139. *t.* 208. *Ait. kew.* 3. 367.
Leaves two in a ſheath, cones ovate conical rounded at the baſe rather ſhorter than the leaf, ſcales obtuſe.
6. Pinus Pinea. *Stone Pine Tree.*
Lin. ſpec. 1419. *Reich.* 4. 173. *hort. cliff.* 450. *upſ.* 288. *mat. med.* 205. *Scop. carn. n.* 1197. *Du Roi harbk.* 2. 39. *Regn. bot. Villars dauph.* 3. 806.
P. ſativa. *Baub. pin.* 491. *Raii hiſt.* 1398.—ſ. domeſtica. *Ger.* 1173. *emac.* 1355.—urbana ſ. domeſt. *Park. theat.* 1534. 1.
P. officulis duris, foliis longis. *Baub. hiſt.* 1. 248.
Pinus. *Camer. epit.* 93. *Lob. adv.* 449.
Leaves two in a ſheath, primordial ones ciliate, cones ovate blunt almoſt unarmed longer than the leaf, nuts hard.
7. Pinus Tæda.
Lin. ſpec. 1419. *ſyſt.* 860. *Reich.* 4. 173. *Gron. virg.* 152. *Du Roi harbk.* 2. 48. *Cold. norveb.* 230. *Raii dendr.* 8.
α. P. tenuifolia. *Ait. kew.* 3. 368.
P. Tæda. *Mill. dict. n.* 11. *Frankincenſe Pine Tree, Leaves longer and more ſlender, cones very large looſe.*
β. P. rigida. *Three-leaved Virginian Pine Tree.*
Mill. dict. n. 10. *Ait. kew.* 3. 368.
Cones longer with more rigid ſcales.
γ. P. variabilis. *Two and three-leaved Pine Tree.*
Ait. kew. 3. 368.
Leaves by twos or threes in a ſheath.
δ. P. alopecuroidea. *Fox-tail Pine Tree.*
Ait. kew. 3. 368.
Leaves ſpreading and ſquarroſe.
Leaves moſtly three in a ſheath, cones oblong-conical ſhorter than the leaf aggregate, ſcales echinated.
8. Pinus paluſtris. *Swamp Pine Tree.*
Mill. dict. n. 14. *Ait. kew.* 3. 368. *Duham. arb.* 2. 126. *Abbot, Georgia, t.* 42.
Leaves three in a ſheath very long, cones ſubcylindrical echinated, branches roughened with rementaceous ſtipules.
9. Pinus Cembra. *Siberian Stone Pine Tree.*
Lin. ſpec. 1419. *ſyſt.* 860. *Reich.* 4. 173. *Scop. ann.* 2. 65. *Gmel. ſib.* 1. 179. *t.* 39. *Duham. arb.* 2. 132. *Hall. helv. n.* 1659. *Pallas reiſ.* 1. *t.* 2. *Villars dauph.* 3. 806. *Du Roi harbk.* 2. 51. *Amm. ruth.* 178. *Raii hiſt.* 1398. 2.
P. ſylveſtris Cembra. *Camer. epit.* 42.
P. Cembro. *Lob. adv.* 449. *Matth.* 103.
P. ſylv. montana tertia. *Baub. pin.* 491. *Scheuch. it.* 6. 460.
Pinaſter. *Bell. conif.* 19. *Mich. gen.* 223.
Larix ſempervirens, foliis quinis, nucleis edulibus. *Breyn. eph. nat. cur. cent.* 7. *obſ.* 2.
Leaves five in a ſheath, cones ovate blunt, ſcales preſſed cloſe, nuts hard.
[10. Pinus occidentalis. *Weſt Indian Pine Tree.*
Swartz prodr. 103. *Plum. ſpec.* 17. *it.* 161.
Leaves five in a ſheath rugged along the edge very long, cones oblong, ſcales truncated at top.]
11. Pinus Strobus. *Weymouth Pine Tree.*
Lin. ſpec. 1419. *Reich.* 4. 174. *Gron. virg.* 152. *Du Roi harbk.* 2. 57. *Cold. norveb.* 229. *Duham. arb.* 2. 127.
Larix canadenſis longiſſimo folio. *Tournef. inſt.* 606.
Leaves five in a ſheath, cones cylindrical longer than the leaf looſe.
12. Pinus Cedrus. *Cedar of Lebanon.*
Lin. ſpec. 1420. *Reich.* 4. 174. *Du Roi harbk.* 2. 84. *Evel. ſylva ed. Hunt.* 2. *p.* 1.
Larix Cedrus. *Mill. dict. n.* 3.

Cedrus

Cedrus conifera foliis laricis. *Bauh. pin.* 490. *Raii hiſt.* 1404. *Trew Ehret, t.* 1—4. *nov. act. nat. cur.* 3. *app.* 445. *t.* 13. *f.* 1—7.
C. libani. *Ger.* 1171. *emac.* 1352. *Barr. ic.* 499. *Edw. ornith. t.* 188.
C. phoenicea. *Reneaulm. ſpec.* 27.
Cedrus. *Bellon. itin.* 162. *Camer. epit.* 57.
C. magna conifera Libani. *Park. theat.* 1532.
Leaves faſcicled acute.
[13. Pinus pendula. *Black Larch Tree.*
Ait. kew. 3. 369.
Leaves faſcicled ſoft blunt iſh, ſcales of the ſtrobiles covering the bractes.
14. Pinus Larix. *Common White Larch Tree.*
Lin. ſpec. 1420. *Reich.* 4. 175. *mat. med.* 205. *Woodv. med. bot.* 576. *t.* 210. *Scop. carn. n.* 1198. *Hall. helv. n.* 1658. *Villars dauph.* 3. 807. *Pallas it.* 1. 451. & 2. 127. *reiſ.* 1. *t.* 1. *Trew in nov. act. nat. cur.* 3. *app. t.* 13. *f.* 8—28. *Ludw. elt. t.* 86. *Blackw. t.* 477. *Kniph. cent.* 9. *n.* 77. *Du Roi harbk.* 2. 61. *Hunt. Evel.* 179.
Larix. *Bauh. pin.* 493. *Dod. pempt.* 668. *Camer. epit.* 45. 46. *Ger.* 1183. *emac.* 1365. *Raii hiſt.* 1405. *Park. parad.* 608. *theat.* 1533. *Matth.* 105.
L. folio deciduo conifera. *Bauh. hiſt.* 1. 265. *hort. angl.* 43. *f.* 11. *Duham. arb.* 1. 332. *t.* 131.
L. decidua. *Mill. dict. n.* 1.
Abies foliis faſciculatis obtuſis. *Lin. hort. cliff.* 450. *Gmel. ſib.* 1. 176.
Leaves faſcicled ſoft blunt iſh, bractes ſtanding out beyond the ſcales of the ſtrobiles.

* *Leaves ſolitary and diſtinct at the baſe.* Fir.

15. Pinus Picea. *Silver Fir Tree.*
Lin. ſpec. 1420. *Reich.* 4. 175. *Wood. med. bot.* 575. *t.* 209. *Hall. helv. n.* 1647. *Scop. carn. n.* 1193. *Pollich pal. n.* 914. *Pallas reiſ.* 1. 7. *t.* 1. *f.* F. *Trew in nov. act. nat. cur.* 3. *app. t.* 13. *f.* 29—44. *Villars dauph.* 3. 809. *Gærtn. fruct.* 2. 60. *Evel. ſilva ed. Hunter,* 278.
P. Abies. *Du Roi harbk.* 2. 95.
P. candida. *Trag.* 1117.
Abies alba. *Mill. dict. n.* 1.
Abies fol. ſolitariis apice emarginatis. *Lin. hort. cliff.* 449. *Gmel. ſib.* 176.
A. taxi folio, fructu ſurſum ſpectante. *Tournef. inſt.* 585.
A. conis ſurſum ſpectantibus f. mas. *Bauh. pin.* 505.
A. femina. *Bauh. hiſt.* 1. 231. *Camer. epit.* 48. 49.
Abies. *Park. theat.* 1540. *Raii hiſt.* 1394. *Oelhaf. arb.* 25. *t.* 5—8. *mas. Blackw. t.* 203.
Leaves ſolitary flat emarginate pectinate, ſcales of the cone very blunt preſſed cloſe.
16. Pinus Balſamea. *Balm of Gilead Fir Tree.*
Lin. ſpec. 1421. *Reich.* 4. 176. *Gron. virg.* 152. *Du Roi harbk.* 2. 193.
Abies Balſamea. *Mill. dict. n.* 3. *Hort. angl.* 2. *n.* 6. *Duham. arb.* 3. *Pluk. phyt. t.* 121. *f.* 1. *Roii dendr.* 8.
Leaves ſolitary flat emarginate ſubpectinate almoſt upright above, ſcales of the cone when in flower acuminate reflex.
17. Pinus canadenſis. *Hemlock Spruce Fir Tree.*
Lin. ſpec. 1421. *Reich.* 4. 177. *Du Roi harbk.* 2. 124.
Abies foliis ſolitariis conſertis obtuſis membranaceis. *Gron. virg.* 191.
A. americana. *Mill. dict. n.* 6. *Gærtn. fruct.* 2. 60.
Leaves ſolitary flat ſubmembranaceous ſharpiſh pectinate, cones ovate ſcarcely ſhorter than the leaf.
18. Pinus nigra. *Black Spruce Fir Tree.*
Ait. kew. 3. 370.
P. mariana. *Gærtn. fruct.* 2. 59.
Abies mariana. *Mill. dict. n.* 5.
A. Picea foliis brevioribus, conis biuncialibus laxis. *Mill. fig.* 1. *t.* 1. *Seligm. arc.* 5. *t.* 11.
Leaves ſolitary four-cornered ſcattered all round ſtraight ſtrict, cones oblong.
19. Pinus Abies. *Norway Spruce Fir Tree.*
Lin. ſpec. 1421. *Reich.* 4. 177. *mat. med.* 205. *Woodv. med. bot.* 573. *t.* 208. *Gærtn. fruct.* 2. 60. *Hall. helv. n.* 1656. *Scop. carn. n.* 1194. *Gunnerv. n.* 39. *Pallas reiſ.* 1. 6. *t.* 1. *f.* G. *Fl. dan. t.* 193. *Villars dauph.* 3. 810. *Trew, nov. act. nat. cur.* 3. *app.* 451. *t.* 14. *f.* 5—10. & *t.* 16. *f.* 1—10. *Blackw. t.* 198. *Regn. bot. Evelyn ed. Hunter,* 278. *n.* 2.
P. Picea. *Du Roi harbk.* 2. 110.
Abies Picea. *Mill. dict. n.* 2. *Lin. hort. cliff.* 449. *fl. ſuec. n.* 875. *lapp. n.* 347. *Gmel. ſib.* 1. 175. *Duham. arb.* 1. 3. *t.* 2.
A. rubra. *Trag.* 1117.
A. mas Theophraſti. *Raii hiſt.* 1396. *ſyn.* 441.
Picea. *Camer. epit.* 47. *Matth.* 97. *Park. theat.* 1538. *Oelhaf. arb.* 35. *t.* 9—16.——major. *Ger.* 1172. *emac.* 1354.
P. major prima ſ. Abies rubra. *Baub. pin.* 493.
Leaves ſolitary ſomewhat four-cornered ſharpiſh diſtich; branches naked below, cones cylindrical.
20. Pinus alba. *White Spruce Fir Tree.*
Ait. kew. 3. 371.
Abies canadenſis. *Mill. dict. n.* 4.
Leaves ſolitary four-cornered the lateral ones curved in, branches almoſt naked beneath, cones ſubcylindrical.
[21. Pinus orientalis. *Oriental Fir Tree.*
Lin. ſpec. 1421. *ſyſt.* 861. *Reich.* 4. 178.
Abies orientalis folio brevi & tetragono, fructu minimo deorſum inflexo. *Tournef. cor.* 41.
Leaves ſolitary four-cornered.]

DESCRIPTIONS, *&c.*

1. The Wild Pine is called in Britain the Scotch Fir, from its growing naturally in the mountains of Scotland; but it is common in moſt parts of Europe, particularly the northern parts; and Monſ. Duhamel mentions his having received cones of this tree from St. Domingo. The wood is the red or yellow deal, which is the moſt durable of any of the kinds yet known. The leaves are much ſhorter than thoſe of the Pinaſter and Stone Pine, broader, of a grayiſh colour and twiſted. The cones are ſmall, pyramidal, and end in narrow points; they are of a light colour, and the ſeeds are ſmall.

[In a favourable ſoil this tree grows to the height of fourſcore feet, with a ſtraight trunk. The bark is of a browniſh colour and full of crevices. The leaves iſſue from a white truncated little ſheath in pairs; they are linear, acuminate, quite entire, ſtriated, convex on one ſide, flat on the other, mucronate, bright green, ſmooth, from an inch and half to two inches or a little more in length. The ſcales of the male catkins roll back at top, and are feathered. The inner and upper ſcales of the cones gradually terminate in a ſhort awn, but the lower ſcales have none; the ſcales open very readily *.

Few trees have been applied to more uſes than this. The talleſt and ſtraighteſt afford maſts to our navy. The timber is reſinous, durable, and applicable to numberleſs domeſtic purpoſes. From the trunk and branches of this and others of the genus tar and pitch are obtained: by inciſion barras, burgundy pitch and turpentine are acquired and prepared. The reſinous roots are dug out of the ground in many parts of the Highlands of Scotland, and being divided into ſmall ſplinters, are uſed by the inhabitants inſtead of candles. The fiſhermen make ropes of the inner bark: but hard neceſſity has taught the Laplanders and Kamſchatdales to convert it into bread. To effect this, in ſpring they ſtrip off the outer bark carefully from the faireſt trees, and collect the ſoft white ſucculent interior bark, and dry it in the ſhade. When they have occaſion to uſe it, they firſt toaſt it at the fire, then grind, and after ſteeping the flour in warm water to take off the reſinous taſte, they make it into thin cakes and bake them. Linneus remarks, that this bark-bread will fatten ſwine; and that the boys in Sweden, frequently peel off the bark in the ſpring, and eat it raw with a greedy appetite.

From the cones a diuretic oil is prepared, like oil of turpentine, and a reſinous extract, which has ſimilar virtues with Balſam of Peru. An infuſion of the buds is highly commended as an antiſcorbutic.

* Pollich.

The

The farina of the male flowers is ſometimes in ſpring, carried away by the winds in ſuch quantities, as to alarm the ignorant with the notion of its raining brimſtone [1].

Though the different ſpecies of Fir poſſeſs in common the ſame medicinal properties, and agree in affording the different products of the turpentine kind, yet ſome produce them in greater purity or abundance than others. This tree not only furniſhes moſt abundantly the *Pix liquida* or Tar; but common Turpentine, and the white and yellow reſins may alſo be obtained from it.

The manner in which Tar is procured, is by cutting the tree into pieces, which are incloſed in a large oven; with a channel at the bottom. A ſufficient degree of heat is then applied, by which the Tar is forced out of the wood, and runs off by the channel: a proceſs termed *diſtillatio per deſcenſum*.

Tar is properly an empyreumatic oil of turpentine, and has been much uſed as a medicine both internally and externally. Tar water, or water impregnated with the more ſoluble parts of Tar has been a very popular remedy in various obſtinate diſorders, both acute and chronic: and though its medicinal efficacy has been greatly exaggerated, yet Dr. Cullen acknowledges that he experienced it to be a valuable medicine, and that it appeared to ſtrengthen the tone of the ſtomach, to excite appetite, promote digeſtion, and cure all ſymptoms of dyſpepſia: at the ſame time it manifeſtly promotes the excretions, particularly that of urine.

The proportions that have been commonly employed, are two pounds of tar to a gallon of water; theſe are well ſtirred together, ſuffered to ſettle for two days, and then poured off. From a pint to a quart, according to circumſtances, may be taken in the courſe of twenty-four hours. Dr. Cullen thinks with Mr. Reid, that the acid principle gives the virtue to Tar water; and hence the Biſhop of Cloyne properly preferred the Norway Tar to that of New England, the former containing more acid than the latter.

An ointment of Tar is directed both in the London and Edinburgh Pharmacopœias, which has been chiefly employed in cutaneous diſorders [2].]

β. Tartarian Pine has a great reſemblance to the Scotch Pine, but the leaves are broader, ſhorter, and their points are more obtuſe; they emit a ſtrong balſamic odour when bruiſed: the cones of this are very ſmall, as are alſo the ſeeds, ſome of which are black, and others white.

It grows naturally in Tartary, whence Mr. Miller received the ſeeds.

γ. This has very narrow green leaves, which grow ſometimes by pairs, ſometimes by threes from the ſame ſheath; they generally ſtand erect; the cones are of a middling ſize and pyramidal; the ſcales are flat, having each a ſmall obtuſe riſing, but very compact till they are opened by the warmth of the ſun the ſecond ſpring. The ſeeds of this are much leſs than thoſe of the Pinaſter, but larger than thoſe of the Scotch Pine.

Native of the Swiſs mountains, where it is called Torch Pine, grows to a great height, is full of reſin, the wood, when firſt cut, of a reddiſh colour, and uſed in building.

[Monſ. Villars ſays it is the moſt common ſort on the mountains of Dauphiné, but that the ſhortneſs of the trunk and other characters diſappears when it grows in lower ſituations, inſomuch that it cannot then be diſtinguiſhed from the common ſort.]

ε. This has ſmooth leaves; the cones are very long and ſlender; and the ſeeds are about the ſame ſize with thoſe of the Pinaſter.—It grows in the maritime parts of Italy and the South of France.

ζ. The Pinaſter grows to a large ſize; the branches extend on every ſide to a conſiderable diſtance, and whilſt the trees are young, they are fully furniſhed with leaves, eſpecially when they are not ſo cloſe as to exclude the air from thoſe within; but as they advance in age, the branches appear naked, and all thoſe which are ſituated below become unſightly: hence, and becauſe the timber of the Scotch Pine is much preferable to this, it has been more generally propagated. The branches of the Pinaſter grow at a wider diſtance than thoſe of the Scotch Pine, and are more horizontal; the leaves are much larger, thicker and longer, grow ſtraight, have a broad ſurface on their inſide, which has a furrow or channel running longitudinally; they are of a darker green and their points are obtuſe. The cones are ſeven or eight inches long, pyramidal with pointed ſcales; the ſeeds are oblong, a little flatted on their ſides, and have narrower wings on their tops.

It grows naturally in the mountains of Italy and the South of France, where there are foreſts of theſe trees, which if ſuffered to ſtand, grow to a large ſize; in Switzerland they are frequently cut into ſhingles for covering their houſes, and alſo for making Pitch: in the South of France the young trees are cut for ſtakes to ſupport their vines.

[It was cultivated here in 1596, by Gerarde [3].]

3. This never riſes to any great height, and is the leaſt eſteemed in the country of all the ſorts. While the trees are young they make a pretty good appearance, but when they get to the height of ſeven or eight feet they become ragged and unſightly, and are therefore not worth cultivating here.

It grows naturally in moſt parts of North America; [and was cultivated in 1748, by Mr. Miller.

4. Native of North America. Cultivated in 1756, by Hugh Duke of Northumberland [4].]

5. This tree branches out on every ſide near the root; the branches at firſt grow horizontally, but turn their ends upwards; their bark is ſmooth and of a dark gray colour. The leaves are long and very narrow, of a dark green, and if they are bruiſed emit a ſtrong reſinous odour. The cones come out from the ſide of the branches; they are not much more than half the length of thoſe of the Pinaſter, but are full as large at their baſe; the ſcales are flatted, and the point of the cones is obtuſe. The ſeeds are much leſs than thoſe of the Pinaſter, but of the ſame ſhape.

It grows naturally near Aleppo, and in ſeveral other parts of Syria, and is a tree of middling growth there; but in England moſt of the trees were killed in the ſevere winter of 1740. The two largeſt which Mr. Miller had ſeen were at Goodwood in Suſſex, the ſeat of his grace the Duke of Richmond, which were raiſed by Mr. Miller, and had been tranſplanted thither the year before, and having ſcarcely recovered their removal, had made no ſhoots that ſummer, and therefore eſcaped much better than thoſe trees which were in greater vigour.

The ſeeds of this tree were ſent to Mr. Miller from Aleppo, by Conſul Cox, in the year 1732. He raiſed many of the plants in the Cheſſea garden, ſome of which were grown upwards of eight feet high by the year 1740, when moſt of them were deſtroyed by the froſt.

Mr. Miller mentions that he received cones of a Pine Tree, brought from Aleppo by Dr. Ruſſel, from which he raiſed many plants, bearing a near reſemblance to this; but that the cones were more pointed, and the ſcaly protuberances ſharper than thoſe of the Goodwood cones. Mr. Miller therefore ſuſpects them to be different, and imagines the cones brought over by Dr. Ruſſel to belong to Tourneſort's Pinus orientalis foliis curioribus amaris, fructu parvo peracuto. *Coroll.* 41 [5].

6. The leaves of the Stone Pine are not quite ſo long as thoſe of the Pinaſter, and are of a grayiſh or ſea-green colour. The cones are not more than five inches long, but are very thick, roundiſh, and end obtuſely; the ſcales are flat, and the ſeeds are more than twice the ſize of thoſe of the Pinaſter. The kernels are frequently ſerved up in deſerts during the winter ſeaſon in Italy and the South of France; and formerly they were uſed in medicine here; but Piſtachia nuts have been generally ſubſtituted for them. The wood is white, and not being ſo full of reſin as many of the

[1] Lightfoot. [2] Woodville. [3] Hort. Kew. [4] Idem. [5] Mill. Dr.

other ſorts, this tree is not cultivated for timber, but chiefly for the beauty of its leaves, and for the nuts; [the kernels of which are as ſweet as Almonds, but with a ſlight flavour of turpentine.

The Stone Pine will grow to a conſiderable height, with a ſtraight and fair ſtem, but a rough bark. The leaves contribute to diverſify the ſcene in plantations, as they differ in colour from the other ſorts, and are arranged in a different manner. The cones are very large and turbinate, ſtriking the eye by their bold appearance when hanging on the trees; and when cloſely examined, they afford pleaſure from the beautiful arrangement of their ſcales [1].

Native of the South of Europe.] Very common in Italy (particularly about Ravenna:) but Mr. Miller doubts whether this ſpecies is originally of that country, becauſe there are none of the trees growing there, except where they have been planted, or where the ſeeds are ſcattered from planted trees. He has frequently received the ſeeds of a Pine from China ſo like thoſe of this ſort as not to be diſtinguiſhed from them; but having never vegetated, he could not aſcertain the ſpecies.

[Sir George Staunton relates that the kernels of the Stone Pine are much reliſhed by the Chineſe.

It was cultivated here in 1570, as appears from Lobel [m].]

7. This has very long narrow leaves, growing by threes out of each ſheath. The cones are as large as thoſe of the Stone Pine, but they are more pointed, and the ſcales are looſer; they open horizontally and diſcharge the ſeeds. The French in Canada built a ſixty-four gun ſhip entirely with the wood of this tree, which is like that of the Scotch Pine, but has more reſin.

It is a native of North America, whence it was ſent to Mr. Ball of Exeter, and to Compton Biſhop of London, by the name of Frankincenſe Pine.

β. Leaves long, generally three in each ſheath. Cones in cluſters round the branches, as long as thoſe of the Pinaſter, but with rigid ſcales: the ſeeds alſo are nearly as large as thoſe of the Pinaſter. It grows naturally in Virginia, and other parts of North America, where it riſes to a great height. There are many of theſe trees in the noble plantations of his Grace the Duke of Bedford at Woburn, which were twenty feet high, when they were not of many years ſtanding, and kept pace with the other ſorts in the ſame plantation.

[According to the Kew catalogue, *Pinus Tæda* was introduced in 1736, by Peter Collinſon, Eſq.—There are many other varieties ſent over from North America, ſome of which have little or no difference.]

8. This tree grows to the height of twenty-five or thirty feet, on the ſwamps of North America. The leaves are a foot or more in length, growing in tufts at the ends of the branches, and therefore having a ſingular appearance. The wood is of little uſe but for fuel.

[Native of Carolina and Georgia. Cultivated here in 1730 [n].]

9. The Siberian Stone Pine is confounded with that of Switzerland; but the cones of the latter are ſhort and roundiſh, with cloſe ſcales, whereas thoſe of the Siberian Pine are long and the ſcales looſer. The leaves have a near reſemblance; but the plants raiſed from Swiſs ſeeds make much greater progreſs than the others, which can ſcarcely be kept alive in England.

[The Cembra Pine grows higher up the Alps than any other Pine, and is even found at elevations where the Larch will not grow. The ſtones are ſhorter than thoſe of the Stone Pine, but full as thick. The wood is very ſoft, and having ſcarcely any grain, is very fit for the carver. The peaſants of the Tyrol, where this tree abounds, make various ſorts of carved works with this wood, which they diſpoſe of in Switzerland among the common people, who are fond of the reſinous ſmell which it exhales.

Linnæus and other botaniſts make this the ſame with the Siberian Stone Pine, which reſembles it much, but Duhamel and Haller will have them to be diſtinct ſpecies. The Siberian Pine is lofty and ſtraight, puſhing out few ſide branches; whereas the Swiſs Pine is ſmall, knotty and often deformed. The wood of the Siberian has *no* ſmell, and the cones are different. In the Brianconnois the Cembra is called *Alviez*, and in Savoy *Aroles* [o]. But Villars remarks that it has different names in almoſt every village of Dauphiné. The kernels are good to eat, and yield abundance of oil which ſmells a little of turpentine; it is pectoral and diuretic [p].

Mr. Harte deſcribes it under the name of *Aphernonſii* Pine: and at Gleddow near Leeds it is called the *Gleddow* Pine. There are ſeveral of the trees in the plantations belonging to Jeremiah Dixon, Eſq. at that place.

It is likely to thrive in bleak rocky ſituations, or peaty moors: the timber is large; the bark of the trunk is of a whitiſh caſt. Wainſcotting, flooring and other joiner's work made of the planks, are of a finer grain, and more beautifully variegated than Deal, and the ſmell is more agreeable. A white odoriferous reſin is extracted from this wood [q].

Scopoli thus deſcribes the Cembra in his Iter Tyrolenſe—Bark ſmooth. Leaves from three to five in a ſheath, three-cornered, the corners rough when ſtroaked downwards; one of them flat, ſhining and green; the others whiter and not ſhining. Male aments in pairs, half an inch long, red, coming out at the baſe of the new leaves, compoſed of keeled, ovate ſcales, and two-celled, pedicelled anthers. Female cones oval, compoſed of hemiſpherical ſcales terminated by a brown point, wrinkled, of a pale ferruginous colour, two-celled within, and having a brown wedge-ſhaped nut in each cell, furniſhed with two oppoſite angles, and containing an eatable, oily, white kernel, covered with a ruſous ſkin.

Native of Switzerland and Siberia. Cultivated in 1746, by Archibald Duke of Argyle [r].

10. Native of Hiſpaniola. This has been confounded with Pinus Strobus or the Weymouth Pine [s].

11. The Weymouth Pine, or White Pine as it is called in North America, is one of the talleſt ſpecies, often attaining a hundred feet in height in its native country. The bark is very ſmooth and delicate, eſpecially whilſt the tree is young. The leaves are long and ſlender; they are pretty cloſely placed on the branches, and make a fine appearance. The cones are long, ſlender and very looſe, opening with the firſt warmth of the ſpring; ſo that if the ſeeds are not gathered in winter, the ſcales open and let them out. The wood is eſteemed for maſts of ſhips; and there was a law made in the ninth of Queen Anne for the preſervation of theſe trees, and to encourage their growth in America. It is only within forty years paſt that they began to be propagated in England in any plenty [t]; though there were ſome large ones growing in two or three places long before, particularly at Lord Weymouth's, and at Sir Wyndham Knatchbull's in Kent: and it has been chiefly from the ſeeds of the latter, that moſt of the trees now in England have been raiſed, or from thoſe in the plantations of the Duke of Argyle at Whitton. This and the Scotch Pine are the beſt worth cultivating for timber. In England it is called Lord Weymouth's or New-England Pine: [and was cultivated in 1705, by the Dutcheſs of Beaufort [u].

The value of the timber in our iſland, eſpecially in cold ſoils, is perhaps doubtful; nor will it bear the ſeverity of our winters, and the variableneſs of our ſprings, except in particular ſituations and ſoils; as Earl Nugent's plantations at Gosfield and others too plainly teſtify [w].

The ſize to which this beautiful ſpecies will arrive may be ſuppoſed from a tree which was cut down in 1736 on the banks of the river Merimack, that was ſeven feet eight inches in diameter at the butt end [x]. It is very fit for maſts.

[1] Hunter in Evel. ſilva. [m] Advers. 449. Hort. kew. [n] Hort. kew.

[o] De Sauſſure, voyages, 2. 14. [p] Villars. [q] Dr. Hunter in Evel. ſilva. Harte's Eſſays, 102. [r] Hort. kew. [s] Swartz. [t] This was ſaid in 1768. [u] Hort. kew. [w] R. in Young's annals. [x] Hunter Evel. ſilva.

12. That noble tree, the Cedar of Lebanon, has a general ſtriking character of growth ſo peculiar to itſelf, that no other tree can poſſibly be miſtaken for it. It is placed by Linneus, along with the Larch, in the ſame genus with the Firs and Pines: it agrees with the former in its foliation, with the latter in being evergreen.

The ſturdy arms, ſays Evelyn, grow in time ſo weighty, as often to bend the very ſtem and main ſhaft; the leaves much reſemble thoſe of the Larch, but are ſomewhat longer and cloſer ſet, erect and perpetually green, which thoſe of the Larch are not; but hanging down, dropping off, and deſerting the tree in winter. The cones are tacked and ranged between the branch-leaves, in ſuch order, as nothing appears more curious and artificial, and at a little diſtance exceedingly beautiful: theſe cones have the baſes rounder, ſhorter, or rather thicker, and with blunter points, the whole circumzoned, as it were, with pretty broad thick ſcales, which adhere together in exact ſeries to the very ſummit, where they are ſomewhat ſmaller; but the entire lorication ſmoother couched than thoſe of the Firs: within theſe repoſitories, under the ſcales, neſtle the ſmall nutting ſeeds, of a pear-ſhape [a].] Theſe cones grow upon the upper part of the branches, and ſtand erect, having a ſtrong, woody, central ſtyle, by which they are firmly annexed to the branch, ſo as with difficulty to be taken off; which central ſtyle remains upon the branch after the cone is fallen to pieces; for it never drops off whole, as thoſe of the Pines do.

Many wonderful properties are aſcribed to the wood of this celebrated tree, ſuch as its reſiſting putrefaction, deſtroying noxious inſects, continuing a thouſand or two thouſand years ſound, yielding an oil famous for preſerving books and writings, [purifying the air by its effluvia, inſpiring worſhippers with a ſolemn awe, when uſed in wainſcotting churches or chapels, &c.

Touching the duſturnity of this material, ſays Mr. Evelyn, 'tis recorded, that in the temple of Apollo Utica, there was found timber of two thouſand years old; and at Saguntì in Spain, a beam in an oratory conſecrated to Diana, which was brought to Zant, two centuries before the deſtruction of Troy: that Seſoſtris built a veſſel of Cedar of 280 cubits: and the ſtatue of the Goddeſs in the famous Epheſine temple, was ſaid to be of this material, as was moſt of the timber-work of that glorious ſtructure. In the relation of the properties aſſigned to this tree there is much vulgar error, and confuſion of the Cedar of Lebanon, with other trees called Cedars; and as to the materials uſed in the heathen temples, it is very uncertain what they were. We have better authority than that of Pliny, that this was the ſpecies of timber employed in building the ſumptuous temple and palace of Solomon at Jeruſalem.—" Now therefore command thou, ſaid " Solomon to Hiram, that they hew me Cedar-trees " out of Lebanon. I will do all thy deſire, replied " Hiram concerning timber of Cedar, and concerning " timber of Fir [b]. And Solomon raiſed a levy of " thirty thouſand men out of all Iſrael; and he ſent " them to Lebanon, ten thouſand a month, by courſes: " and he had threeſcore and ten thouſand that bare " burdens, and fourſcore thouſand hewers in the moun- " tains [c]. And he covered the temple with beams and " boards of Cedar. And he built chambers againſt " it, which reſted on the houſe with timber of Cedar [d]. " And the Cedar of the houſe within was carved with " knops and open flowers: all was Cedar, there was " no ſtone ſeen [e]. And he built the inner court with " three rows of hewed ſtone, and a row of Cedar " beams [f].—Solomon's houſe alſo of the foreſt of " Lebanon was covered with Cedar upon the beams: " and the porch of judgment was covered with Cedar " from one ſide of the floor to the other. And the " great court of his palace was with three rows of " hewed ſtones, and a row of Cedar beams [g]."

Mr. Evelyn remarks, that the Cedar is of ſo dry a nature, that it does not well endure to be faſtened with nails, from which it uſually ſhrinks, and therefore pins of the ſame wood are better [h].

The alluſion of the Pſalmiſt, of ſpreading abroad like a Cedar in Libanus, ſhows that he was well acquainted with this tree, which is remarkable for the wide ſpread of its branches, rather than for its height. Had Milton known it as well, he would not have uſed the expreſſion of the—

" Inſuperable height of loftieſt ſhade:"

in ſpeaking of the Cedar.

It is not only found on mount Lebanon or Libanus, but Belon obſerved it on the mountains Amanus and Taurus.

Solomon's fourſcore thouſand hewers muſt have conſiderably thinned the foreſt of Libanus. Few now remain there.

Rauwolff in 1575 ſaw only twenty-four ſound trees, and two old decayed ones. " We found ourſelves (ſays he) upon the higheſt point of the mountain, and ſaw nothing higher, but only a ſmall hill before us, all covered over with ſnow, at the bottom whereof the high Cedar trees were ſtanding. And though this hill hath in former ages been quite covered over with Cedars, yet they are ſince ſo decreaſed, that I could tell no more but twenty-four that ſtood round about in a circle, and two others, the branches whereof are quite decayed for age. I alſo went about in this place to look out for ſome young ones, but could find none at all. Theſe trees are green all the year long, have ſtrong ſtems that are ſeveral fathoms about, and are as high as our Fir trees [i]."

Maundrell, in 1696, may 9th, could reckon only ſixteen large trees, but many ſmall ones. His account is as follows.—" Having gone for three hours acroſs the plain of Tripoli, I arrived at the foot of Libanus; and from thence continually aſcending, not without great fatigue, came in four hours and a half to a ſmall village called Eden, and in two hours and a half more to the Cedars. Theſe noble trees grow amongſt the ſnow near the higheſt part of Libanus; and are remarkable as well for their own age and largeneſs, as for thoſe frequent alluſions made to them in the word of God. Here are ſome of them very old, and of a prodigious bulk; and others younger, of a ſmaller ſize. Of the former I could reckon up only ſixteen; and the latter are very numerous. I meaſured one of the largeſt, and found it twelve yards ſix inches in girt, and yet ſound, and thirty-ſeven yards in the ſpread of its boughs. At about five or ſix yards from the ground, it was divided into five limbs, each of which was equal to a great tree [k]."] What Maundrell has related, ſays Mr. Miller, was confirmed to me by a worthy gentleman of my acquaintance, who was there in the year 1720, with this difference only, that in meaſuring the branches of the largeſt tree, he found them to be twenty-two yards in diameter. [Suppoſing theſe two gentlemen to have meaſured the ſame tree, and not to be miſtaken in their admeaſurement, this difference can only be reconciled by ſuppoſing that the latter meant the ſpread of the boughs from the trunk, the former the whole ſpread or diameter, which we may conceive to have increaſed in twenty-four years.] The traveller Le Bruyn reckons about thirty-five or thirty-ſix trees remaining on mount Libanus when he was there, and would perſuade us it was not eaſy to reckon their number, as is reported of the ſtones of our Stonehenge on Salisbury plain. He alſo ſays that ſome of the cones grow dependent, which is abundantly confuted by the above-mentioned travellers, and alſo from our own experience.

[The few Cedars ſtill remaining on mount Libanus are preſerved with a religious ſtrictneſs. On the day of the Transfiguration, the Patriarch repairs in proceſſion to theſe trees, and celebrates a feſtival called the feaſt of Cedars [l].

We have now probably more Cedars in England, than are left on mount Libanus.] It is matter of

[a] Silva, p. 151. ed. 4. 1706. [b] 1 Kings v. 6—8. [c] Ibid. v. 13—15. [d] Ibid. c. vi. 9, 10. [e] Ibid. v. 18. [f] Ibid. v. 36. [g] Ibid. c. 7.

[h] Silva. 156. [i] Travels, part 2. chap. 12.

[k] A journey from Aleppo to Jeruſalem, by Henry Maundrell, M. A. Oxf. 1721. p. 142.

[l] Hunter's notes on Evelyn.

ſurpriſe

ſurpriſe to me, ſays Mr. Miller, that this tree has not been more cultivated in England formerly, for till within a few years paſt, there were but few here; ſince it would be a great ornament to barren bleak mountains, where few other trees will grow ſo well; it being a native of the coldeſt parts of mount Libanus, where the ſnow continues great part of the year. From the obſervations I have made of the trees now growing in England, I find that ſuch as have been planted in a ſtrong, rich, loamy earth, have made a poor progreſs, in compariſon with thoſe which have grown upon a ſtony meagre ſoil. That theſe trees are of quick growth, is evident from four of them in the botanic garden at Chelſea, which, as I have been credibly informed, were planted there in the year 1683, and at that time were not above three feet high. [Sir Hans Sloane, in a letter to Mr. Ray, dated march 7, 1684-5, ſays—" I was the other day at Chelſea, and find that the artifices uſed by Mr. Watts have been very effectual for the preſervation of his plants, inſomuch that this ſevere enough winter has ſcarce killed any of his fine plants. One thing I much wonder, to ſee that the *Cedrus Montis Libani*, the inhabitant of a very different climate, ſhould thrive here ſo well, as without pot or greenhouſe to be able to propagate itſelf by layers this ſpring. Seeds ſown laſt autumn have as yet thriven very well, and are like to hold out. The main artifice I uſed to them, has been to keep them from the winds, which ſeem to give a great additional force to the cold, in deſtroying tender plants[1]."] Two of theſe trees were in 1766 upwards of twelve feet and a half in girt, at two feet above the ground, and their branches extended more than twenty feet on every ſide their trunks; which branches, though they were produced twelve or fourteen feet above the ſurface, did at every termination hang very near the ground, and thereby afford a goodly ſhade in the hotteſt ſeaſon of the year. [In auguſt, 1793, the girt of the largeſt at three feet from the ground was twelve feet eleven inches and a half, of the ſmaller twelve feet and a quarter of an inch, as meaſured by Sir *Joſ.* Banks.]

The ſoil in which theſe trees were planted, is a lean hungry ſand mixed with gravel, the ſurface of which is ſcarcely two feet deep, before a hard rocky gravel appears. They ſtood at four corners of a pond, bricked up within two feet of their trunks, ſo that their roots having no room to ſpread on one ſide were cramped in their growth; but whether their ſtanding ſo near the water might not have been advantageous to them, I cannot ſay; but ſure I am, if their roots had had full ſcope in the ground, they would have made a greater progreſs. [Probably the roots, finding themſelves ſtopped by the brick wall, tended downwards, and ſpread themſelves in the moiſt earth under the water, which promoted greatly the growth of the trees; for ſome years after the time of which Mr. Miller ſpeaks, this pond having been filled up, theſe noble trees decayed, and were quickly ruined for want of their accuſtomed beverage.]

I have alſo obſerved, that lopping or cutting theſe trees is very injurious to them, more perhaps than to any other of the reſinous trees, in retarding their growth: for two of the four trees abovementioned, having been unadviſedly planted near a green-houſe, when they began to grow large, had their branches lopped, to let the ſun into the houſe, whereby they were ſo much checked, as to be little more than half the ſize of the other two.

All theſe trees produced, for ſeveral years, large quantities of catkins, or male flowers; but only three of them had, in 1766, produced cones; nor was it above thirty-five years before that period, that theſe ripened their cones, ſo as to perfect the ſeeds; but after that, the ſeeds that fell out of the cones on the ground near them produced plants in plenty, which came up naturally without care. Since then we find that the Cedar is ſo far naturalized to our country as to produce ripe ſeeds, we need not fear a ſupply, without depending on the cones from the Levant: but I find they are more apt to produce and ripen their cones in hard winters than in mild ones; which is a plain indication that they will ſucceed, even in the coldeſt parts of Scotland, where, as well as in England, they might be propagated to great advantage.

[The Cedars at Chelſea are ſuppoſed, in the Kew catalogue, to have been the firſt known to be planted in England. Dr. Hunter, in his additions to Evelyn ſays, that we do not know when and by whom the Cedar was firſt introduced here. Dr. Turner, when he treats of the Pine tree, and other trees of that kind, ſays nothing of it. Gerarde mentions it not as growing here; and Parkinſon ſays, the branches, ſome ſay, all grow upright, but others, ſtraight out. It is very certain, from what Mr. Evelyn ſays, that it was not cultivated in England in 1664, but from the warm manner in which he expreſſes himſelf on this head it is probable, that it ſoon after became an object of the planter's attention.—Mr. Evelyn informs us, that he received cones and ſeeds of the few remaining trees on Libanus; and adds, why they ſhould not thrive in old England I know not, ſave for want of induſtry and trial[a].

The old palace or manor houſe at Enfield, was occupied by Robert Uvedale, L.L.D. who kept a flouriſhing ſchool there, about the year 1670. In the gardens, among other curious trees planted by Dr. Uvedale, there is a fine Cedar. The body, excluſive of the boughs, contains about 103 cubical feet. Girt at top three feet ſeven inches, ſecond girt ſeven feet nine inches, third girt four feet, fourth, fourteen feet ſix inches. It is in height forty-five feet nine inches, eight feet having been broken off from its top by the hurricane in 1703; and in 1793, was twelve feet in girt, at three feet from the ground. An account of it was printed in 1788, in four pages ſmall folio[b].

Several other Cedars of conſiderable ſize are or were ſcattered about in different parts of this kingdom: ſome of the fineſt of theſe were planted at Whitton by Archibald Duke of Argyle. One of the moſt remarkable was blown down by the hurricane that happened on the firſt of january 1779. It grew on the north ſide of Hendon place in Middleſex. Its height was ſeventy feet, the diameter of the horizontal extent of the branches was one hundred feet, the circumference of the trunk ſeven feet above the ground ſixteen feet; and at twelve feet above the ground twenty-one feet. At this latter height it began to branch; and its limbs, about ten in number, were from ſix to twelve feet in circumference. This tree is ſuppoſed to have been two hundred years old, and tradition ſays was planted by Queen Elizabeth herſelf[c]. Tradition is ſeldom to be depended on, and Queen Elizabeth is a great favourite with tradition-mongers. But is it probable if ſuch a tree exiſted in 1579, that Gerarde, Parkinſon and Evelyn ſhould know nothing of it? When blown down it was perfectly ſound, and ſeemed as if not grown to maturity; it is probable therefore that it was not two hundred years old, for the Cedars at Chelſea attained ther full ſize and decayed in leſs than a century.

The following are the dimenſions of a fine Cedar growing at Hillington near Uxbridge. The height fifty-three feet; the extent of the branches from eaſt to weſt ninety-ſix, from north to ſouth eighty-nine feet; the circumference of the trunk cloſe to the ground thirteen feet and a half, ſeven feet above the ground twelve and a half, twelve feet above the ground fourteen feet eight inches, at the height of thirteen feet and a half juſt under the branches fifteen feet eight inches. It has two principal branches, one of which is forked eighteen inches above its origin: before it divides it meaſures twelve feet round, after its diviſion one of the forks meaſures eight feet and a half, the other ſeven feet ten inches. The other primary branch, at its origin, meaſures ten feet, and ſoon dividing, throws out two ſecondary ones, each five feet and a half. Its age is ſuppoſed to be 116 years[d].

[1] Ray's philoſ. letters, p. 176.

[a] Silva, p. 154.

[b] Hunter, and Lyſons, 2. 285. & 4. 625. See Gentl. mag. for 1779.

[c] Hunter's additions to Evelyn. [d] Idem.

The

The only relick of Dr. James Sherard's famous botanic garden at Eltham, ſo elegantly diſplayed by Dillenius, is a Cedar of Lebanon, which girts nine feet at three feet from the ground. It is now in the poſſeſſion of John Dorington, Eſq.[9]

Another of theſe trees is in the fellow's garden at Emanuel College in Cambridge, on a lawn by the ſide of the pond. It was planted in the year 1730 by Profeſſor John Martyn, then a member of that college. The leading ſhoot being killed by the ſevere winter of 1740, its height is not very conſiderable; in form it is pyramidal, like the Spruce Fir, and it branches almoſt from the bottom.

Mortimer, in his Art of Huſbandry, (edit. 2. 1708. p. 370.) affirms, that he had raiſed ſeveral Cedars of cones which he had from Lebanon, and that he then had a walk planted with them.]

13. There is a particular ſort of this tree, brought from North America, and growing in the garden of Mr. Peter Collinſon at Peckham in Surry, which differs from the European ſort in having darker ſhoots. This is not mentioned by botaniſts, nor has it been long known in Europe, though it grows plentifully in ſome of the northern parts of America. It does not promiſe to make ſo large trees as the European, and therefore ſhould be planted with thoſe of lower growth, to make a variety. It will endure the ſevereſt cold of this climate[1].

14. The common or white Larch Tree is of quick growth, and will riſe to the height of fifty feet; the branches are ſlender, and their ends generally hang down. The leaves are long and narrow, in cluſters from one point, ſpreading open above like the hairs of a painter's bruſh, of a light green, and falling off in autumn; in which circumſtance this and the preceding differ from all the other ſpecies of this genus. In the month of april the male flowers appear, diſpoſed in form of ſmall cones; the female flowers are collected into egg-ſhaped obtuſe cones, which in ſome have bright purple tops, but in others they are white: this difference is accidental, for ſeeds taken from either will produce plants of both ſorts: the cones are about an inch long, and the ſcales are ſmooth; under each ſcale two winged ſeeds are generally lodged.

There are two other varieties of this tree, one a native of America, the other of Siberia: the latter requires a colder climate than England, for the trees are apt to die in ſummer here, eſpecially if they are planted on a dry ſoil. The cones of this which have been brought to England, ſeem to be in general larger than thoſe of the common ſort; but there is ſo little difference between the trees in their characteriſtic notes, that they cannot be diſtinguiſhed as different ſpecies, though in the growth of the trees there is a remarkable difference.

Mr. Miller mentions another variety from China, which he diſtinguiſhes as a ſpecies, under the name of *Larix chinenſis*. The cones were ſent to Hugh Duke of Northumberland, and the ſeeds, being ſown, grew both at Stanwick and in the Chelſea garden. The cones were much larger than thoſe of the common ſort, and ended in acute points; the ſcales were prominent like thoſe of the Scotch Pine, and had ſo little reſemblance to thoſe of the Larch, that every one who ſaw them, imagined they belonged to a ſort of Pine, and they were ſent over under the name of Pine good to keep up banks. As the plants made but little progreſs the firſt year, they were weak, and caſting off their leaves in autumn were ſuppoſed to be dead, and thus moſt of them were loſt; but thoſe which eſcaped, afterwards ſhot out their branches horizontally, ſpreading cloſe to the ground, and ſeemed to be ſhrubs, which would never riſe upright. They are ſo hardy, as to thrive in the open air without any protection.

[Pallas thus diſtinguiſhes the European Larch from the American. In the latter the branches are more ſlender, with a bark more inclining to yellow, and the ſcars more ſlender and cluſtered; the leaves are more tender, narrower, more glaucous, and the outer ones in each bundle ſhorter; cones only one-third of the ſize, blunt, with ſcales ſcarcely exceeding twelve in number, thinner, more ſhining, retuſe-emarginate; wings of the ſeeds ſtraight, more oblong, narrower, and together with the ſeed itſelf of a more diluted gray colour.

In the European *Larch* the bark of the branches is of an aſh-coloured gray; the leaves a little wider, bright green, all nearly equal, commonly more than forty in a bundle: the cones an inch long, with above thirty woody, ſtriated, rounded, entire ſcales. Seeds brownish-gray, with ſubtriangular wings ſomewhat bent in. In both, the cones are bent upwards on very ſhort pedicles[2].

No tree is more valuable, or better deſerves our attention in planting than the Larch. It is a native of the South of Europe and of Siberia. It appears from Parkinſon's Paradiſus that it was cultivated here in 1629[3]; and Evelyn ſays, a tree of good ſtature, not long ſince to be ſeen about Chelmsford in Eſſex, ſufficiently reproaches our not cultivating ſo uſeful a material for many purpoſes, where laſting and ſubſtantial timber is required. We read of beams of no leſs than 120 feet in length, made out of this goodly tree. There is abundance of this Larch timber in the buildings at Venice, eſpecially about the palaces in Piazza San Marco, where Scamozzi ſays he uſed much of it, and infinitely commends it. Nor did they only uſe it in houſes, but in naval architecture alſo. It ſeems to excel for beams, doors, windows, and maſts of ſhips: it reſiſts the worm; being driven into the ground it is almoſt petrified, and will ſupport an incredible weight: it bears poliſhing excellently well, and the turners abroad much deſire it: the Larch makes everlaſting ſpouts, pent-houſes and featheredge, which needs neither pitch or painting to preſerve them: excellent pales, poſts, rails, props for vines, &c to theſe add the palats, on which painters ſeparate and blend their colours; and were the tables on which the great Raphael and moſt famous artiſts eternized their ſkill[4].]

In Switzerland, where theſe trees abound, and they have a ſcarcity of other wood, they build moſt of their houſes with it; and great part of their furniture is alſo made of the wood, ſome of which is white, and ſome red, but the latter is moſt eſteemed. The redneſs of the wood is by ſome ſuppoſed to be from the age of the trees, and not from any difference between them, but is rather owing to the quantity of turpentine contained in them. They frequently cut out the boards into ſhingles of a foot ſquare, with which they cover their houſes, inſtead of tiles or other covering: theſe are at firſt very white, but after they have been two or three years expoſed, become as black as charcoal, and all the joints are ſtopped by the reſin, which the ſun draws out from the pores of the wood, which is hardened by the air, and becomes a ſmooth ſhining varniſh, which renders the houſes ſo covered impenetrable to either wind or rain; but as this is very combuſtible, the magiſtrates have made an order of police, that the houſes ſo covered ſhould be built at a diſtance from each other to prevent fire, which has often done great damage in villages.

In moſt countries where this wood is in plenty, it is preferred to all the kinds of Fir for every purpoſe; and in many places there are ſhips built of this wood, which they ſay are durable; therefore this may be a very proper tree for planting upon ſome of the cold barren hills in many parts of England, which at preſent produce nothing to their proprietors, and in one age may be large eſtates to their poſterity, and a national advantage; which might be effected without a great expenſe, where the buſineſs is properly conducted.

[Line of battle ſhips are built with Larch at Archangel, which generally laſt fifteen years. At Venice it is alſo ſometimes employed in ſhip-building, eſpecially in the lighter parts of the upper works, but not where maſſy pieces of timber are required, on account of its weight. It reſiſts the intemperature of the air more

[9] Lyſon's environs of London, 403.
[1] Mill. Dict. vol. 2. 1739.
[2] Flora Roſſica. 1. p. 2.
[3] Hort. kew.
[4] Sylva. p. 153.

than any wood known in that country, and therefore is much uſed for outer gates, pales, &c. In ſome of the old palaces at Venice there are beams of Larch as when firſt placed. In a word, wherever ſtrength and durability are required, this is reckoned there the moſt choice wood they have[s].

Larch wood, ſays Dr. Anderſon, is poſſeſſed of ſo many valuable qualities, that to enumerate the whole would appear extravagant hyperbole. It is known to reſiſt water without rotting almoſt for ever. The piles of this timber on which the houſes of Venice were built many hundred years ago, are ſtill found as freſh as when firſt put in. Stakes of it have been tried in the decoys of Lincolnſhire, which between wind and water, have already worn out two or three ſets of oak ſtakes, and do not yet diſcover any ſymptoms of decay. It is alſo known to poſſeſs the valuable quality of neither ſhrinking nor warping when put into work, nor is it liable to be pierced by worms in our climate.

It is known to be one of the quickeſt growing trees, remarkably hardy, and extremely beautiful. It is much more eaſily reared than the Oak, and could be ſpread over a great extent of mountains, if ſufficiently bare of herbage, at little or no expenſe, by the natural ſhedding of its ſeeds. It would be valuable not only for ſhip-plank; but even crooked timbers might be obtained, by uſing a little art to bend it when young. For flood-gates in navigable canals and wet docks it would exceed every thing that can be obtained in this climate. For barrel ſtaves it would be inimitable; and in building it would anſwer all the purpoſes to which Fir is now applied, being much ſtronger and more durable than that wood. When it is alſo adverted to, that it is next to incombuſtible, it deſerves to be ſtrongly recommended to planters in this country, particularly in the moſt rugged and barren diſtricts; where, at a very trifling charge, eſtates might be brought to a hundred times their preſent value[t].

The ſame valuable author, in the third volume of his Eſſays relating to Agriculture and Rural Affairs, has one entire long chapter, on the value and uſes of the Larch tree; in which he ſays, that it is ſo much more valuable than the Scotch Fir, that it is now univerſally preferred to it, for plantations of large extent, in almoſt every ſituation. That as it has only been of late introduced into Britain, the qualities of the wood are not ſufficiently underſtood: for before the laſt thirty years it was cultivated rather as an ornamental tree, than with a view to profit. But wherever it has been introduced it grows ſo freely; is ſo beautiful when in leaf; ſo highly ornamental when covered with its abundant pink bloſſoms in the ſpring; and is ſo elegant in its form, that it is ſure to become a favourite with the planter.

Dr. Anderſon is ſo full in his collections upon this ſubject, that I ſhall take the liberty of abſtracting ſuch parts of his memoir as have not been already given from their primary ſources.

Among the Romans the Larch was employed, in preference to every other kind of wood, in building, where ſtrength and durability were required; and Vitruvius attributes the ſudden decay of buildings erected in his time, in a great meaſure to the want of Larch in the neighbourhood of Rome; it having been exhauſted before his time, and the expenſe of bringing it from a diſtance being ſo high, as greatly to circumſcribe the uſe of it.

Dr. Pallas, in his ſurvey of the Ruſſian dominions in Aſia, obſerved ſeveral *tumuli* at Kamtſhatka reared at a period ſo remote, that none of the preſent inhabitants had any tradition reſpecting their origin. The platform was covered by Larch wood, over which the mound of earth was raiſed; and the wood was found to be uncorrupted.

I have in my garden, ſays Monſ. le Preſident de la Tour d'Aigues, in the year 1787, ſome rails, part of which are Oak, and part of them Larch wood; they were made in 1743, and only once painted. The Oak has yielded to time, but the Larch is ſtill ſound. They make caſks of it in Provence: the fineneſs of the grain retains the ſpirit of the liquor perfectly, and does not alter its qualities: it has been uſed for that purpoſe for time immemorial in the higher Dauphiné. I have in my caſtle of Tour d'Aigues beams of twenty inches ſquare, which are ſound, though upwards of two hundred years old; but trees of this ſize are now to be found only in places whence they cannot be tranſported. There are in ſome parts of Dauphiné, and in the foreſts of Baye in Provence, Larch trees, which two men could not graſp, and about ſeventy-two feet in height. This account is printed in Memoirs of the Royal Society of Agriculture, Paris 1787.

The Larch muſt ſtand to be of a ſufficient age before the timber acquire its beſt qualities of ſtrength and durability. We have not yet had an opportunity of uſing any of it in perfection in Great Britain; its introduction into this country having been at a period too late to admit of it. The two firſt trees that were planted in Britain, by the beſt accounts I can find, are at Dunkeld in Perthſhire, the ſeat of the Duke of Athole. They were planted in 1741: conſequently Dr. Anderſon ſhould have confined his remark to North Britain, for we have many trees in England prior to theſe: and ſome even in Scotland, belonging to Mr. Drummond were planted in 1734.

It appears from Parkinſon's Paradiſus, that the Larch tree was cultivated here ſo long ſince as 1629: it was then however, as he ſays, "rare, and nurſed up but "with a few, and thoſe only lovers of rarities."

The largeſt of the Larch trees on the Duke of Athole's lawn at Dunkeld was meaſured in the month of march 1796, and the following are its dimenſions:

	F.	In.		F.	In.
At the height of	1	8	from the ground, the circumference is -	11	11
	3	0	———	10	0½
	6	0	———	9	0
	9	0	———	8	6
	12	0	———	8	2
	18	0	———	7	11
	24	0	———	7	7

The whole height was eighty-five feet. There are ſeveral Larches upwards of one hundred feet in height, which are five or ſix years younger, but none of ſo great a girt. The largeſt of Mr. Drummond's was ninety-ſeven feet high, but leſs in circumference.

For a trial, the Duke of Athole has applied Larch to a variety of purpoſes, ſuch as mill-axles, flooring in houſes, window-frames and doors, poſts and rails, and boat-building: for all of which it appeared to anſwer ſo well, that it is the greateſt acquiſition of wood ever introduced into Great Britain, eſpecially as it attains a conſiderable ſize, on high grounds and bleak expoſures, where even Scotch Firs either die or become ſtinted. Fiſhing boats made of Larch under forty years growth, laſt nearly three times as long as thoſe built of Norway Fir.

The late violent winds blew down a Larch in the Duke's lawn of fifty years of age, eighty-ſix feet ſix inches in height, containing eighty-two feet of ſolid wood; for which four pounds ſterling was offered as it lay on the ground.

Dr. Anderſon has adduced a variety of ſatisfactory inſtances and experiments, from which the durability of this wood is eſtabliſhed beyond a doubt, even in the early periods of its growth. Nor is this its only good quality; for, when made into planks, there are inconteſtible proofs of its neither ſhrinking nor warping, and of its not being liable to be attacked by the worm, during the courſe of ſeveral ages.

It is not yet known whether Larch wood is capable of reſiſting the ſea-worm. Dr. Anderſon propoſes to aſcertain this, by ſinking a piece of ſound, well-ripened Larch wood, with another piece of ſound Oak wood in the river Medway at Rocheſter bridge, where it is well known that every other kind of wood is very ſoon perforated by the ſea-worm.

Larch wood is in a manner incombuſtible; that is, though it may be conſumed by fire, yet where the maſſes are large, even if a fire be placed on the bare wood, though it will be ſlowly corroded by it, yet

[s] Tranſact. ſoc. arts, vol. 6. for 1788.

[t] Report, in the preſent ſtate of the Hebrides, p. 238.

unleſs in particular circumſtances it cannot be made to flame, ſo as to communicate it to other bodies. This quality of Larch wood was known in the time of Julius Cæſar, who calls it *lignum igni impenetrabile*: and Mr. Harte obſerves, that there is perhaps no inſtance of the cottages in Carniola being ſet on fire, though they are ſo careleſs as to throw flaming firebrands on their roofs [a]. This ſeems to contradict what was ſaid above with relation to Switzerland; but I apprehend that more of the houſes in that country are built of Fir than of Larch. Duhamel however, in confirmation of Mr. Miller's opinion ſays, that the reſinous ſubſtance in Larch trees is looked upon to be very combuſtible, and therefore there is a public order in the diſtrict near Briançon, that houſes built with it ſhould never join, but ſtand at a certain diſtance [b]. Or rather Mr. Miller copied from Duhamel.

Matthiolus informs us, that unwilling as this wood may be to take fire, yet it is no-ways difficult to burn it in kilns, glaſs-houſes and furnaces belonging to iron-works, when once the inſide of theſe receptacles is rendered intenſely hot. Such is the practice in the iron-works of Stiria and the biſhopric of Trent, where this wood is of ſingular uſe, when there is heat ſufficiently fierce and ſtrong to penetrate it forcibly. On this point, ſays Mr. Harte, experience alone can lead us to adopt the true opinion.—Though I have carefully looked over this learned author's eſſays, yet I cannot find what Dr. Anderſon quotes from them, on the incombuſtibility of the Carniolian cottages.

To the other uſes of Larch wood, Mr. Harte adds, that becauſe it is not liable to be warped or to be attacked by worms, the Italians uſe it for back-boards, to place behind fine drawings, when they frame and glaſs them; as alſo for picture-frames, table-frames, &c. becauſe no other wood gives gilding ſuch force, brightneſs, and as it were a ſort of natural burniſhing; and this is the main ſecret why Italian gilding on wood is ſo greatly preferable to ours, which has often a tarniſhed ſpongy caſt, and looks like gilt gingerbread. The Italians alſo prefer it for making the wheels of poſt-chaiſes and other carriages, as being very durable and unapt to crack. No boards make better wainſcotting, or take paint better. The application of it to ſhingles for covering barns and other outhouſes would be invaluable in theſe kingdoms. The look of it would be far better than thatch; neither rains would rot it, nor winds ruffle it; and if it will not eaſily catch fire, it is a great additional recommendation. Whereas thatch is liable to all theſe accidents, and harbours ſparrows, inſects, cobwebs, duſt and all ſorts of foulneſs, to the great detriment of the grain: and though thatch be cheaper at firſt, it is dearer in the long run than tiling or ſlating. The ſhingles in the Griſons are half an inch thick and a foot ſquare: being of a tough nature and nailed down to the rafters, they are not liable to the inconvenience of being broken by forks, like tiles or ſlates [c].

On account of the valuable qualities of the wood therefore, the Larch deſerves to be cultivated in this country. Another recommendation of it is, its quickneſs of growth. Eight trees being meaſured in the ſpring and autumn of the year 1794, the average of their increaſe in height was nearly three feet nine inches and a quarter; and one of them increaſed three inches in circumference at two feet above the ground. In another plantation, the trees at eight years growth meaſured above twenty feet in height on an average; the trees were from ſix to nine inches high when planted. At twelve years old they meaſured, on an average from thirty-four to thirty-ſix feet in height. This plantation was on a good ſoil and in a favourable ſituation.

Nor is it only while the tree is young that it makes theſe vigorous ſhoots; for it appears by the meaſurement of the trees in Dunkeld, that this in a great meaſure continues even till a period of age beyond that which they have as yet attained: for 120 feet in fifty years gives an average of nearly two feet and a half in height for each year of their growth [d].

According to Mr. Harte, it grows ſlowly the firſt four years; but in twenty years, will exceed a Fir tree both in height and circumference that is double its age. Nor is there any reaſon, he adds, for doubting whether this tree will thrive in England: for ſome Larches about forty years ago came to full ſize and perfection near Chelmsford in Eſſex; and Mr. Miller mentions others of a conſiderable growth at Wimbledon in Surry, which produced a large quantity of cones every year [e]. This was ſaid at leaſt as far back as the year 1770: and Mr. Evelyn ſpeaks of a Larch at Chelmsford.

The Biſhop of Landaff informs us, that from many experiments made by himſelf, and collected from others, he finds the annual increaſe in circumference of the Larch, at ſix feet from the ground, to be one inch and a half on an average of ſeveral years; and that this inference has been drawn from the actual admeaſurement of Larches in different parts of England and Scotland, and of different ages from ten years old to fifty [f].

In making a plantation of Larch, the thinnings may be applied to a variety of uſeful purpoſes, whilſt they are yet of a ſmall ſize. In ſix, eight, or ten years, according to ſoil and circumſtances, the trees will have attained a ſize ſufficient to be made into hay-rakes. They grow ſo ſtraight, and the wood is ſo light, ſtrong and durable, as to be peculiarly calculated for this purpoſe; and from its ſhrinking leſs than any other wood, theſe rakes will remain longer firm than thoſe made from any other. About two feet cut off from the root end will form the rake-head; and five feet above that, with a very little taken off from the thickneſs of the under part, will form the handle. No wood is more proper for the teeth of the rake, than ſome of the red wood of an older tree, becauſe it is not only tough, but little liable either to ſplit or ſhrink. The bow may be made of Aſh, or of the laurel leaved ſweet-ſcented Willow, (*Salix pentandra*) which is ſtill better. Nothing is ſo fit for ſhafts to hoes; for it is nearly as ſtrong, and much more durable than Aſh. Handles for bruſhes, brooms, ſcythes, &c. would occaſion a vaſt conſumption of theſe ſmall ſpars.

Light, neat and ſtrong chairs, for ruſh bottoms, might be made of Larch wood at this age.

Nothing will anſwer better for hop-poles; for one ſet of theſe would outlaſt two or three ſets of Aſh. Hurdles, ſpars and gates, may be made of it, both lighter and more durable than of any other wood: and when the trees are of a ſize ſufficient, they may be ſplit down for cart ſhafts; and in mining countries they might be employed as poſts for ſupporting the roofs of the mines.

The ſmall tops cut off in making theſe various works, would furniſh a neat, elegant, cheap and durable kind of railing, to be put upon the top of low walls, eſpecially for preventing light ſheep from over-leaping them. One end might be let into the coping, whether of ſod clay or lime; and the other end received into a ſlip of ſawn Larch wood, with holes bored through it to receive their points. From the ſtraightneſs of the wood, this kind of rail would be very neat without much expenſe. In the ſame manner hen-coops, crates for packing glaſs, &c. might be made of thoſe materials.

But one of the moſt extenſive and beneficial uſes of this kind of ſmall wood, is for the purpoſe of incloſing. Theſe ſpars, when the root is thick enough, may be ſlit up the middle by a ſaw, and cut into lengths of five or ſix feet; or if ſmaller they may be employed whole. As they are always ſtraight, and nearly of an uniform thickneſs, if driven into the ground for a few inches in a row, at the diſtance of a few inches from each other, with the ſplit ſides all one way, they would make one of the neateſt and moſt complete fences that can be ſeen. The tops of theſe uprights may be received into a piece of ſawed plank, with holes bored in it for that purpoſe; and ſupported at due diſtances by ſloping pieces reaching from the ground to the top.

[a] 1. 3. p. 370, &c.
[b] Ibid. p. 150.
[c] Harte's Eſſays, 1. 148.
[d] Anderſon, vol. 3. p. 403.
[e] Harte, Eſſay 1. p. 151.
[f] Agricult. ſurvey of Weſtmoreland, prelim. obſervations.

These are a few of the uses to which the small spires from the first thinnings of the plantations may be applied. As they advance to a larger size, for windows, joists, flooring, panelling, couples, rafters, and every other purpose in building, they would be superior to any other kind of wood hitherto employed for these purposes; and for ship-building, especially planks, it would be superior to Oak itself.

There is not a branch or a twig of the Larch, that may not be put to some useful purpose. The larger branches may be employed in fencing, and the smaller brush for filling drains and for fuel. In drains, it is more durable than any other wood; and though the timber will not burn readily, yet the brush is found to make a fire almost equal to the billets of many other trees[f].

The acknowledged utility of the Larch induced the truly respectable Society for the encouragement of Arts, Manufactures and Commerce, at London, to offer very early both honorary and pecuniary rewards for the propagation of this tree; and so long since as the year 1758 three gold medals, and a premium of thirty pounds had been bestowed by the Society for planting Larch, and giving an account of the utility of the wood.

This attention of the Society, and a conviction of the superior qualities of the Larch impressed upon the minds of gentlemen in various parts of these kingdoms, has induced them to make some considerable plantations; and we are informed by Mr. Drummond, of Blair Drummond in Scotland, son to the late Lord Kaims, that by the great plantations of Larch, yearly made both in England and Scotland, the value of this excellent tree is now well understood; and if these plantations are continued for some years with the same spirit, there can be little doubt, that in half a century, the many thousand pounds annually sent to Norway for timber, will be entirely saved to this country[g].

Some of these plantations are the following.—John Sneyd, Esq. of Belmont in Staffordshire, between the years 1784 and 1786, planted 13000 Larches.

The present Bishop of Landaff has planted on high ground near Ambleside in Westmoreland above an hundred acres with mixed timber trees, among which are 48500 Larches. These were planted in 1787 and 1788.

Joseph Cowlishaw, of Hodsock Park, Esq. planted 27,400.

William Mellish, Esq. of Blyth, 47,500.

Richard Slater Milnes, Esq. of Foyston near Ferrybridge in Yorkshire, 200,000, transplanted from two to four years old, 2000 on an acre.

Mr. George Wright, of Auston, at Gilding-wells in the county of York, 11,573.

Thomas White, Esq. of West Retford, in Nottinghamshire, 13,000.

John Holliday, Esq. of Dillorn in Staffordshire, 7900.

All these were planted chiefly in the year 1789.

In Scotland: George Ross, Esq. of Cromarty, planted 1900.

But the Earl of Fife has been the great planter there. He planted in the county of Moray 181,813 Larches.

The Rev. Thomas Dunham Whitaker, at Holme in Claviger in the county of Lancaster and parish of Whalley, planted 64,135 Larches, between june 1790 and june 1791. They were between two and four years old.

Mr. Thomas Gaitskell, of Little Braithwait in Cumberland planted 43,300 on fifteen acres of high land, between the first of february and the first of april 1791.

Between june 1794 and june 1795, John Sneyd, Esq. above-mentioned planted 11,000 more Larches, at Belmont in Staffordshire[h].

These amount in the whole to 599,621, and doubtless there are many more plantations which have not come to my knowledge.

[f] Anderson's Essays, vol. 3. 407 to 422.
[g] Transact. Arts, vol. 7. for 1789.
[h] Transact. Soc. Arts.

The Duke of Athole, alone, says Dr. Anderson, plants 200,000 Larches every year; and one nurseryman at Edinburgh has raised this year (1796) above five millions.

A valuable produce of the Larch tree is the Venice Turpentine, which issues spontaneously from the bark, but is more commonly obtained by boring a hole with an auger about two feet above the ground, till it reaches near to the heart of the tree, into this hole is inserted a small pipe or cock, through which the turpentine flows into proper vessels placed for its reception. This process is continued from the end of may till the end of september. When the trees will yield no more for that season, the turpentine is pressed through a cloth to purify it. This is usually thinner than any of the other sorts, of a clear whitish or pale-yellowish colour, a hot pungent bitterish disagreeable taste, and a strong smell, without any thing of the aromatic flavour of the Chian or Cyprus Turpentine obtained from *Pistacia Terebinthus*. The common and Strasburgh Turpentine is from the *Pinus Picea*: and the Canada balsam, which may be considered as the purest of the Turpentines, is procured from the Silver and Balm of Gilead Firs.

The turpentine is not to be obtained in considerable quantities from very young trees, and in old ones it gradually dries up, till at last it affords none: it is only after the tree has attained the thickness of ten or twelve inches in diameter, that it is thought worth while to collect the turpentine; and from that time, during forty or fifty years, if it continues so long in vigorous growth, the tree will continue to yield annually from seven to eight pounds of turpentine.

An English acre will contain 682 trees, at the distance of eight feet from each other. Suppose the annual produce to be six pounds a tree on an average, and the price to be no more than two-pence the pound, (the common turpentine that the painters use is now, 1799, six-pence a quart) the value of the produce would be 3l. 4s. 2d. the acre; on supposition that the trees would yield as much turpentine in Britain, as on the borders of the Adriatic gulf. Whether they will do so, remains to be ascertained by experiment.

All the turpentines dissolve totally in rectified spirit: they become miscible with water into a milky liquor, by the mediation of the yolk or white of an egg, and more elegantly by mucilages. Distilled with water they yield a subtile penetrating essential oil, vulgarly called spirit; a yellow or blackish resin remaining in the still, which is the common rosin of the shops. The essential oil, on being distilled in a retort, becomes more subtile, and in this state is called ethereal oil of turpentine.

The turpentines stimulate the first passages, and prove laxative; and we are told by Dr. Cullen, that half an ounce or an ounce of Venice turpentine, triturated with the yolk of an egg, and diffused in water, may be employed in the form of an injection, as the most certain laxative in colics, and other cases of obstinate costiveness. When turpentine is carried into the blood-vessels, it stimulates the whole system; hence its use in chronic rheumatism and paralysis. It readily passes off by urine, which it imbues with a peculiar odour; also by perspiration, and probably by exhalation from the lungs: and to these respective effects are to be ascribed the virtues it may possess in gravelly complaints, scurvy and pulmonic disorders. In all these diseases however, and especially the last, this medicine, as well as some of the gums and balsams of the terebinthinate kind, by acting as stimulants, are often productive of mischief, as was first observed by Boerhaave, and since by Fothergill.

Turpentine has been much used in gleets and fluor albus; its efficacy in the former Dr. Cullen ascribes to its inducing some degree of inflammation in the urethra.

The essential oil, in which the virtues of turpentine reside, is not only preferred for external use, as a rubifacient, &c. but also internally as a diuretic; and by Pitcairne and Cheyne, as a remedy for the sciatica; but few stomachs are able to bear it in the doses they direct.

Turpentine,

Turpentine, ſo much uſed formerly as a digeſtive application, is in modern ſurgery almoſt wholly exploded [1].

Beſides this well known product the Larch yields alſo a Manna and a Gum. The Manna is found in the South of France, and is called there *Manne de Briançon:* it is white, concrete and ſweet, like fine new honey. It is rare, and met with only in little drops, ſo that it would be very difficult to collect a pound of it. The drops are more or leſs hard, and adhere to the leaves.

Monſ. Villars having made ſome enquiries relative to this ſubſtance, with Monſ. Guettard in the year 1773, found it at ſun-riſe almoſt fluid; and picked up drops of it on the turf exactly like thoſe which remained on the trees; but they have not given any analyſis or farther account of it, except that the ſeaſon of 1773 was leſs productive of Manna than uſual [2]. Laſt year (1798) I obſerved a Larch near my houſe covered with a hoary powder, but I neglected to examine whether it had any of the qualities of Manna. In the preſent year there is no appearance of it. The laſt ſeaſon was a hot dry one, and therefore favourable to the production of Manna; and the ſeaſon of 1799 has been a cold wet one.

Pallas informs us that they have this Manna in the Ruſſian empire, but that it is rarely found concrete, being commonly ſoon waſhed off by the rains which are frequent on the Uralian mountains.

He remarks alſo, that the turpentine reſides in the bark and the wood next to it, as is apparent when the trunk of a Larch is ſawed tranſverſely; for then it may be ſeen that the inner wood for more than half the diameter is dry. It cannot therefore be of any uſe to drive the auger almoſt to the centre of the tree, as Dr. Anderſon recommends.

Pallas alſo mentions a Gum that is yielded by the Larch in particular circumſtances. When the woods are on fire, which frequently happens in Ruſſia, the Larches are eaſily burnt on the ſide next the flame to the height of ſeveral feet, on account of the turpentine in which they abound. If the wood happens to be ſcorched to the pith, the inner part exudes a dry, reddiſh gum, rather leſs glutinous than Gum Arabic, having a ſlight taſte of reſin, but wholly ſoluble in water. It is uſed in medicine; and the native mountaineers chew it to faſten their teeth, as an antiſcorbutic, and as a ſubſtance highly nutritive; they alſo uſe it as a glue to faſten their bows, &c.

The Siberian hunters of Ermines, when their ferment or yeaſt which they carry with them to make the acid liquor which they call *Quaſs* with, is ſpoiled by the cold, ſcrape off the albumen or half-formed wood between the bark and the wood, which is very juicy and ſweet, digeſt it with water over the fire during an hour, mix it with their rye meal, bury the dough in the ſnow, and after twelve hours find the ferment ready prepared in the ſubſiding feces [3].

Old Larches produce a Fungus, which is deſcribed very much at large by Jacquin, in the firſt volume of his Miſcellanea, under the name of *Boletus Laricis.* It is alſo called *Agaricus purgans:* and is uſed in the northern countries as an emetic in intermitting fevers. The Tunguſes dye the hair of the rein deer with this Fungus and the roots of Galliſum, of a very deep red colour; whence perhaps it may be of ſome uſe in dyeing. The body of this Fungus is ſaponaceous, and is uſed by the women in ſome parts of Siberia, to waſh themſelves, and even their linen [4]. It was celebrated formerly, but is now deſervedly fallen into total diſuſe, as a medicine.

From the Pines properly ſo called, with the Cedar and Larches their allies, we proceed now to the Firs, which are diſtinguiſhed from them by having the leaves ſingle and diſtinct at the baſe; whereas the former have them two or more, or even in bundles from the ſame ſheath.

15. The Silver Fir is a noble upright tree. The branches are not very numerous, but the bark is ſmooth and delicate. The upper ſurface of the leaves is of a fine ſtrong green, and their under has two white lines running lengthwiſe on each ſide of the midrib, giving the leaves a ſilvery look, from which this Fir takes its name. The cones are large and grow erect; and when warm weather comes on they ſoon ſhed their ſeeds [5]. The ſcales are wide, deltoid, rounded above, below beaked, and appendicled with a membranaceous ſpatulate dorſal ligule, terminated by a recurved dagger-point. Nuts rather large, membranaceous, variouſly angular, dun-coloured. Wing covering the whole nut on one ſide, but half of it only on the other, membranaceous, widening upwards, obliquely truncated at top. Albumen gibbous, opaque. Embryo with five cotyledons, of a yelloviſh colour [6].

Native of Switzerland and Germany, (Dauphiné, Auſtria, Siberia, mount Caucaſus, &c.)

Cultivated in 1739, in Cheſſea garden [7]: but as thirty-ſix fine trees are mentioned by Plot and Ray, as growing near Newport in Shropſhire, it muſt have been here much ſooner [8].

Evelyn alſo mentions two Spaniſh or Silver Firs then growing in Harefield-park, Middleſex, belonging to Mr. Serjeant Newdigate, that were planted there in 1603, at two years growth from the ſeed, the biggeſt of which was eighty-one feet high, and thirteen feet in circumference below; the length, ſo far as it is timber, that is, to ſix inches ſquare, ſeventy-three foot, in the middle ſeventeen inches ſquare, and containing 146 feet of good timber.]

Mr. Miller ſays, it is ſuppoſed, that moſt, if not all all theſe trees in Germany were originally planted there; that Tournefort, in his travels, mentions the Firs of mount Olympus as the moſt beautiful trees in the Levant, and that he has received cones from thence upwards of a foot in length.

[Though Linnæus, and ſeveral other writers on the Materia Medica refer the common Turpentine to the Pinus ſylveſtris, and the Straſburgh Turpentine to this; yet Murray, following Haller and Duhamel aſcribe the common Turpentine to the Silver Fir, which pours it out ſo freely, that it is ſeldom neceſſary to make inciſions through the bark for that purpoſe [9].

It has been obſerved in Ireland, that no tree grows ſpeedily to ſo large a ſize as the Silver Fir. Some at forty years growth, in a wet clay on a rock, meaſuring twelve feet in circumference at the ground, and ſeven feet and a half at five feet high; one containing ſeventy-ſix feet of ſolid timber. It is found to be excellent for boat-building. A gentleman in Hampſhire floored his library with Silver Fir freſh cut down, and the boards did not contract in the leaſt [10].

The Earl of Fife alſo remarks, that no trees make a greater progreſs than this and the Larch.

16. This beautiful tree riſes with an upright ſtem. The leaves are dark green on their upper ſurface, and marked with whitiſh lines underneath. The cones are roundiſh and ſmall. The buds and leaves are remarkably fragrant. From wounds made in this tree a very fine Turpentine is obtained, which is ſometimes ſold for the true Balm of Gilead [11]. Though it grows to a large ſize in America, yet it has not done ſo with us [12].

The Balm of Gilead Fir has very much the habit of the Silver Fir, but the leaves are wider and blunter, diſpoſed on each ſide along the branches like the teeth of a comb, but in a double row, the upper one ſhorter than the under; underneath they are marked with a double glaucous line, and each has eight rows of white dots; they are often cloven at top [13].]

It was formerly growing (1696) in the Biſhop of London's garden at Fulham; and of late years a great number of the trees have been raiſed from ſeeds brought from Virginia, where it is a native. It makes very little progreſs after eight or ten years growth; the only place in which the trees have made any figure is at his Grace the Duke of Bedford's at Woburn Abbey in Bedfordſhire.

17. [The Hemlock Spruce Fir is a beautiful but delicate tree, and muſt have a good ſoil, with a warm

[1] Anderſon, 3. 422. and Woodville.
[2] Plantes de Dauphiné, 3. 808.
[3] Flora Roſſica, 1. p. 2, 3.
[4] Idem, Ibid. p. 3.
[5] Hunter's additions to Evelyn.
[6] Gærtner.
[7] Hort. kew.
[8] Woodville.
[9] Idem, 376.
[10] Young's Irish Tour, 1. 235.
[11] Hunter.
[12] Boutcher.
[13] Linn.

ſituation.

ſituation. It will be improved by tying its leading ſhoot to a ſtake annually as it advances [a].

The cone is of the ſize and ſhape of a ſmall hen's egg, the whole of an aſh-coloured bay. Scales coriaceous, thick, triangular, the outer ſide rounded and ſomewhat crenulate. Nuts a little ſmaller than in the Black Spruce, with a winged membrane on the outer ſide only. Wings ovate-oblong, nearly equilateral, or not ſo gibbous on the outer ſide, as in the Black Spruce. Seed ovate, acuminate downwards. Embryo like that of the Black Spruce in ſituation and ſhape, but with four cotyledons [b].]

It is a native of many parts of North America. It does not thrive well in any part of England, nor in many parts of America; though in ſome particular ſpots I have been informed there are very large high trees now growing.

[It was introduced in 1736, by Peter Collinſon, Eſq.[c]

18. The Black Newfoundland Spruce has ſhorter leaves, whiter on their under ſide than the White; the cones alſo are ſmaller and more compact. There is alſo a Red Spruce; but there ſeems to be no difference between this and the Black, either in the cones which have been brought from Newfoundland, or the young plants which have been raiſed in our gardens.

The appellations of White and Black are given from the colour of the bark, for there is little difference in the colour of the wood, and the leaves of the Black are whiter on their under ſide than thoſe of the White. Both are natives of North America; the White upon the mountains, the Black upon the low grounds, generally in bogs or ſwamps. The firſt is by much the largeſt tree. Few of theſe trees are now remaining near the European ſettlements, but farther up in the country they are in great plenty.

The cones both of the Black and White Spruce were ſent from Virginia to England by Mr. Baniſter, towards the end of the laſt century; and ſeveral of the plants were raiſed in the gardens of Compton Biſhop of London at Fulham, Mr. Reynardſon at Hillendon near Uxbridge, and Mr. Darby at Hoxton; but theſe were ſoon deſtroyed, after the death of their poſſeſſors. About the ſame time cones were brought from Newfoundland to Devonſhire, where there are now (1755) ſome large trees growing, which have produced cones for thirty years paſt; but except theſe, I believe there are few, if any of theſe trees now in England, which are of above twenty years growth. The fineſt in theſe parts are in the curious gardens of his Grace the Duke of Argyle, at Whitton in Middleſex. From both the ſorts exudes a fine clear reſin, of a ſtrong ſcent, much uſed by the native Indians to cure wounds, and in internal diſorders. The branches of both ſorts are alſo uſed indifferently in making Spruce-Beer.

This ſort is eaſily known by its narrow leaves, placed on every ſide of the branches, and its long pendulous cones, which do not fall to pieces on the tree, but drop off entire the following ſummer: the ſcales open and emit the ſeeds on the firſt warmth of the ſpring.

A variety of this tree is cultivated in the gardens near London, called the long-coned Corniſh Fir. The leaves are longer, broader, of a lighter colour, and fuller on the branches; the cones alſo are longer. From the appearance of the old trees they may be taken for diſtinct ſpecies; but ſince both are produced from ſeeds of the ſame cone, they are certainly only ſeminal varieties [b].

According to Gærtner, the cone is ovate, ſmall, being ſcarcely the ſize of the outer joint of the thumb: ſcales imbricate, coriaceous, rounded, dun-coloured, large in proportion to the ſize of the cones. Nut ſmall, bony, one-celled, valveleſs, entirely covered with an epidermis, which widens into a membranaceous wing, longer than the nut, ſtraight on one ſide, gibbous on the other. Receptacle none, except the inner ſurface of the ſcales, to the baſe of which the two nuts are faſtened. Seed ſingle, of the ſame ſhape with the cavity of the nut, pale yellow: cover ſingle, very thin, membranaceous: albumen thick, fleſhy, white: embryo nearly the length of the albumen, roundiſh, erect, milky: cotyledons three, very ſhort, angular, fleſhy: radicle long, roundiſh, inferior.

19. The Norway Spruce Fir is the loftieſt of our European trees, attaining a height from 125 to 150 feet, with a very ſtraight trunk, and throwing out its ſpreading branches ſo as to form an elegant pyramid. Leaves cluſtered, without order, from an oblong cortical ſcale, four-cornered, drawn out into a ſharp point, thickiſh, commonly curved a little; as Linnæus obſerves, compreſſed, ſlightly keeled on both ſides, ſhining on the upper ſurface. Male cones or catkins ovate, ſcattered in the axils of the leaves, purple. The young female cones are alſo purple; when ripe pendulous [c]. They have eight rows of ſcales in a ſpiral, each row having from twenty to twenty-three ſcales, in each of which are two ſeeds, and conſequently about 365 in a cone [d].

The ſcales are obovate-rhomboidal, terminating in a dagger point, not appendiculed. Nuts ſmalliſh, ovate, acuminate downwards, flatted a little, cruſtaceous, blackiſh-brown: wing covering the nut only on the outer ſide, membranaceous, elliptic, thin. Albumen ſubpellucid, of a watery colour. Embryo milky, having nine cotyledons [e].

The vaſt woods of Denmark, Norway, Sweden, &c. are principally compoſed of Pinus ſylveſtris, which we call Scotch Pine, becauſe it abounds in Scotland, and is the only tree of this genus which is indigenous there, and this ſpecies of Spruce Fir, which we commonly call Norway Spruce, becauſe we import the timber of this tree chiefly from Norway. There are two principal varieties of it, the White and the Red, but both afford the white deals. Gærtner ſays that they are called ſo from their paler or deeper colour of the cones, and that they agree in the want of the ligules on the back of the ſcales, by which they are diſtinguiſhed with greater evidence and certainty from Pinus Pinea than by the leaves. Linneus has five varieties in his Flora Suecica, but they are inſignificant.

In the Kew catalogue it is ſaid that the Norway Spruce was cultivated in Cheliea garden in 1739: but we probably had it much earlier; for Mr. Evelyn ſpeaks of Sir Norton Knatchbull's delicious plantation of Pines and Firs, which he beheld with great ſatisfaction, and where a Fir-tree of the Knight's own raiſing ſhot no leſs than ſixty feet in height, in little more than twenty years; of Sir Peter Wentworth's, of Lillingſton-level; Cornbury in Oxfordſhire, and other places; but eſpecially thoſe trees growing now in Hareſield-park in the county of Middleſex [f].

Theſe might poſſibly be North American Firs; but it is ſcarcely credible that the Norway Spruce ſhould not have been introduced here before 1739; though I have not at preſent found any direct evidence for it.

As to the immenſe foreſts of Fir or Pine diſcovered underground in various parts of theſe kingdoms, they were probably the Pinus ſylveſtris or Scotch Pine: for the ſubterraneous cones which I have ſeen evidently belonged to this ſpecies: and hence, after all, Julius Cæſar may be right in affirming that neither the *Fagus* nor the *Abies* were in his time indigenous of Britain, if the Fagus be a ſpecies of Oak, and the Abies the Norway Spruce Fir, which does not now, and probably never did grow wild in this iſland: whereas great quantities of Scotch Pine were cut down by the Romans, to diſencumber the country, and deſtroy the retreats of the ſavage inhabitants [g].

The timber of the Spruce Fir is well known to be inferior to that of the Pinus ſylveſtris; the former affording the white, the latter the red deal. This however, ſays Haller, is what is chiefly uſed in Switzerland for maſts, beams, joiſts, ſpars, and an infinity of utenſils and inſtruments; charcoals, though not the hardeſt, for fuſing metals; reſin collected to the quantity of forty pounds from a tree in one year, pitch, tar, &c. [h]

[a] Boutcher. [b] Mill. fig. p. 1, 2. [c] Gærtner. [d] Hort. kew. [e] Haller. [f] Linn. [g] Gærtner. [h] Silva, p. 141. [i] Idem, 145. [k] Haller. helv. 412.

Fir was anciently uſed, ſays Evelyn, for building ſhips; it is ſtill uſed for the maſts, and ſome other parts, but ſeldom for the entire veſſel, except in ſmall craft. Its great conſumption now among us is for the interior work of our houſes; beams, joiſts, rafters, ſpars, doors, floors, wainſcot; all being made of this wood, almoſt to the excluſion of any other. Scaffold-poles, balks, laths, boxes, and bellies for muſical inſtruments are made of Fir. It is exceeding ſmooth to poliſh on, and therefore does well under gilding work, and takes black equal with the Pear tree. It ſucceeds well in carving, the grain being eaſy to work, and taking the tool every way. No wood takes glue ſo well, or is ſo eaſily wrought. Caſes and barrels for dry goods, ſhingles, hoops, &c. are made of it. It yields pitch, tar, turpentine and reſin; and from the buds and tops ſpruce beer is made, accounted ſo excellent againſt the ſcurvy.

No tree will yield greater profit than the Spruce Fir in cold land, no tree is more beautiful ſtanding ſingle on turf in large plantations, or more uſeful for ſhelter in cold ſoils and ſituations.

An inciſion being made into the bark, a clear tenacious fluid iſſues, which concretes into a reſinous ſubſtance, known by the name of *Reſina Abietis*. This, after being boiled in water, and ſtrained through a linen cloth, is called in the Pharmacopœias *Burgundy Pitch*. But if the boiling of the native reſin is continued till the water is wholly evaporated, and wine vinegar is at this time added, a ſubſtance named *Colophonium* is formed.

Burgundy Pitch, which is chiefly imported from Saxony, is of a ſolid conſiſtence, yet ſomewhat ſoft, of a reddiſh brown colour, and not diſagreeable in ſmell. It is entirely confined to external uſe, and was formerly an ingredient in ſeveral ointments and plaſters. In inveterate coughs, affections of the lungs, and other internal complaints, plaſters of this reſin, by acting as a topical ſtimulus, are frequently found of conſiderable ſervice[1].

Freſh cones boiled in whey; and beer brewed with pine-tops are accounted good in inveterate ſcurvies.

Even the air impregnated with the exhalations of Fir-trees is reckoned very wholeſome, particularly for phthyſicky perſons. Reſin melted with bees-wax, and ſtirred about, or ſmall pellets of pitch thrown into the fire, or on heated plates of iron, are eſteemed uſeful in the aſthma.

20. For the diſtinction between this and the Black Spruce ſee n. 18.

21. This was found by Tournefort in the Levant.

Gærtner remarks a ſingularity in this genus, that the number of cotyledons differs in the different ſpecies. The *ſylveſtris* has five, *Cembra* twelve, *Cedrus* ſix, *Larix* two, *Picea* five, *nigra* three, *canadenſis* four, *Abies* nine. Hence he recommends the cotyledons of the ſeeds, as well as the cones, to be called in for ſpecific differences, when the leaves are not ſufficient[2].

According to Linnæus, *P. Strobus* or Weymouth Pine has from ſix to ten cotyledons; and is the connecting link between *Pinus* and *Abies*, the Pines and the Firs.

Juſſieu, following Tournefort, makes two genera of *Pinus* and *Abies*: the former having from two to five leaves coming out from each ſhort cylindrical ſheath; the aments or male catkins not ſolitary, but compacted into a terminating raceme, according to the obſervations of Duhamel and Lamarck; the ſtrobiles or cones terminating: the latter, with which he joins the *Larix*, though he doubts whether it ought not rather to be ſeparated, having the leaves alternate, linear, acuminate, ſingle or diſtinct, except in the *Larix*, which has them in bundles, and not evergreen, but deciduous; both aments and cones are ſolitary and terminating, except in the *Larix*, which has them ſcattered over the ſtem or axillary, as Duhamel remarks. The genuine *Abietes* are balſamiferous, with a flatted foliation, and ſtraight cones: the *Piceæ* are reſiniferous, with a circular foliation, and inverted cones[3].

[1] Woodville. [2] Vol. 2. p. 61. [3] Genera, 415.

These diſtinctions deſerve to be attended to, but they are not ſufficient to induce us to lacerate a natural genus.]

PROPAGATION AND CULTURE.

All the ſorts of Pines are propagated by ſeeds, which are produced in hard woody cones; the way to get out their ſeeds is to lay the cones before a gentle fire, or in the ſun, which will cauſe the cells to open, and then the ſeeds may be eaſily taken out. If the cones are kept entire, the ſeeds will remain good for ſome years; ſo that the ſureſt way to preſerve them, is to let them remain in the cones until the time forſowing the ſeeds; if the cones are kept in a warm place in ſummer, they will open, and emit the ſeeds; but if they are not expoſed to much heat, they will remain entire ſome years, eſpecially thoſe which are cloſe and compact; and the ſeeds which have been taken out of cones of ſeven years old, have grown very well, ſo that theſe may be tranſported to any diſtance, provided the cones are well ripened and properly put up.

The beſt time for ſowing the ſeeds of Pines is about the end of march, and when the ſeeds are ſown, the place ſhould be covered with nets to keep off birds, otherwiſe, when the plants begin to appear with the huſk of the ſeed on their tops, the birds will pick off the heads of the plants and deſtroy them.

Where the quantity of ſeeds to be ſown is not great, it will be a good way to ſow them either in boxes or pots, filled with light loamy earth, which may be removed from one ſituation to another, according to the ſeaſon of the year; but if there is a large quantity of the ſeeds, ſo as to require a good ſpace to receive them, they ſhould be ſown on an eaſt or north-eaſt border, where they may be ſcreened from the ſun, whoſe heat is very injurious to theſe plants at their firſt appearance above ground. Thoſe ſeeds which are ſown in pots or boxes, ſhould alſo be placed in a ſhady ſituation, but not under trees; and if they are ſcreened from the ſun with mats at the time when the plants firſt come up, it will be a good method to preſerve them.

Moſt of the ſorts will come up in about ſix or ſeven weeks after they are ſown, but the ſeeds of the Stone or cultivated Pine, and two or three of the others, whoſe ſhells are very hard, frequently lie in the ground a whole year; ſo that when the plants do not come up the firſt year, the ground ſhould not be diſturbed, but kept clean from weeds, and the following ſpring the plants will riſe. This frequently happens in dry ſeaſons, and when they are ſown in places a little too much expoſed to the ſun. Therefore the ſureſt method is, to ſoak the ſeeds in water twenty-four hours before they are ſown.

When the plants appear, they muſt be conſtantly kept clean from weeds; and in very dry ſeaſons, if they are now and then gently refreſhed with water, it will forward their growth; but this muſt be done with great care and caution, for if they are haſtily watered, it will waſh the tender plants out of the ground, or lay them down flat, which often rots their ſtalks; and when this is too often repeated, it will have the ſame effect; ſo that unleſs it is judiciouſly performed, it will be the beſt way to give them none, but only ſcreen them from the ſun.

If the plants come up too cloſe, it will be a good method to thin them gently about the beginning of July. The plants which are drawn up may then be planted on other beds which ſhould be prepared ready to receive them, for they ſhould be immediately planted as they are drawn up, becauſe their tender roots are ſoon dried and ſpoiled at this ſeaſon of the year. This work ſhould be done (if poſſible) in cloudy or rainy weather, and then the plants will draw out with better roots, and will ſoon put out new fibres again; but if the weather ſhould prove clear and dry, the plants ſhould be ſhaded every day from the ſun with mats, and now and then gently refreſhed with water. In drawing up the plants, there ſhould be great care taken not to diſturb the roots of the plants left remaining in the ſeed-beds, &c. ſo that if the ground be hard, the beds ſhould be well watered ſome time before the plants are thinned, to ſoften and looſen the earth; and

and if after the plants are drawn out, the beds are again gently watered to ſettle the earth to the roots of the remaining plants, it will be of great ſervice to them, but it muſt be done with great care, ſo as not to waſh out their roots, or lay down the plants. The diſtance which ſhould be allowed theſe plants in the new beds, is four or five inches row from row, and three inches in the rows.

In theſe beds the plants may remain till the ſpring twelve months after, by which time they will be fit to tranſplant where they are to remain for good, for the younger the plants are when planted out the better they will ſucceed; for although ſome ſorts will bear tranſplanting at a much greater age, yet young plants planted at the ſame time, will in a few years overtake the large ones, and ſoon outſtrip them in their growth; and there is an advantage in planting young, by ſaving the expenſe of ſtaking, and much watering, which large plants require. I have often ſeen plantations of ſeveral ſorts of Pines, which were made of plants ſix or ſeven feet high, and at the ſame time others of one foot high planted between them, which in ten years were better trees than the old ones, and much more vigorous in their growth; but if the ground where they are deſigned to remain cannot be prepared by the time before-mentioned, the plants ſhould be planted out of the beds into a nurſery, where they may remain two years, but not longer; for it will be very hazardous to remove theſe trees at a greater age.

The beſt ſeaſon to tranſplant all the ſorts of Pines is about the latter end of march or the beginning of april, juſt before they begin to ſhoot; for although the Scotch Pine, and ſome of the moſt hardy ſorts, may be tranſplanted in winter, eſpecially when they are growing in ſtrong land, where they may be taken with balls of earth to their roots; yet this is what I would not adviſe for common practice, having frequently ſeen it attended with bad conſequences, but thoſe which are removed in the ſpring rarely fail.

Where theſe trees are planted in expoſed ſituations, they ſhould be put pretty cloſe together, that they may ſhelter each other; and when they have grown a few years, part of the plants may be cut down to give room for the others to grow; but this muſt be gradually performed, leſt by too much opening the plantation at once, the air ſhould be let in among the remaining trees with too great violence, which will ſtop their growth.

Although theſe Evergreen-trees are by many perſons deſpiſed on account of their dark green in ſummer, yet a proper mixture of theſe in large clumps make a fine appearance about a ſeat in winter, and in ſummer, by their contraſt with other trees, have no bad effect in diverſifying the ſcene.

Wherever large plantations are deſigned to be made, the beſt method will be to raiſe the plants either upon a part of the ſame land, or as near to the place as poſſible, and alſo upon the ſame ſort of ſoil: a ſmall piece of ground will be ſufficient to raiſe plants enough for many acres, but, as the plants require ſome care in their firſt raiſing, if the neighbouring cottagers, who have many of them ſmall incloſures adjoining to their cottages, or where this is wanting, a ſmall incloſure ſhould be made them for the purpoſe of raiſing the plants, and they are furniſhed with the ſeeds and directions for ſowing them, and managing the young plants till they are fit for tranſplanting, the women and children may be uſefully employed in this work; and the proprietors of land agreeing with them to take their plants when raiſed at a certain price, it would be a great benefit to the poor; and hereby they would be engaged to have a regard for the plantations when made, and prevent their being deſtroyed.

The Scotch Pine, as was before obſerved, being the hardieſt of all the kinds, and the wood of it the moſt uſeful, is the ſort which beſt deſerves care. This will thrive upon the moſt barren lands, where ſcarce any thing elſe except Heath and Furze will grow; and there are many thouſand acres of ſuch land lying convenient for water carriage, which at preſent are of little benefit to any body, that might, by plantations of theſe trees, become good eſtates to their proprietors, and alſo a national benefit; and as the legiſlature has taken this into conſideration, and already paſſed ſome laws for encouraging theſe plantations, as alſo for their preſervation and ſecurity, it may be hoped that this will be undertaken by gentlemen who are poſſeſſed of ſuch lands in all the different parts of the kingdom with proper ſpirit; for although they may not expect to receive much profit from theſe plantations in their own time, yet their ſucceſſors may with large intereſt; and the pleaſure which thoſe growing trees will afford them, by beautifying the preſent dreary parts of the country, will in ſome meaſure recompenſe them for their trouble and expenſe; and by creating employment for the poor, leſſen thoſe rates which are now ſo high in many parts of England as ſcarce to be borne.

The expenſe of making theſe plantations is what moſt people are afraid of; but the greateſt expenſe is that of fencing them from the cattle, &c. for the other is trifling, as there will be no neceſſity for preparing the ground to receive the plants; and the charge of planting an acre of land with theſe plants will not be more than twenty or thirty ſhillings where labour is dear, excluſive of the plants, which may be valued at forty ſhillings more. I have planted many acres of land with theſe trees, which were covered with Heath and Furze, and have only dug holes between to put in the plants, and afterwards laid the Heath or Furze which was cut, upon the ſurface of the ground about their roots, to prevent the ground from drying, and few of the plants have failed. Theſe plants were moſt of them four years old from ſeed, nor was there any care taken to clean the ground afterwards, but the whole left to ſhift, and in five or ſix years the Pines have grown ſo well as to overpower the Heath and Furze, and deſtroy it.

The diſtance which I have generally planted theſe plants in all large open ſituations was about four feet, but always irregular, avoiding planting in rows as much as poſſible; and in the planting, the great care is not to take up the plants faſter than they can be planted, ſo that ſome men have been employed in digging up the plants while others were planting. Thoſe who take up the plants muſt be looked after, to ſee they do not tear off their roots or wound their bark; and as faſt as they are taken up, their roots ſhould be covered to prevent their drying, and put into their new quarters as ſoon as poſſible. In planting them, care ſhould be had to make the holes large enough for the roots, as alſo to looſen and break the clods of earth, and put the fineſt immediately about their roots, then to ſettle the earth gently with the foot to the roots of the plant. If theſe things are duly obſerved, and a proper ſeaſon choſen for performing it, there will be very little hazard of their ſucceeding; but I have ſeen ſome plantations made with plants which were brought from a great diſtance, and had been ſo cloſely packed up as to cauſe a heat, whereby moſt of the plants within had their leaves changed yellow, and few of them have grown, which has diſcouraged others from planting, not knowing the true cauſe of their failure.

After the plantations are made, the only care they require for five or ſix years will be to ſecure the plants from cattle, hares, and rabbits; for if theſe are admitted to them, they will make great deſtruction in a ſhort time: for if the branches are gnawed by hares or rabbits, it will greatly retard the growth of the plants, if not deſtroy them.

In about five or ſix years after planting, the branches of the young trees will have met, and begin to interfere with each other; therefore they will require a little pruning, but this muſt be done with great caution. The lower tier of branches only ſhould be cut off; this ſhould be performed in ſeptember, at which time there will be no danger of the wounds bleeding too much, and the turpentine will harden over the wounds as the ſeaſon grows cold, and prevent the wet from penetrating the wounds. Theſe branches ſhould be cut off cloſe to the ſtem of the plants, and care ſhould be taken in doing this not to break any of the remaining branches of the young trees. This work ſhould be repeated every other year, at each time taking off only the lower tier of branches; for if the plants are much

much trimmed, it will greatly retard their growth, as it does in general that of all trees; but as theſe trees never put out any new ſhoots where they are pruned, they ſuffer more from amputation than thoſe which do.

In thoſe parts of France where they have foreſts of theſe trees, the proprietors always give the faggots to thoſe, who prune their young trees firſt, for their labour, ſo it coſts them no money. At the ſecond pruning the propriet r has one-third of the faggots, and the dreſſers have the other two for their work, and afterwards the faggots are equally divided between the workmen and proprietors, but there muſt be great care taken that they do not cut off more than ſhould be.

In about twelve or fourteen years theſe will require no more pruning, for their upper branches will kill thoſe below where they have not air; but ſoon after this, if the plants have made good progreſs, it may be neceſſary to thin them; but this ſhould be gradually performed, beginning in the middle of the plantation firſt, leaving the outſide cloſe to ſcreen thoſe within from the cold, by degrees coming to them at laſt, whereby thoſe which were firſt thinned will have had time to get ſtrength, and will not be in danger of ſuffering from the admiſſion of cold air. When theſe plantations are thinned, the trees ſhould not be dug up, but their ſtems cut off cloſe to the ground, for their roots never ſhoot again, but decay in the earth, ſo there can no harm ariſe by leaving them, and hereby the roots of the remaining plants are not injured. The trees which are now cut will be fit for many purpoſes; thoſe which are ſtraight will make good putlocks for the bricklayers, and ſerve for ſcaffolding poles, ſo that there may be as much made by the ſale of theſe as will defray the whole expenſe of the planting, and probably intereſt for the money into the bargain.

As the upright growth of theſe trees renders their wood more valuable, they ſhould be left pretty cloſe together, to draw each other up. If they are left eight feet aſunder each way, it will be ſufficient room for their growth; and if at the firſt thinning a fourth part of the trees are taken away, the others may ſtand twelve or fourteen years longer, by which time they will be of a ſize for making ladders and ſcaffold-poles, &c. ſo that from this ſale as much may be made, as not only to pay the remaining part of the expenſe of planting, but rent for the land with intereſt; and the ſtanding trees will be left for the fortunes of younger children.

1. The Scotch Pine grows well upon almoſt every ſoil. I have planted numbers of the trees upon Peat-pits, where they have made great progreſs. I have alſo planted them in clay, where they have ſucceeded far beyond expectation; and upon ſand, gravel or chalk they likewiſe thrive as well. If they do not grow ſo faſt on ſand or gravel as on moiſt ground, the wood is much preferable; for thoſe trees which have been cut down upon moiſt ſoils, where they have made the greateſt progreſs, when they have been ſawn out into boards, have not proved ſo valuable, the wood being white and of a looſe texture; whereas thoſe which have grown upon dry gravelly ground have been nearly equal to the beſt foreign deals: and I doubt not but thoſe plantations, which of late years have been made, will not only turn out greatly to the advantage of their poſſeſſors, but alſo become a national benefit; this therefore is the ſort which I would recommend to be planted on barren lands.

11. The Weymouth Pine alſo is worth propagating, not only for its beauty, but for the ſake of its timber, particularly for maſts.

It grows beſt upon a moiſt light ſoil, not too wet: it will alſo thrive on a loamy ſoil, if it does not approach too near to clay. The ſeeds ſhould be ſown with a little more care than the Scotch Pine, becauſe their ſtems being not ſo ſtrong, they are more apt to go off while young: if therefore they are ſown in the full ground, the bed ſhould be ſcreened with mats from the ſun every day, but expoſed to the dews every night.

If all the plants are removed into beds in july, it will be a ſecure way to preſerve them; but as they grow faſter than the Scotch Pine, they ſhould be planted farther aſunder; their rows ſix inches diſtant, and the plants four inches apart. This will allow them room to grow till the ſpring twelvemonth following; when they may be either tranſplanted where they are to remain, or into a nurſery, where they may ſtand two years to get ſtrength; but the ſooner they are planted where they are to ſtand, the leſs danger there will be of their ſucceeding, and the larger they will grow; for although they will bear tranſplanting at a greater age, yet when they are planted young, they will make much greater progreſs, and grow to a greater ſize.

When the Weymouth Pine has been planted in a ſoft hazel loam, I have frequently meaſured ſhoots of one year, two feet and a half in length; and they have for ſome years continued growing as much. They ſhould have a ſheltered ſituation, for I have obſerved, where the trees have been much expoſed to the ſouth-weſt winds, they have not made near ſo great a progreſs as thoſe which grew in ſhelter; and in large plantations, thoſe on the outſide have not kept pace with thoſe in the middle, nor have their leaves retained their verdure ſo well.

8. The Swamp Pine does well in very few places here; in ſevere froſts the leading ſhoots are often killed; and in dry ground it will not thrive: unleſs the ſoil be favourable, it is to little purpoſe to plant this ſort of Pine.

[6. The ſeeds of the Stone Pine being ſo large, they may be ſet in drills ſix inches aſunder, four inches from each other, and an inch deep. The following ſpring they may be planted out in rows, two feet aſunder, and one foot in the rows; where they muſt continue two years, and then removed to the place they are to remain in [n].

Bradley adviſes Heath land, which is generally ſandy, and in which commonly we find abundance of moraſs ground, to be planted with Fir trees. We have ſome inſtances of this ſort of land cultivated in this manner. At the Earl of Alreſford's, near Guildford in Surry, we have an example of the good thriving of theſe trees upon a hill of common white ſand, in which one could hardly expect the leaſt vegetable quality; and the trees now growing there have not been planted quite thirty years, although they are about forty feet high; but it is to be obſerved that they are hardly ſix feet aſunder, which may be the occaſion of their extraordinary height, and the clearneſs of their ſtems without knots. The experience I have had of theſe trees, eſpecially of the Scotch Pine, teaches me, that they thrive better raiſed from ſeed upon the ſpot where they are deſigned to remain, than if they are tranſplanted.

To make a Seminary of theſe trees gather the cones in ſeptember, even while their rind partakes yet of a green colour; for thoſe which are already cracked and opened produce little or no good ſeed: lay them by in a dry place during the winter, and about february either expoſe them to the ſun till they open, or put them in ſome veſſel into an oven, after the great heat is gone off; by either of theſe ways the ſeed is come at without difficulty, as I have tried with good ſucceſs, though ſome have been apt to ſuſpect that the ſeeds of cones opened by the heat of an oven would be too much dried to vegetate. When the ſeeds are well cleaned, ſow them thin in beds, covering them about half an inch deep with fine earth, and in a month's time they come up. Take care at their firſt appearance to preſerve them from ſnails, which are their greateſt enemies. The ſame ſummer they ſhoot hardly more than an inch, and as their roots lie very near the ſurface, it is adviſable to ſift ſand over the beds near half an inch thick about ſeptember, to keep them ſteady, and prevent the froſts from turning them out of the ground. The ſecond year they will be about four inches high, and if they were to remain a third year they would be near a foot taller; but it is beſt to remove them at two years old, and even then it ſhould be done with care, removing them to the plantation in a barrow of earth, and not taking them out till the very inſtant, if poſſible, that they are to be planted,

[n] Hunter in Evelyn's Silva.

for a little air dries and ſhrinks the roots. Set them not more than ſix feet apart, that they may grow ſtraight and tall, unleſs you would run the hazard of tranſplanting ſome of them a ſecond time, and then the diſtance between them need not be above three feet; they might remain thus ſide or ſix years, and then it would be high time to draw every other tree to make room for the reſt. The method practiſed by James Johnſton, of Twickenham, Eſq. for removing large Firs above twenty feet high, was about mid-ſummer to plant them in a preparation of earth and water, of the conſiſtency of a thin mud, filling up the hole gradually with fine earth, till the roots of the trees were firmly ſettled in it: by which means they made ſhoots above a foot long the following year, before the others which remained in the nurſery began to ſhoot[a].

To raiſe plantations of Scotch Fir, let the cones be gathered in February or march, from thriving young trees: expoſe them to the heat of the ſun, thinly ſpread on coarſe canvas, taking them under cover in the night, and only expoſing them when the ſun ſhines. When any quantity of the ſeed is ſhed, ſeparate it from the cones; otherwiſe the firſt-dropped ſeeds would become too dry. The ſowing muſt be finiſhed the end of april or beginning of may; ſo that if the cones will not yield their contents to the ſun, they muſt be gently kiln-dried. A light loamy ſoil, trenched a foot and a half deep, and laid out in beds five feet broad, anſwers beſt for ſowing. Let the ſeeds be ſown very thick, and covered with a thick ſifting of mould from the alleys. The plants will thus riſe like a bruſh, and a good crop will have above a thouſand in every foot of the beds, that is in five ſquare feet. No manure ſhould be given them, to avoid introducing of weeds, the drawing of which brings up many of the tender plants, and by looſening the ground lets in both froſt and drought. When they have the growth of two ſeaſons, plant them out irregularly from the ſeed-bed, three feet aſunder, upon the grounds where they are to riſe to perfection; planting the drieſt ground in autumn, eighteen months after ſowing, and continuing till froſt ſets in. Begin again in february, or rather as the weather admits, and continue the work, if neceſſary, to the end of april. It is beſt to plant thus from the ſeed-bed, for when they are removed into the nurſery, the roots muſt be pruned conſiderably before they can be planted where they are to continue, which adds greatly to the expenſe; and nurſing cauſes a luxuriant growth in this hardy mountainous tree, which ſpoils its nature, and robs it of longevity. The trees which grow ſpontaneouſly from ſeed, come up very cloſe, and grow very ſlow; for theſe reaſons they are taller, leſs knotty, and of a cloſer harder grain than planted trees, which are uſually ſet in a richer ſoil, and allowed more room. James Farquharſon, Eſq. who has planted ſeveral millions of Scotch Firs, has obſerved in a ſelf-ſown tree of two feet and a half diameter, which is near the ſize of a planted Fir fifty years old, 214 circles, which makes this natural Fir above four times the age of the planted one[a].

Mr. Boutcher directs the cones to be gathered or picked up in march or april, and kept in a dry place till the hotteſt weather, when they ſhould be treated as he has directed for the Larch; and kept in boxes or bags, in a dry room, till the ſeaſon of ſowing: which ſhould be the middle of march or as ſoon after as the land is dry, and the weather favourable, in ſhady borders of generous looſe mould at the rate of a pound of good ſeed to a bed ſixty feet long by three feet and a half broad; covering them a quarter of an inch thick. As the plants begin to appear water them in the morning every four or five days for five or ſix weeks, if the weather be dry without froſt.

From the beginning to the middle of april following tranſplant them from the ſeed-bed in rows fifteen inches aſunder, and ſix or ſeven inches in the row, giving them three or four plentiful waterings if the weather require it. Let them remain two years, and they will be fit to encounter all difficulties, and to ſucceed in the worſt ſoils and coldeſt ſituations.

For the purpoſe of immediate ſhelter they may be removed once more into rows three feet aſunder and eighteen inches in the row, to ſtand two years longer.

In all the removals, have by you a tub of water and earth, mixed to ſuch a conſiſtence as that a conſiderable quantity will adhere to the roots of the plants. As ſoon as they are taken up, let them be plunged in the tub as deep as they ſtood in the ground; and if they continue ſeveral hours in this ſituation, it will be ſo much the better[b].

No Fir tree ſhould ever be pruned, unleſs it be cutting off the branches near the ground: when this tree is in old age, the branches gradually decay from the root to the top. The time for cutting it down is when all the limbs are dead, but the top branches quite healthy. The timber is better when the branches drop from age; and there is no knot or blemiſh in the wood. If a Fir tree in vigour be much pruned, it is reduced to a ſtate of old age.

The improvements that have been made in the northern parts of Scotland by means of large plantations of Scotch Pine, upon the bareſt moors, and in the bleakeſt and moſt inhoſpitable ſituations are well known. The returns of theſe plantations have been ſuch as fully to ſatisfy the owners. But when the collateral advantages are adverted to, the improvements are very great indeed: for in the neighbourhood of ſuch plantations, houſes can be reared at ſo little expenſe, and the roofs are ſo much better than ordinary, as to induce ſettlers to make their dwellings much neater and more commodious than in other places; rails and other dead fences can be ſo eaſily obtained, that poor people are firſt enabled to have good well-fenced gardens, and then commodious incloſures of larger extent; the branches afford fuel to the ſettlers; cutting and manufacturing the wood furniſhes employment to many; population is thereby augmented; hence a deſire for land to produce the neceſſaries of life, and a conſequent increaſe of rent to the proprietor. In this way, Mr. George Dempſter ſees fields rapidly converting into cultivated grounds on his eſtate, and yielding to him ten or twelve ſhillings an acre rent, not only without any expenſe to him, but after having derived a conſiderable profit from the ſale of woods of his own planting, which grew upon land that five and twenty years before was not worth, to him, above two-pence an acre, and which might have remained in that ſtate for ages to come, had it not been planted.

A plantation of Scotch Pine can be made at much leſs expenſe than any other tree in the northern parts of Scotland, becauſe the young plants can be afforded at a ſmaller price. In Aberdeenſhire plants of two years old, and above that age no experienced planter will ever buy them, ſometimes ſell at four-pence the thouſand, conſiſting of 1200; and they ſeldom exceed eight-pence: and there are men who will undertake to complete the whole incloſing, and planting at the diſtance of a yard from each other, and ſupply the deficiences for five years, at the rate of from ten ſhillings to thirty ſhillings the Scotch acre[a], according to the ſize of the incloſure, and the nature of the fence.

It is found by experience, that there is ſcarcely any ſoil ſo bad, or any expoſure ſo bleak, where this tree will not live, if the plantation be of ſufficient extent, and not upon the very ſummit of high peaked hills. They do not indeed bear the ſea air very well; nor is the wood ever of a good quality, or the tree long lived upon clayey ſoils. Several perſons in the South of England have found that the Pinaſter bears the ſea blaſt much better than any of the other Pines. The Spruce Fir will bear a ſtill more expoſed ſituation than the Scotch Pine, and after a few years it ſhoots up with ſtill greater luxuriance. But the cones not being to be had in equal abundance, and the plants being more difficult to rear, they are ſold at a much higher price. Silver Fir, in a good ſoil, proſpers well, and is a beau-

[a] Philoſoph. account of the Works of Nature, 1721. p. 17
[a] Hunter's additions to Evelyn.

[b] Boutcher.
[a] Four Scotch acres are nearly equal to five Engliſh acres.

tiful tree, but the price of the plants is too great to admit of large plantations of them being made.

Where the ſituation is bleak, and much expoſed to ſtrong blaſts of wind, the plantation muſt not only be of conſiderable extent, but the trees muſt be planted very cloſe, ſo as to be not more than from two to three feet aſunder: the more expoſed the ſituation the cloſer they muſt be; for it is obſerved that until the branches intermingle and thus ſerve to give a mutual ſupport to each other, the trees never begin to advance with vigour. Where the plantations are thus thick, there is a neceſſity for beginning to thin them out from the tenth to the fifteenth year after planting. Where the plantations are extenſive, theſe thinnings ſell at a ſmall price, but there are few ſituations in which they will not do more than pay for the expenſe of cutting them out.

The leaves and branches of the Scotch Pine afford a very wholeſome nouriſhment to cattle and ſheep. In mountainous countries, where ſnow ſometimes lies upon the ground for many weeks together, the benefit that may occaſionally be derived from ſuch plantations will be very great: and the larger branches that are left make excellent fire-wood[r].

The ſeeds of Pines are better extracted from the cones, by laying them in the ſun than by the fire. The application of too great a heat will injure or deſtroy vegetation in them; and the practice of laying the cones on the floor of a malt-kiln, which is ſaid to be uſed by ſeedſmen, will account for the badneſs of ſeed purchaſed from wholeſale dealers. It may alſo be too old, for the ſeeds of Pines and Firs ſhould be ſown as ſoon as poſſible after they are taken from the cones.

Mr. Miller has affirmed, that the ſeeds, kept in the cones, will grow at ſeven or even ten or twelve years old. Mr. Hanbury, and Mr. Marſhall from him, call this a very great and dangerous miſtake, at leaſt as applied to the Stone Pine, for the ſeeds of this ſort, whether kept in the cones or taken out, are never good after the firſt year. This may probably be right; but Mr. Miller's affirmation is of Pines in general, not of the Stone Pine in particular; and Mr. Miller himſelf confirms theſe gentlemen's correction in ſome meaſure, by ſaying that he had frequently received the ſeeds of a Pine from China, ſo like thoſe of the Stone Pine, as not to be diſtinguiſhed from them; but that being taken out of the cones, they never grew.]

Firs.

The Firs are propagated by ſeeds, in the ſame manner with the Pines. A gentle heat will ſerve to extract the ſeeds of theſe, becauſe their cones open much eaſier than thoſe of the Pines, eſpecially the Silver and Balm of Gilead Firs, which, if permitted to hang late in the autumn, fall to pieces and ſcatter their ſeeds. It is beſt however to preſerve the ſeeds in the cones till the time of ſowing, which is the end of march or beginning of april; according to the ſeaſon; in a north or north-eaſt border; covering the ſeeds about half an inch deep with the ſame light mould in which they are ſowed; and netting the beds to keep off the birds. In theſe beds the plants ſhould remain until the following ſpring, when there ſhould be a number of beds prepared in the nurſery to receive the ſeedlings. In the beginning of april they ſhould be tranſplanted into the beds, at the diſtance of ſix inches row from row, and in the rows at three inches aſunder, ſetting them in a quincunx order. In removing theſe plants, they ſhould be very carefully raiſed up with a trowel, ſo as not to break off the fibres of the roots; nor ſhould they be kept long out of the ground. During the time they are out, their roots ſhould be covered, to prevent the wind from drying their fibres; and in planting, the earth ſhould be preſſed cloſe to their roots, to prevent the air from penetrating to them.

If the ſeaſon prove dry, it will be proper to water the plants every week once or twice, according to the warmth of the weather; the beds ſhould alſo be covered with mats, to ſcreen the plants from the ſun, and drying winds, until they have taken good root; after which time they will require little farther care, than to keep them clean from weeds. In theſe beds the plants may remain two years, at the end of which they ſhould be tranſplanted into an open ſpot of ground, for their roots will in that time meet quite over the beds. This ground, to which they are to be removed, ſhould be well trenched and cleared from all noxious weeds, and made level. The beginning of april, juſt before the plants begin to ſhoot, will be a good time to remove them. In taking up the plants, great care ſhould be taken not to tear off or injure their roots; nor ſhould too many of the plants be taken up at one time, but rather plant them as faſt as they are taken up, that they may be as little time out of the ground as poſſible. For the drying winds, which uſually happen at this ſeaſon, will greatly injure the roots of theſe plants, if much expoſed thereto.

The diſtance at which they ſhould be placed in the nurſery, ſhould be four feet row from row, and in the rows two feet aſunder. This diſtance may by ſome be thought too great; but let it be conſidered how much their roots ſpread in the ground, as alſo that when they are planted nearer together, it will be very difficult to take up the plants again without cutting and tearing off their roots, eſpecially if they are not all taken up clean at the ſame time: theſe conſiderations muſt have greater weight than that of the loſs of a little ground, with all who have any regard to the future welfare of the plants. In planting them, it will be adviſeable to draw a line croſs the ground, and to dig out a trench of a foot wide, into which the plants may be placed at the diſtance of two feet aſunder. Then fill the earth into the trench, covering the roots of the plants with the fineſt part of it, ſcattering it carefully between the roots; and when the whole trench is filled in, preſs the earth gently down with your feet; but by no means tread it too hard, eſpecially if the ground be ſtrong, or apt to bind too cloſe.

When the plants are thus planted, if the ſeaſon ſhould prove dry, they ought to be watered, in order to ſettle the earth to their roots; and if this be repeated three or four times, (if the ſeaſon ſhould continue dry) it will greatly promote their taking new root, and ſecure them from the injuries of the drying winds. In this nurſery the plants may remain two or three years, according to the progreſs they ſhall have made; and during this time, the ground between the plants ſhould be conſtantly kept clean from weeds, and dug between the rows every ſpring; in doing of which, care muſt be taken not to cut or injure the roots of the plants: this is all the culture they will require during their continuance in the nurſery. When they are tranſplanted into the places where they are to remain, the neceſſary care to be taken is, in taking them up, not to injure or cut off their roots, and to let them be as little time out of the ground as poſſible; and while they are out, to guard their roots from the drying winds. The fureſt time for removing theſe trees is about the beginning of april; for though they may be, and often are, removed with ſucceſs at Michaelmas, yet the ſpring is the more ſure ſeaſon, eſpecially in moiſt land.

Moſt of the kinds of Firs may be removed at the height of ſix or ſeven feet; but thoſe of two feet high are much better to tranſplant, and will in a few years gain the aſcendant of taller trees: I would not, therefore, adviſe the tranſplanting of theſe trees when they are much above two feet high, eſpecially if they have ſtood in the nurſery unremoved. For then their roots will have extended themſelves to a diſtance, and muſt be cut in taking them out of the ground; and where great amputation is uſed either to the roots or branches of theſe trees, the quantity of turpentine which commonly iſſues from theſe wounds, will greatly weaken the trees. There is another advantage alſo in planting them when ſmall, which is that of not requiring ſtaking to ſecure them from being blown down by ſtrong winds, which in tall trees is a great trouble and expenſe. And whoever will give themſelves the trouble to obſerve, how much trees of two feet high exceed

[r] Anderſon's Eſſays, vol. 3. 358. &c.

exceed in growth thoſe which are removed at a much greater height, will, I am ſure, be convinced of the truth of what is here ſaid.

The common Spruce Fir is what affords the white deals. The trees grow in the deep ſtrong ſoils of Norway and Denmark; but will grow likewiſe in almoſt any ſoil or ſituation in England, provided it be not within the reach of the ſmoke of great cities, which is very injurious to all theſe ſorts of trees; nor do they thrive near ſo well in dunged land, as in freſh uncultivated ſoils. The diſrepute theſe trees have been under for ſome years paſt, has been occaſioned by their being planted too cloſe together, or too near other trees, whereby the air has been excluded from their branches, which has occaſioned moſt of their under branches to decay; ſo that when viewed from the ground under their branches, they have a greater appearance of dead than living trees. But where they have been allowed a good diſtance, and planted in a ſtrong freſh ſoil, they have had their branches quite feathered within ſix or eight feet of the ground, and that too in trees upwards of ſixty feet high; therefore they ſhould not be planted nearer than twelve feet apart, nor ſhould they be ſo near, where the plantation is more than three rows deep. In this caſe, eighteen or twenty feet aſunder will be full near enough, eſpecially where the trees are deſigned to have their branches feathered near the ground, in which one of the beauties of theſe trees conſiſts.

The Silver Fir requires a ſtronger land than the Spruce, for in dry ground they ſeldom make any great progreſs; and many times, even after they have arrived to a conſiderable ſize, are deſtroyed by very dry ſeaſons, where the ſoil is ſhallow, or too dry. But when they are planted in a proper ſoil, they grow to a very large ſize, and are extremely beautiful, having the under ſide of their leaves white, and the upper ſide of a dark green colour.

This ſort of Fir, however, is frequently injured by froſts, when they happen late in the ſpring, eſpecially while the plants are young. For when theſe are planted in a warm ſituation, they are apt to ſhoot pretty early, and if any ſharp froſts happen after they have puſhed, the young ſhoots are killed; ſo that they loſe a year's growth, and are rendered ſo very unſightly, that many times they have been pulled up and thrown away. In cold ſituations, however, where they do not begin to ſhoot ſo early, they are not ſubject to this diſaſter; and, in many ſuch places, theſe trees grow to a large ſize, and have their beauty. I have ſometimes ſeen ſome fine trees of this ſort of Fir, which grew upon natural bogs, where, by extending their roots, they had drained the ground to a conſiderable diſtance round them.

The method of raiſing the other ſort of Firs.

About the latter end of march, or the beginning of april (according to the forwardneſs of the ſeaſon, by which every perſon muſt be guided) prepare a very moderate bed, in length proportional to the quantity of ſeeds to be ſown, and where there are frames which can be ſpared for this purpoſe, theſe may be placed upon the bed; but where theſe are wanting, the bed ſhould be cradled over with hoops, that they may be covered with mats or canvaſs; then plunge the bed full of ſmall pots, ſuch as are commonly ſold about London for four ſhillings and two pence per hundred. Theſe pots ſhould be filled with light undunged earth, and the interſtices between the pots may be filled up with any other earth which is neareſt to the place; then ſow the ſeeds in theſe pots, covering them about half an inch with the ſame light earth. In drying winds the bed ſhould be covered, to prevent the earth from drying too faſt, which would prove hurtful to the ſeeds; nor ſhould the ſeeds have too much wet, which would be equally injurious to them: therefore the earth ſhould be but ſeldom watered, and it muſt never be given in great quantities. When there is any appearance of froſt at night, the bed ſhould alſo be covered. With this management the plants will appear in five or ſix weeks time, when they muſt be carefully guarded from birds as was before directed for the common ſorts, and alſo ſcreened from the ſun in the middle of the day; but they muſt now have freſh air admitted to them at all times when the weather will permit. They may alſo be allowed to receive any gentle ſhowers of rain, but they ſhould not have too great plenty of moiſture, which will frequently rot the young plants, and cauſe them to drop. Upon the judicious care of this, depends the whole ſucceſs; for I have frequently ſeen great numbers of theſe plants deſtroyed in one day, by being either too much expoſed to the ſun, or from having too much wet.

It may, perhaps, ſeem ſtrange to many, that I ſhould direct the ſowing the ſeeds of theſe trees which are ſo very hardy upon a hot-bed; but from many trials I have always found they have ſucceeded much better this way than any other, for the gentle warmth of the bed will not only cauſe the ſeeds to vegetate much ſooner than they would naturally do in the cold ground, but the plants will alſo riſe much ſtronger, and, conſequently, be in leſs danger of rotting in their ſhanks. And as the warmth of the bed is only to bring up the plants, ſo there ſhould be but little dung employed in making it; for after the plants are up, they muſt be inured to the open air, and treated as hardily as the common ſorts.

There may be others, perhaps, who will object to the directions given for ſowing the ſeeds in ſuch ſmall pots, becauſe, where there is any quantity of the ſeeds, it is uſual to ſow them in boxes, or large pots: but I can from many years experience aver, that moſt ſorts of ſeeds ſucceed better when ſown in ſmall pots, than in boxes, or larger ones, and therefore recommend this practice.

As the ſeeds of the Hemlock Fir will frequently remain in the ground four or five months, the pots, in which they are ſown, ſhould not be diſturbed, if the plants come not up ſo ſoon as may be expected; for unleſs upon ſtirring the ground, the ſeeds are found to be decayed, there may be hopes of their growing the ſecond ſpring, for I have ſometimes had the ſeeds remain a whole year in the ground, and afterwards come up very well: this caution, therefore, is given to prevent the pots from being too haſtily turned out.

The plants of theſe ſorts of Fir muſt be afterwards treated in the ſame way as the common ſorts with this difference only, that they ought to be tranſplanted into a more ſhady ſituation and moiſter ſoil. For while the plants are young, they will not thrive if they are much expoſed to the ſun, or in a dry ſoil; but when they have obtained ſtrength, they will bear the open ſun very well, and in a moiſt ſoil will make great progreſs; whereas in dry ground they frequently ſtint, and produce plenty of male flowers and cones, by the time they get to the height of four or five feet. When the branches of theſe trees are cut off to trim them up to have ſtems, it ſhould be done gradually, never cutting more than one tier of branches in one year; for if too many wounds are made at the ſame time on theſe reſinous trees, the turpentine will iſſue out in ſuch quantities as to weaken and check their growth. The beſt time for pruning theſe trees is in ſeptember, at which time they abound not ſo much in turpentine as in the ſpring, and, conſequently, do not bleed much. What flows out at that ſeaſon, is ſeldom more than is neceſſary for covering the wounds, to prevent the wet and cold of the ſucceeding winter from penetrating the wounded parts. Theſe branches ſhould be cut cloſe to the trunk.

[In ſowing all ſorts of Firs, neglect not to clap over the beds with the back of a ſpade. In the autumn after ſowing pick off all moſſy hard particles from the beds, replacing them with ſome good ſoil, and then ſifting over ſome chaff, or rather ſaw-duſt, that has lain ſome time. The ſucceeding ſpring, and during may and june, water them frequently, and in autumn treat the beds as before. At two years old, when the buds begin to ſwell, remove them from the ſeed-bed.

The Balm of Gilead and Hemlock Spruce ſhould have the beds hooped over, to be covered with mats for five or ſix weeks after the plants appear above ground, when the ſun is hot, or the air cold or froſty:

they ſhould be watered every ſecond evening, when it does not rain.

The Balm of Gilead Fir requires a good deep ſoil, and a ſheltered ſituation.

It is in vain to plant the Silver Fir in hot dry or rocky ſituations, where it commonly loſes the top ſhoots, and the under branches ſoon become ragged. The largeſt and moſt flouriſhing trees are ſeen on four heavy obſtinate clay, and though for ten or twelve years they do not advance ſo faſt as ſeveral other Firs and Pines, yet in twenty they will outgrow them all. They ſhould not be too cloſe, but require a free circulation of air*.

According to Mr. Boutcher's opinion though ſpring be the proper ſeaſon for planting ſeedling Firs and Pines, yet the beſt time for tranſplanting all the hardy ſorts, which have arrived to a foot in height or upwards, is the month of auguſt, as ſoon as they have perfected their ſhoots. Mr. Hanbury recommends July.

For plantations of timber, where the land can be got in order for it, the beſt method certainly is to ſow the ſeeds on the ground where they are to continue; but if this cannot be done, the plant ſhould be finally ſet out from the ſeminary at two years old: in rough grounds overrun with heath, &c. ſuch ſmall plants would be loſt; they muſt be removed from the ſeminary into a nurſery, and not finally planted out till they are of a ſize to overtop the heath and graſs.

For ornamental plantations it may be ſometimes deſirable to plant out much larger. For this Mr. Boutcher gives the following directions.

In order to remove Firs or Pines eight or ten feet high with ſucceſs, at four years old tranſplant them to another ſpot of good land, in rows two feet and a half aſunder, and fourteen or ſixteen inches diſtant plant from plant. Water them at planting, and continue it once a week five or ſix times when it does not rain: keep the ground clean, dig it ſpring and autumn, and let the plants remain three years. Then remove them in ſpring, ſhortening their ſtraggling roots moderately, and plant them in rows four feet aſunder, and two feet in the row, to remain three years longer. If required larger, remove them again, at ſix feet aſunder every way, to remain two, or not more than three years; by which time, in good land, the Norway, Black and White American Spruces will be from fourteen to ſixteen, and the Silver Firs from ten to twelve feet high. Thus managed, they will riſe with ſuch large balls of earth, as will prevent their receiving the leaſt injury at removal. Theſe and other large evergreens require more frequent, though gentler waterings, than deciduous trees, and ſhould have no branches taken off at this time.]

Cedar of Lebanon.

The cones of this tree are frequently brought from the Levant, and we have them now of our own growth. If they are preſerved entire, the ſeeds will keep good in them ſeveral years: the time of their ripening is commonly in the ſpring, and thoſe which come from abroad are near one year old before we receive them; for which they are not the worſe, but rather the better; the cones having diſcharged a great part of their reſin by lying, and the ſeeds are much eaſier to get out of them than ſuch as are freſh taken from the tree.

The beſt way to get the ſeeds out is to ſplit the cones, by driving a ſharp piece of iron through the center lengthways, then with your fingers you may pull out the ſeeds, which you will find faſtened to a thin leafy ſubſtance as are thoſe of the Fir-tree: but before the ſeeds are taken out, it will be proper to put the cones in water for twenty-four or thirty hours, which will render them eaſier to ſplit, ſo that the ſeeds may be taken out with greater facility; for there will require care in doing of it, otherwiſe many of the ſeeds will be ſpoiled, as they are very tender, and will bruiſe where there is any force employed to get them out.

[This will be beſt accompliſhed by thruſting a wooden peg down the hole, rather bigger than the iron one, after the cones have been ſoaked. The ſame method may be uſed for extracting the ſeeds out of the Stone Pine.]

Theſe ſeeds ſhould be ſown in boxes or pots of light freſh earth in march, and treated as was directed for the Firs, only theſe require more ſhade in ſummer while young than the Firs, and ſhould be frequently refreſhed with water.

When the plants come up, which will be in ſeven or eight weeks, they muſt be guarded from the birds, otherwiſe they will pick off their tops, as they do of the young Firs where they are not guarded; they muſt alſo be conſtantly kept clean from weeds, and not placed under the drip of trees. The plants may remain in theſe boxes or pots in which they were ſown till the following ſpring, but it will be proper to place them under a frame in winter, or cover them with mats, if the ſeaſon proves very ſevere; for while they are young they are in danger of loſing their tops, if they are pinched by froſt, for the young plants often ſhoot late in the autumn. In april before the plants begin to ſhoot, they ſhould be carefully taken up and tranſplanted into beds at about four inches diſtance, cloſing the earth gently to their roots; theſe beds ſhould be arched over with hoops, and covered with mats in the heat of the day, to ſhade the plants from the ſun till they have taken new root; and if the nights prove froſty, it will be proper to keep the mats over them in the night, but in cloudy or moiſt weather they muſt be always open. After the plants are well rooted, they will require no other care but to keep them clean from weeds, unleſs the ſeaſon ſhould prove very dry, in which caſe it will be proper to give them ſome water once or twice a week; but it muſt be but in ſmall quantities, for too much wet is often very injurious to them; ſo that it will be better to ſcreen them from the ſun in hot weather, to prevent the earth from drying too faſt, or cover the ſurface of the ground with moſs to keep it cool, than to water the plants often.

In theſe beds the plants may ſtand two years, then in the ſpring they ſhould be either tranſplanted to the places where they are deſigned to remain, or to a nurſery where they may grow two years more; but the younger theſe trees are when they are planted out for good, the better the trees will thrive, and the longer they will continue.

When theſe plants begin to ſhoot ſtrong, you will generally find the leading ſhoot incline to one ſide; therefore, if you intend to have them ſtraight, you muſt ſupport them with ſtakes, obſerving to keep the leader always cloſe tied up, until you have got them to the height you deſign them, otherwiſe their branches will extend on every ſide, and prevent their growing tall.

Theſe trees were formerly kept in pyramids, and ſheared as Yews, &c. in which form they loſe their greateſt beauty; for the extenſion of the branches is very ſingular in this tree, their ſhoots for the moſt part are declining, and thereby ſhewing their upper ſurface, which is conſtantly clothed with green leaves in ſo regular a manner, as to appear at ſome diſtance like a green carpet; and theſe waving about with the wind, make a moſt agreeable appearance at a diſtance, eſpecially if planted on a riſing ground.

[During the time they are in the nurſery, and after planting out, many will frequently have a tendency to droop in their leading ſhoot; as ſoon therefore as this is perceived, an upright ſtake muſt be driven into the ground, to which the ſhoots ſhould be tied with baſs matting to keep them in their upright growth. This however will not always effect it, for ſome plants in ſpite of the bandage, will ſhoot downwards. In this caſe, when they firſt diſcover ſigns of ſuch a tendency, it will not be amiſs to lighten the head, by nipping off the extremities of ſome few of the largeſt branches.

When theſe trees are planted out to remain, they ſhould be left to nature, after being properly fenced: not a knife nor a hatchet ſhould come near them: lopping even their loweſt branches is ſo injurious, that

* Boutcher.

it both retards their growth and diminiſhes their beauty[1].]

THE LARCH.

The common Larch is now very plenty in moſt of the nurſeries in England, and of late years there has been great numbers of the trees planted; but thoſe which have been planted in the worſt ſoil and in bad ſituations, have thriven the beſt; for where trees of equal ſize have been planted in good garden earth at the ſame time, the others on the cold ſtiff land, have in twelve years been twice the height of thoſe planted in good ground; which is an encouragement to plant theſe trees, ſince they will thrive in the moſt expoſed ſituations, provided they are planted in clumps near each other, and not ſingle trees; nor ſhould the plants which are planted in very open expoſed places be taken from warm nurſeries, but rather raiſed as near to the ſpot where they are to remain as poſſible; nor ſhould the plants be more than three or four years growth when planted, where they are deſigned to grow large: for though trees of greater ſize will remove very well, and grow ſeveral years as well as if they had not been tranſplanted; yet after twenty or thirty years growth they will frequently fail, where the young planted trees have continued very vigorous.

Theſe trees are raiſed from ſeeds, which moſt years ripen well in England: the cones ſhould be gathered about the end of november, and kept in a dry place till the ſpring, when they ſhould be ſpread on a cloth and expoſed to the ſun, or laid before a fire, which will cauſe the ſcales of the cones to open and emit their ſeeds. Theſe ſeeds ſhould be ſown on a border expoſed to the eaſt, where the morning ſun only comes on it: or if they are ſown on a bed more expoſed to the ſun, they ſhould be ſcreened with mats from the ſun in the middle of the day; for when the plants firſt appear above ground, they are very impatient of heat; and when the bed is much expoſed to the ſun, the ſurface of the ground will dry ſo faſt, as to require to have water very often, which frequently rots the tender ſtems of the plants; which will be prevented by properly ſhading them while young, and afterwards they will be in no danger. Theſe young plants ſhould be conſtantly kept clean from weeds, and if they have made good progreſs, they may be tranſplanted the following autumn, otherwiſe they may remain in the ſeed-bed another year, eſpecially if the plants are not too cloſe together. When they are tranſplanted, it ſhould be performed in the autumn as ſoon as their leaves decay; they may be planted in beds at about ſix inches aſunder each way, which will be diſtance enough for the growth of the plants the two following years, by which time they will be fit to tranſplant where they are to remain.

When the young trees are planted out for good, they need not be more than eight or ten feet diſtant from each other, always planting them cloſer on expoſed ſituations, than where they are more defended; after the trees are planted, they will require no other care but to keep them clean from weeds for three or four years till the trees have obtained ſtrength, when they will over-top the weeds and prevent their growth; but the ground between theſe trees ſhould not be dug, for that I have found has greatly ſtopped their growth.

The Siberian Larch is of ſlow growth in this country, for when the ſpring is mild, the trees will begin to ſhoot in february, or early in march; and there are frequently ſharp froſts after, whereby theſe ſhoots are often killed, and this ſtops the growth of the trees. Likewiſe when they are planted on a warm dry ſoil, they are frequently killed by drought in the ſummer; therefore this is a very improper tree for this country, unleſs for ſome cold, moiſt, peaty land, where they may probably thrive, and in ſuch ſituations few other trees will grow.

The American or Black Larch, thrives pretty well upon moiſt land, but on dry ground will make but little progreſs. A few of theſe trees by way of variety, may be allowed to have place in every collection of trees deſigned for pleaſure; but for profit, the common Larch is to be preferred to any other ſpecies.

This is a very proper tree for planting on cold barren hills, which in their preſent ſtate produce little or nothing to the proprietors, and in one age may be large eſtates to their poſterity, beſides a great national advantage. This might be effected at no great expenſe, if properly conducted.

The beſt method for doing this, would be by making ſmall nurſeries or ſeminaries at or near the place where the plantation is intended to be made. In theſe nurſeries the ſeeds ſhould be ſown; and if there are any poor cottagers, they may be employed in raiſing the plants, keeping them clean, and tranſplanting them. This will aſſiſt the poor, and by employing them in this buſineſs, they may be brought to have a regard for trees of their own planting: and as the ſeaſon for doing this, is at a time when farmers have little employment for their labourers, it is an advantage to all parties; and children may be taught to weed the young plants, and thus rendered uſeful, inſtead of being burdenſome to pariſhes.

[Though the cones of the Larch be of their full ſize in autumn, yet the ſeeds continue ripening all the winter; they ſhould not be gathered therefore till march or april. Spread them in dry covered places till may or june, and then expoſe them to the full ſun for ſeveral weeks, when the cones will open, and many of the beſt ſeeds come out, by ſhaking them in a wire ſieve: to get out the reſt, ſplit the cones, by driving a ſmall piece of ſharp iron through the centre, and then by expoſing them again to the ſun for a few days, the ſeeds will ſhake out, or may eaſily be picked out with the point of a knife. Though the ſeeds in the cone are good for four or five years, yet out of it they loſe their vegetating quality in a few months; therefore as ſoon as they are got out, mix them with fine dry ſand, and keep them in bags till the ſeaſon of ſowing, which is the beginning of march, or as ſoon after as the weather will permit. Sow them very thin, in beds three feet and a half broad, with alleys of eighteen inches; clap them gently in with the back of a ſpade, and ſift over them fine compoſt earth, with one fourth ſea-ſand or pit-ſand. If the weather is dry and not froſty, in a fortnight after ſowing, give them gentle waterings every fourth or fifth day, and in ſix weeks they will begin to appear. Guard them from the birds with nets, and water them every ſecond or third night for three weeks very gently: continue this once in ten or twelve days to the end of auguſt.

The end of march or beginning of april following remove them from the ſeed-bed to the nurſery, in rows fifteen inches diſtant, and ſix or ſeven inches aſunder; watering them at planting, and once a week for five or ſix weeks after.

At the ſame time in the ſucceeding year remove them to another nurſery, in rows three feet diſtant, and fifteen or ſixteen inches in the row: here let them remain two years; by this time they will be five or ſix feet high, and of a proper ſize to tranſplant in expoſed ſituations, on meagre hungry ground*.

Dr. Hunter directs, that juſt before ſowing, the cones ſhould be opened or torn into quarters by a knife, the point of which muſt be thruſt exactly down the centre, that the ſeeds may not be damaged: they ſhould then be threſhed in a room. Three thouſand cones will generally produce a pound of good ſeeds: theſe being winnowed or ſieved will be ready to ſow in april.

Or, the ſcales of the cones being ſo glued together, that they are ſeparated with difficulty without bruiſing the ſeeds; let them be laid in heaps ſix inches thick, in a ſhady but expoſed ſituation, till the beginning of may. Then let beds four feet in breadth be prepared, newly dug; let the mould be raked to the ſides, ſo as to form a kind of ridge, to prevent the cones from falling into the alleys, which ſhould be two feet wide for the convenience of the weeders. Cover theſe beds entirely with the cones, and if the weather comes

[1] Marſhall on planting, edit. 2. vol. 2. 260.

* Boutcher.

warm and dry, they will preſently expand, and ſhed the ſeeds. When a ſufficient quantity is ſhed, remove the cones to a ſecond bed, firſt giving them a ſhake in a coarſe ſieve, which will cauſe a conſiderable quantity of ſeed to fall, eſpecially if it be done in the middle of the day: then ſift fine mould, a quarter of an inch thick, over the whole bed. If the weather ſhould be dry, they muſt be gently watered, and the beds kept clear of weeds. The cones may be removed to a third, and even a fourth bed. The times for laying on the cones depends on the dryneſs and warmth of the weather. The ſeeds ſhould come up thick, or elſe they will be apt to be thrown out of the ground by the froſt.

The following ſpring prick them out in beds three inches aſunder: and the ſecond ſpring plant them in the nurſery in rows three feet aſunder, and eighteen inches in the rows. Hence they may be planted out finally the ſecond or third year after. But as thoſe trees always thrive beſt that are removed ſmall, they ſhould be planted out as ſoon as they are of a ſufficient ſize not to be injured by weeds*.

Dr. Anderſon, who endeavoured five and twenty years ſince to turn the attention of his countrymen in Scotland towards this uſeful tree, is of opinion that it ſhould be planted entirely by itſelf, becauſe ſoon outgrowing moſt other trees, where the Larches are thinly ſcattered, they are expoſed to the wind, and their tender top-ſhoots are apt to be damaged. He recommends therefore that the Larch ſhould be made to ſhelter itſelf, by planting very thick, even ſo near as two feet. In a plantation made at this diſtance, the trees have ſhot up with great rapidity, ſtraight, clean, and healthy.

His theory is this. It has been often remarked, that no wood of the Fir kind, raiſed in artificial plantations, ever equals in quality that which is produced ſpontaneouſly: the natural wood being cloſer in the grain, harder and deeper in colour, with fewer knots in it. The reaſon is, that in natural woods of Larch and other coniferous trees, the ſeeds being ſtrewed very thick upon the ground, the plants ſpring up very cloſe. Being ſtraitened for room, their growth is ſtinted, and they ſtruggle for ſome years which ſhall get the better. By degrees, the weaker plants are over-topped and die; but ſtill others ſtruggle for life, and maintain the conteſt; and thus it goes on till they have attained a conſiderable height, when the boughs of the moſt vigorous trees, ſpreading out above, overtop all thoſe that are near, and thus a ſufficient ſpace is allowed for theſe to flouriſh till they attain their full ſize.

During this long ſtruggle the growth of the trees is ſlow, and conſequently the fibres of the wood very cloſe and hard. The ſide branches too, having no room to ſpread abroad, are kept weak, and are ſoon ſuffocated, by the winds and rubbing of the trees round them, theſe branches are ſoon broken off, and the bark begins to cloſe over the wound. The ſtem thus becomes clear of branches and ſmooth, and all the wood that afterwards grows over it is free from knots.

In artificial plantations we follow an oppoſite courſe. Anxious to admire the progreſs of our trees, no meaſures are adopted to retard their progreſs at an early period, but rather the reverſe: and were we even inclined to follow nature, the very expenſe of planting ſo many trees on an acre would be a deciſive bar to ſuch enterprizes. The young trees are of courſe planted at a conſiderable diſtance, and are encouraged to grow as quickly as poſſible, and thus the wood is coarſe in the grain and ſoft. The branches too, having room to ſpread, advance with great luxuriance, and continue to grow till they attain a large ſize, and of courſe render the wood full of large knots.

Though we cannot afford to make our plantations ſo thick as nature does, we ought to approach as near as prudence will admit; and by planting Larches at two feet diſtance, the benefit to be derived from the practice will do more than repay all expenſes attending it.

At this diſtance, an Engliſh ſtatute acre will contain 10890 plants. Being planted in rows, the younger the better, the ground laid dry, well-fenced, and no graſs or weeds ſuffered to choak them; in this ſtate they may remain ſix, eight, ten or twelve years, according to the ſoil, or the purpoſes for which the thinnings are wanted; when they ſhould be thinned for the firſt time. This however ought not to be too long delayed, leſt the tops, by growing too cloſe, ſhould be ſo much ſmothered as to occaſion a hurtful gap when the thinnings are taken away.

One row ſhould now be wholly taken out, ſo as to leave the plants four feet apart; and allowing three rows to remain entire, take out the fourth, and ſo on. Thus, though the row on each ſide the opening will loſe its ſupport on one ſide, its branches being ſtill intermixed with thoſe on the three other ſides, will give it ſufficient ſupport. It is neceſſary to cut out a row completely, to admit of trailing out the long ſpires, together with their tops, which could not otherwiſe be done.

In conſequence of this open, the branches above will be permitted to grow more freely, and in this ſtate they ſhould remain till they intermingle again above, when they ſhould receive the ſecond thinning, by taking out the middle row that was left at the former thinning, when the plants will ſtand in the rows four feet apart, and two feet from each other in the rows.

When the branches cloſe again, the third thinning may be given by culling out every fourth row croſswiſe. And the fourth thinning may be given, by taking out the croſs row that was left between the two contiguous to it.

Now the trees in a whole plantation are again reduced to ſquares, ſtanding four feet apart: and there will remain 2722 trees on an acre. So that 8168 trees have been taken out in the ſucceſſive thinnings.

After a proper interval, the trees might be thinned, as above deſcribed, till they are gradually reduced to ſquares at eight feet apart, which is perhaps the greateſt diſtance that ſhould be allowed to trees of this kind. At this diſtance an acre will contain 680 trees.

If then thinnings be begun from the ſix to the tenth year from the time of planting, the whole may be completed thus far by the thirtieth or fortieth year of their growth; during which time there will have been ſold 10210 ſpars from fifteen to fifty feet in height, and proportional thickneſs, from each acre. If it be thought adviſable to continue the thinning farther, after this period, no whole rows ought ever to be cut out any where, but only a ſingle tree here and there.

Now if we ſuppoſe that the ſale of the ſpars would be ſufficient to defray the expenſes of making and upholding the plantation; and that each tree at fifty years growth, inſtead of containing 360 feet of wood, as thoſe at Dunkeld are known to do, ſhould at the ſame age meaſure no more than ſeventy feet each, which is leſs than one-fifth of the others: in that caſe the 680 trees on an acre would contain 47600 cubic feet of timber, which, at 1s. a foot, would be 2380l.; from which, if the rent be deducted at 5s. an acre, which for fifty years is 12l. 10s. and intereſt for payments withheld 14l. 10s. more; there will remain 2353l. clear profit: without taking into the account any advantage from turpentine.

An efficient fence is abſolutely neceſſary for a plantation of Larch, becauſe it is extremely impatient of wounds in its bark. No cattle or ſheep therefore ſhould be admitted, even after the trees have attained a conſiderable ſize.

The nature of the fence muſt be determined by circumſtances. A ſtone wall will be the moſt common, as Larch ought chiefly to be planted on mountainous tracts, and it is the moſt effectual, except againſt light-bodied ſheep, which will readily overleap it, unleſs there is ſome defence of buſhes or a rail on the top of it.

A ditch and bank is by no means an effectual fence againſt ſheep, or even againſt cattle after ſome time, unleſs

* Additions to Evelyn. The laſt is the method practiſed in the Duke of Athole's plantations.

unleſs furze be ſown upon the top of the bank; or in three rows, two of which ſhould be on the ſlope of the bank, cutting one of the rows cloſe every year, to keep it from becoming open at bottom.

When this fence decays, as it will in ten or twelve years, the outer line of Larches being left, will make a fence of themſelves, or at leaſt with the aſſiſtance of the Sweet-briar or Bramble planted between the trees and interwoven with their branches, and a rail from tree to tree where it is wanted [a].

Dr. Watſon, the learned Biſhop of Landaff, who is ever ready to ſtep forward when uſeful ſcience or arts can be promoted, remarks, that the higheſt and moſt craggy mountainous tracts in our iſland, two acres of which do not afford ſufficient ſuſtenance for ſix months in the year to one ſheep, might, with a great proſpect of ſucceſs, be planted with Larches; and he ſtates the probable profit which would attend ſuch plantations.

A thouſand acres of ſuch land might be incloſed with a circular wall ſix feet in height, where the ſtones can be eaſily got, for 6s. an acre, or 300l. for the whole: five hundred larches, two feet in height, ſo as to enable them to reſiſt the long graſs, might be planted on each acre for 14s.; hence a plantation of five hundred thouſand Larches might be made for 1000l. Now this ſum improved at compound intereſt, at the rate of 4l. per cent. would in ſixty years, amount to the ſum of 10519l.; this is the accumulated loſs attending the incloſing and planting one thouſand acres of rocky land in ſixty years. The rent of a thouſand acres, at 1d. an acre is 4l. 3s. 4d. a year; in eight years the Larches would be out of all danger from ſheep, ſo that the loſs of rent ought only to be eſtimated for eight years; but 4l. 3s. 4d. a year, though improved after the ſame rate of compound intereſt, would not amount to 40l. in eight years; ſay however that it would amount to 81l. which is allowing more than 2d. an acre rent, then would the whole expenſe in ſixty years be 1060l. If the amount of 81l. for fifty-two years be taken into conſideration, the expenſe will be 11222l. The ſheep are here ſuppoſed to be ſhut out of the plantation for eight years, if it ſhould be found that ſheep will not crop the Larch, and from more than one obſervation, I have reaſon to believe that they will not, they need not be ſhut out at all; nor on diſtricts, where nothing but ſheep are depaſtured, need any fence be made. The advocates for cloſe planting, inſtead of five hundred, would require five thouſand Larches for each acre; I am not convinced of the utility of ſuch cloſe planting, except where it is intended to nurſe up Oaks, or other kinds of wood; but if that mode ſhould be adopted, the thinnings, after twenty years growth, would pay the expenſe of it. At the expiration of ſixty years, ſuppoſe that only 250 Larches remained on each acre, or that one half had periſhed, the probable value of them may be thus eſtimated. From many experiments made by myſelf, and collected from others, I find the annual increaſe in circumference of the Larch at ſix feet from the ground, to be one inch and a half on an average of ſeveral years; and this inference has been drawn from the actual admeaſurement of Larches in different parts of England and Scotland, and of different ages from ten years old to fifty. On this ſuppoſition, the Larches would meaſure, one with another, ninety inches in circumference, at ſix feet from the ground. Such a Larch would meaſure above ſeventy at twenty feet from the ground, ſuppoſing the length of the tree to be forty feet, neglecting the top; then will its ſolid content be eighty-five cubic feet, and its value, at 9d. a foot, above three guineas. But as the trees are ſuppoſed to be planted in an high, bleak, barren ſituation, their annual increaſe may not be ſo great as is here ſuppoſed; inſtead of being worth, at ſixty years after planting, three guineas apiece, admit that they are worth only 10s. then would the whole plantation be worth 125000l. and deducting the whole expenſe, there would remain a profit of 114400l. The preſent value of this, to be received ſixty years hence, is above 100000l.; intereſt of money at 4l. per cent. and will purchaſe an income, at this rate, of 4000l. a year. By planting then, a barren eſtate of a thouſand acres is improved from 4l. 3s. 4d. to 4000l. a year, reckoning the value of a reverſion as a preſent certainty. Sixty years is a great part of the life of a man; but it ought to be conſidered as nothing in the exiſtence of a nation, or even of a family, which is a little nation. All waſte lands that will not pay for converting into arable or paſture, ought to be covered with wood; the high parts, and eſpecially the ſheltered dells, in the high parts, with Larch; and the lower with Oak, Aſh, &c. Their preſent application to the ſummer-maintenance of a few miſerable ſheep, ought not to be perſevered in, if any other uſe can be made of them [b].

May the reſpectable prelate live to inform the public, whether the actual progreſs of the extenſive plantations which he has made, correſponds with theſe calculations!

E. Harries, Eſq. of Hanwood, recommends an attention to two circumſtances in planting Larches, viz. ſituation and diſtance. The ſtrong weſterly winds are very apt to bend the upper part of the trees, eſpecially if they ſtand ſingle, or upon ſloping grounds. To guard againſt this, he adviſes a ſhelter of Scotch Pines to be planted to the weſtward ſome years before the Larch. The other thing to be obſerved is to give the plants ſufficient room. In eight years they may be about twenty feet high, and their lateral ſhoots extend two yards every way from the trunk; and they ſhould not then be ſuffered to continue nearer than five or ſix yards; and what are left may continue to be uſeful building timber. At firſt planting a diſtance of about ſeven feet ſhould be allowed; they will then be furniſhed with ſufficient lower branches, which give the tree a ſteady and tapering trunk. The knife ſhould never be applied to them. There is no tree of quicker growth. I have Larches that are twenty feet high in ſeven years growth, and ſixteen or eighteen inches round. At thirty years growth they meaſure from four to five feet round, at five feet from the earth [c].

The Rev. Charles Hope, of Derby, who has made conſiderable plantations of mixed trees on rough ſtony land in Yorkſhire, ſays, that the Larch, of all, is his favourite. It not only outgrows every other tree, and that in the moſt expoſed ſituations; but he has reaſon to think it a moſt valuable wood, and that it will be taken out, as it grows, without damaging thoſe near it, which it has been the means of training ſtraight.

Some that were planted in 1785, were above twenty feet high in 1793.

Planting from the ſeed-bed is moſt advantageous, from the cheapneſs both in raiſing and planting, as well as from their ſucceeding ſo much better than in any other way [a].

Mr. White, who has made ſuch noble plantations at Butſfield in Durham, ſays that the Larch is not only ſuperior in beauty and hardineſs to the Scotch Pine, but furniſhes more durable and valuable timber; and is likewiſe a more tender and friendly nurſe to more delicate trees, being furniſhed with a great number of ſmall pliant branches well garniſhed with leaves; and which from their flexible quality will yield to the adjacent trees, and are not ſubject to laſh and buffet them; they alſo more readily admit the rains than the Scotch Pine does, and are not liable to receive injury in ſnowy ſeaſons, when the branches of the latter are frequently mutilated, and trees ſometimes totally deſtroyed.

Probably planters may have been often miſled by a miſtaken idea of the ſuperior hardineſs and nurturing quality of the Scotch Pine; or from not being acquainted with any other more proper tree to ſubſtitute in its place, have adopted it: in reſpect to ſhelter, it muſt be allowed to contribute in the winter more than deciduous trees; but as far as relates to the propaga-

[a] Eſſays, vol. 3. § 4. p. 126, &c.

[a] Agricultural ſurvey of Weſtmoreland, Prelim. obſerv.
[b] Young's Annals, 13. 99.
[c] Tranſact. Soc. Arts, vol. 12. for 1794.

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tion of the plantations themſelves, internal ſhelter at this dreary ſeaſon, when the powers of vegetation are totally locked up, is of much leſs conſequence, than in the more genial months, when the trees are making their ſhoots, the internal warmth of a plantation muſt then greatly facilitate the operations of nature, and the Larch, being one of the moſt early trees we have in the ſpring, is at that time in full foliage; and it is the moſt promiſing tree to aid thoſe operations.

The Larch alſo will thrive where few other trees will live; and when we conſider the many excellencies of this invaluable and pleaſing tree, it muſt be looked upon as a great misfortune to this country, that its introduction was not of an earlier date. About fifty years ago, I am told, this alpine plant was treated as a tender exotic, and planted out, with the utmoſt care and diligence, in our hot-beds and hot-houſes[4].

In this Mr. White muſt have been miſinformed, for my memory will carry me back half a century, and I never ſaw or heard of the Larch being treated otherwiſe than as a hardy tree; Miller, Evelyn, &c. certainly hint at no ſuch thing; and we have accounts of Larches planted in Scotland near ſeventy years ſince.

Mr. Marſhall informs us, that a ſtriking proof of the ſuperiority of the Larch in waterworks occurred on the eſtate of Athol. A weir or river dam, which, while conſtructed with Oak, required to be renewed every four or five years, was formed with Larch, and in 1792 had ſtood nine or ten years, the timber then remaining in a ſound firm ſtate. In gate-poſts the Larch has been found very durable.

In 1792, the Duke of Athol had a thouſand Larch trees then growing on his eſtates of Dunkeld and Blair only, of not leſs than from two to four tons of timber each; and had at that time a million of Larches, of different ſizes, riſing rapidly on his eſtate: which alone, if properly trained, would ſupply the Britiſh navy with ſhip-timber, for a length of years. The Highlands of Scotland alone, will henceforward be able to furniſh the whole commerce of the iſland with timber for its ſhipping.

Mr. Marſhall adds with great judgment—We have lands in England, and nearer to our ſhip yards, which will probably pay a hundred fold in Larch, compared with any other crop they are capable of producing. The barren heaths which occupy no inconſiderable portion of the kingdom; but more particularly, the ſingularly infertile plats of heath, in the ſouthern counties of Surrey, Suſſex and Hampſhire: lands, which at preſent, lie in a manner uſeleſs to the community; yet on which the Larch riſes with luxuriance.

If theſe waſtes ſhould be planted progreſſively with the Larch, properly trained for ſhip-building, the ſeveral yards of Portſmouth, Deptford, Chatham, &c. could not experience a want of timber for ages to come.

Were other waſtes of a ſimilar nature, lying in different parts of the iſland, particularly the mountain brows of the Engliſh highlands, in Yorkſhire, Weſtmoreland, &c. and alſo the Corniſh and Devonſhire mountains, with the Welſh and Salopian hills, with other barren heights, at preſent merely blank ſurfaces, converted to the ſame valuable purpoſe, a ſupply of foreign timber might, in half a century, become unneceſſary; and this, with little or no abridgment of agricultural produce.

The Larch not only flouriſhes in bleak and barren ſites, but increaſes with a rapidity unknown to every other durable wood. In the grounds of Blair of Athol, a Larch at five feet high girted upwards of eight feet, and contained by eſtimation four tons of timber, which was not, at the time it was meaſured, in 1792, fifty-four years old. At Dunkeld, another little more than fifty years old, girted at the ſame height eight feet ſix inches; its height was near one hundred feet, and its contents were from four to five tons of timber.

On the ſubject of the Larch we may ſafely conclude with Mr. Marſhall: that though we ſhould be very cautious how we are carried away by novel ideas and upſtart practices, however ſpecious; yet in the multitude of evidence here ſtated in favour of this tree, there ſeems ſufficient ground for deciſion; and that no time ought to be loſt in recommending it to the attention of government, and men of property in every diſtrict of the iſland, where barren heathy lands are found[5].

PINUS INDICA. See *Croton*.

PIPA. See *Cratægus Bibas*.

PIPER. (Πεπερι of *Theophraſtus* and *Dioſcorides*. *Derived* απο του πεπτειν, *concoquere*. *But it is probably of Indian origin.*)

Lin. gen. n. 43. *Reich. n.* 47. *Schreb. n.* 59. *Gaertn. t.* 92. *Juſſ.* 405. Saururus. *Plum.* 12.

Claſſ. 2. 3. Diandria Trigynia.

Nat. order of *Piperitæ*. *Urticæ*. Juſſ.

GENERIC CHARACTER.

CAL. *Spathe* none perfect.

Spadix filiform, quite ſimple, covered with florets.

Perianth none.

COR. none.

STAM. *Filaments* none. *Anthers* two, oppoſite, at the root of the germ, roundiſh.

PIST. *Germ* larger, ovate. *Style* none. *Stigma* three-fold, liſtpid.

PER. *Berry* roundiſh, one-celled.

SEED ſingle, globular.

ESSENTIAL CHARACTER.

Cal. none. *Cor.* none. *Berry* one-ſeeded.

SPECIES.

[1. Piper nigrum. *Black Pepper.*

Lin. ſpec. 40. *Juſſ.* 74. *Reich.* 1. 75. *Willd.* 159. *fl. zeyl. n.* 26. *mat. med.* 41. *Woodv. med. bot.* 513. *t.* 187. *Lour. cochinch.* 30. *Mill. illuſtr. Plunck, ic.* 25. *Marſd. Sumatra*, 105.

P. rotundifolium nigrum. *Bauh. pin.* 411. *Pluk. phyt. t.* 437. *f.* 1. *Mor. hiſt.* 3. 602. *f.* 15. *t.* 1. *f.* 1. *Blackw. t.* 348. *Raii hiſt.* 1341.

P. nigrum. *Park. theat.* 1603. *Ger. emac.* 1538.

Molago codi. *Rheed. mal.* 7. 23. *t.* 12.

Leaves ovate commonly ſeven-nerved ſmooth, petioles quite ſimple.

2. Piper Betle. *Betel.*

Lin. ſpec. 40. *Reich.* 1. 75. *Willd.* 159. *fl. zeyl. n.* 27. *Lour. cochinch.* 31. *Burm. zeyl.* 193. *t.* 83. *f.* 2. *Mor. hiſt.* 3. 603.

Beetla-codi. *Rheed. mal.* 7. 29. *t.* 15.

Betre ſ. Betelle. *Bauh. hiſt.* 437. *Raii hiſt.* 1913. *Cluſ. exot. t.* 176.

Leaves ſomewhat oblong acuminate ſeven-nerved, petioles two-toothed.

3. Piper Cubeba. *Cubebs.*

Lin. ſyſt. 74. *Willd.* 159. *ſuppl.* 90. *Gaertn. fruct.* 2. 67.

P. caudatum. *Beſl. muſ.* 7. *t.* 3.

Cubebæ. *Bauh. hiſt. Ger.* & *Park. Raii hiſt.* 1813.

Leaves obliquely ovate or oblong pointed acute, ſpike ſolitary, pedunckes oppoſite to the leaf, fruits pedicelled.

4. Piper cluſiæfolium.

Lin. ſpec. ed. Willd. 159. *Jacqu. ic. rar. vol.* 2. *t.* 212. *collect.* 3. 209.

Leaves obovate blunt veined, ſpike ſolitary terminating.

5. Piper caſenſe. *Cape Pepper.*

Lin. ſyſt. 74. *Willd.* 160. *ſuppl.* 90.

Leaves ovate nerved acuminate, nerves villoſe.

6. Piper Malamiris.

Lin. ſpec. 41. *Reich.* 1. 75. *Willd.* 160. *fl. zeyl. n.* 28. *Pluk. phyt. t.* 215. *f.* 2.

Sirium. *Rumph. amb.* 5. 336. *t.* 116. *f.* 2.

Amolago. *Rheed. mal.* 7. 31. *t.* 16. *Raii app.* 631.

Leaves ovate ſharpiſh rugged underneath, nerves ſcarce raiſed underneath.

7. Piper diſcolor.

Lin. ſpec. ed. Willd. 160. *Swartz prodr.* 15. *obſer.* 52.

Leaves broad-ovate five-nerved very ſmooth, diſcoloured on the under part, ſpikes more lax, florets more remote.

8. Piper medium.

Lin. ſpec. ed. Willd. 160. *Jacqu. ic. rar. t.* 8. *collect.* 1. 141.

[4] Tranſact. Soc. Arts, vol. 5. for 1787.

[5] Planting, vol. 1. 178 to 181.

Leaves ovate acuminate oblique subcordate at the base five-nerved, spikes axillary nodding.]

9. Piper Amalago. *Rough-leaved Pepper.*
Lin. spec. 41. *Reich.* 1. 76. *Willd.* 160. *Swartz obs.* 19. *Sloan. jam.* 1. 134. *t.* 87. *f.* 1. *Brown. jam.* 121. *n.* 1. *Pluk. phyt. t.* 215. *f.* 2.
Saururus foliis lanceolato-ovatis quinquenerviis rugosis. *Lin. hort. cliff.* 40.
Leaves lanceolate-ovate five-nerved wrinkled.

10. Piper Siriboa.
Lin. spec. 41. *Reich.* 1. 76. *Willd.* 161. *fl. zeyl. n.* 29.
Siriboa. *Rumph. amb.* 5. 340. *t.* 117.
Betela quem Siri-boa vocant. *Bont. jav.* 91. *t.* 91. *Raii hist.* 1913.
Leave cordate commonly seven-nerved veined.

[11. Piper excelsum.
Lin. spec. ed. Willd. 161. *Forst. prodr. n.* 20.
Leaves orbicular-cordate commonly seven-nerved, pedunculs terminating solitary bifid, stem arboreous.

12. Piper longum. *Long Pepper.*
Lin. spec. 41. *Reich.* 1. 76. *Willd.* 161. *fl. zeyl. n.* 30. *mat. med.* 41. *Woodv. med. bot.* 516. *t.* 188. *Plenck, ic. t.* 26. *Blackw. t.* 356. *Rumph. amb.* 5. 335. *t.* 116. *f.* 2. *Pluk. phyt. t.* 104. *f.* 4. *Raii hist.* 1343. *Ger. emac.* 1539. *Park. theat.* 1604.
P. longum orientale. *Bauh. pin.* 412.
Cattu-tirpali. *Rheed. mal.* 7. 27. *t.* 14. *Raii hist.* 3. 640.
Leaves cordate petioled and sessile.

13. Piper methysticum. *Intoxicating Pepper or Ava.*
Lin. spec. ed. Willd. 161. *Forst. prodr. n.* 21. *act. ul.* 76. *n.* 50.
Sirum decumanum. *Rumph. amb.* 5. 45. *t.* 27?
Leaves cordate acuminate many-nerved: spikes axillary solitary very short peduncled spreading very much.

14. Piper latifolium. *Broad-leaved Pepper.*
Lin. spec. ed. Willd. 161. *suppl.* 91. *Forst. prodr. n.* 22.
Leaves orbicular-cordate nine-nerved, spikes axillary aggregate peduncled.

15. Piper decumanum. *Plantain-leaved Pepper.*
Lin. spec. 41. *Reich.* 76. *ed. Willd.* 162.
Piper marginatum. *Jacqu. collect.* 4. 128. *icon. rar.* 2. 215.
Saururus frutescens foliis plantagineis, fructu breviori. *Plum. amer.* 59. *t.* 76. *Raii hist.* 3. 642.
Leaves cordate nine-nerved netted.]

16. Piper reticulatum. *Netted-leaved Pepper.*
Lin. spec. 41. *Reich.* 1. 76. *Willd.* 162. *Swartz obs.* 19.
Saururus botryoides major arborescens, foliis plantagineis. *Plum. amer.* 57. *t.* 76. *Raii hist.* 3. 643. 17.
Jaborandi. *Pis. bras.* 216. *med. bras.* 97.
Leaves cordate seven-nerved netted.

17. Piper aduncum. *Hooked-spiked Pepper.*
Lin. spec. 41. *Reich.* 1. 76. *Willd.* 162. *Jacqu. collect.* 5. *p.* 6. *icon. rar.* 2. 210. *Sloan. jam.* 1. 135. *t.* 87. *f.* 2. *Brown. jam.* 122. *n.* 3.
Saururus foliis ovato-lanceolatis, nervis alternis. *Lin. hort. cliff.* 140.
S. arborescens fructu adunco. *Plum. amer.* 58. *t.* 77. *Raii hist.* 3. 643. 18.
Leaves oblong-ovate acuminate unequal at the base veined, spikes solitary axillary uncinate.

[18. Piper macrophyllum.
Lin. spec. ed. Willd. 163. *Swartz prodr.* 15. *descr.* 54. *Brown. jam.* 122. *n.* 4.
P. longum arboreum fol. latissimis. *Sloan. jam.* 1. 135. *t.* 33. *Raii hist.* 3. 644. 19.
Leaves elliptic-ovate acuminate smooth unequal at the base veined, petiules appendiculed, spikes axillary solitary.

19. Piper geniculatum. *Jointed Pepper.*
Lin. spec. ed. Willd. 163. *Swartz prodr.* 15. *descr.* 57.
Leaves oblong acuminate oblique many-nerved smooth, stem and branches jointed.

20. Piper verrucosum. *Warted Pepper.*
Lin. spec. ed. Willd. 163. *Swartz prodr.* 15. *descr.* 56.
P. tuberculatum. *Jacqu. ic. rar.* 2. *t.* 211? *collect. suppl.* 7?

P. arboreum. *Aubl. guian.* 1. 23.
P. longum arb. foliis latissimis. *Sloan. jam.* 1. 135. *t.* 88. *f.* 1.
Arborescent, leaves oblong acuminate obliquely many-nerved veined smooth coriaceous, stem and branches swarted.

21. Piper hispidum. *Hairy-leaved Pepper.*
Lin. spec. ed. Willd. 163. *Swartz prodr.* 15.
P. hirsutum. *Swartz descr.* 60.
Leaves ovate acuminate obliquely hirsute wrinkled, nerves alternate veined, spikes erect.

22. Piper nitidum. *Shining-leaved Pepper.*
Lin. spec. ed. Willd. 163. *Swartz prodr.* 15. *descr.* 58.
Leaves lanceolate-ovate oblique at the base smooth shining.]

23. Piper pellucidum. *Pellucid-leaved Pepper.*
Lin. spec. 42. *Reich.* 1. 77. *Willd.* 163. *bort. cliff.* 6. *t.* 4. *Jacqu. obs.* 1. 16. *Kniph. orig. cent.* 10. *n.* 70.
Saururus minor procumbens botryitis, folio crasso cordato. *Plum. amer.* 54. *t.* 72. *Raii hist.* 3. 642. 12.
Leaves cordate petioled, stem herbaceous.

[24. Piper alpinum.
Lin. spec. ed. Willd. 164. *Swartz prodr.* 15. *descr.* 62.
Herbaceous, stem erect nearly simple, leaves ovate-roundish acute veinless underneath, spikes axillary.

25. Piper hispidulum.
Lin. spec. ed. Will. 164. *Swartz prodr.* 15. *icon. t.* 4. *descr.* 63.
Herbaceous, almost upright, leaves roundish petioled very thin rough-haired above.

26. Piper tenellum.
Lin. spec. ed. Willd. 164. *Swartz prodr.* 16. *descr.* 65.
Herbaceous simple decumbent, leaves distich ovate veinless ciliate at the edge, spike ascending.

27. Piper acuminatum.
Lin. spec. 42. *Reich.* 1. 77. *Willd.* 164. *Swartz obs.* 20. *Sloan. jam.* 1. 136.
Saururus alius humilis, folio carnoso & acuminato. *Plum. amer.* 54. *t.* 71. *Raii hist.* 3. 643.
Herbaceous, leaves lanceolate-ovate nerved fleshy, stem almost upright.

28. Piper blanium.
Lin. spec. ed. Will. 164. *Jacqu. collect.* 3. 211. *icon. rar.* 2. 218.
Leaves in threes lanceolate acuminate three-nerved ciliate dotted underneath.

29. Piper amplexicaule.
Lin. spec. ed. Willd. 165. *Swartz prodr.* 16. *descr.* 67.
Subherbaceous, leaves lanceolate-ovate embracing nerved fleshy, stem erect simple.

30. Piper pallidum.
Lin. spec. ed. Willd. 165. *Forst. prodr. n.* 24.
Leaves alternate obovate commonly three-nerved, spikes solitary subterminating.]

31. Piper obtusifolium. *Blunt-leaved Pepper.*
Lin. spec. 42. *Reich.* 1. 77. *Willd.* 165. *Trew. ehret.* 54. *t.* 96.
Saururus humilis folio carnoso subrotundo. *Plum. amer.* 53. *t.* 70. *Raii hist.* 3. 643. 14.
Leaves obovate nerveless.

[32. Piper retusum.
Lin. suppl. 91. *spec. ed. Willd.* 165.
Leaves obovate retuse.

33. Piper glabellum.
Lin. spec. ed. Willd. 165. *Swartz prodr.* 16. *descr.* 68.
Herbaceous, leaves ovate acuminate, stem declined rooting very much branched.

34. Piper serpens.
Lin. spec. ed. Willd. 165. *Swartz prodr.* 16. *descr.* 69.
Herbaceous, leaves roundish-acute flat discoloured, stem creeping.

35. Piper cordifolium.
Lin. spec. ed. Willd. 165. *Swartz prodr.* 16. *descr.* 71.

Herbaceous, leaves obcordate petioled plano-convex fleshy, stem creeping.

36. Piper nummularifolium.
Lin. spec. ed. Willd. 166. *Swartz prodr.* 16. *descr.* 72.
Herbaceous, leaves orbicular concavo-convex, stem filiform creeping rooting.

37. Piper rotundifolium.
Lin. spec. 42. *syst.* 74. *Reich.* 1. 77. *Willd.* 166. *Swartz obs.* 20. *Jacqu. obs.* 1. 17. *Sloan. jam.* 1. 137.
Saururus repens, folio orbiculari nummulariæ facie. *Plum. amer.* 52. *t.* 69. *Raii hist.* 3. 641. 7.
S. minimus rep. fol. orbic. tumentibus. *Brown. jam.* 204. *n.* 6.
Herbaceous, leaves roundish flat fleshy, stem filiform creeping.

38. Piper maculosum.
Lin. spec. 42. *Reich.* 1. 77. *Willd.* 166.
Saururus hederaceus caulibus maculosis major. *Plum. amer.* 50. *t.* 66. *Raii hist.* 3. 642. 8.
Leaves peltate ovate.]

39. Piper peltatum.
Lin. spec. 42. *Reich.* 1. 77. *Willd.* 166.
Saururus arborescens, foliis amplis rotundis & umbilicatis. *Plum. amer.* 56. *t.* 74. *Raii hist.* 3. 643. 16.
S. fol. ampl. orbiculato-cordatis peltatis, petiolis vaginantibus. *Brown. jam.* 203. *n.* 2.
Leaves peltate orbicular-cordate blunt repand, spikes umbelled.

[40. Piper subpeltatum.
Lin. spec. ed. Willd. 166.
Lonuba. *Rumph. amb.* 6. 133. *t.* 59. *f.* 1.
Leaves subpeltate orbicular-cordate acuminate, spikes umbelled.

41. Piper distachyon.
Lin. spec. 42. *Reich.* 1. 78. *Willd.* 167. *Swartz obs.* 21.
Saururus hederaceus caulibus maculosis minor. *Plum. amer.* 51. *t.* 67. *Raii hist.* 3. 642. 9.
Leaves ovate acuminate, spikes conjugate, stem rooting.

42. Piper umbellatum. *Umbelled Pepper* or *Santa Maria leaf.*
Lin. spec. 43. *Reich.* 1. 78. *Willd.* 167. *Swartz obs.* 21. *Jacqu. collect.* 2. 335.
Saururus arborescens, foliis amplis cordatis non umbilicatis. *Plum. amer.* 53. *t.* 73. *Raii hist.* 3. 643. 13.
S. fol. ampl. orbiculato-cordatis, sinu aperto, petiolis vaginantibus. *Brown. jam.* 203. 1.
Leaves orbicular-cordate acuminate veined, spikes umbelled, stem erect grooved pubescent.

43. Piper trifolium. *Three-leaved Pepper.*
Lin. spec. 43. *Reich.* 1. 78. *Willd.* 167.
Saururus hederaceus triphyllus, folio rotundo. *Plum. amer.* 52. *t.* 68. *Raii hist.* 3. 641. 6.
Leaves in threes roundish.

44. Piper peltæfolium.
Lin. spec. ed. Willd. 167. *Jacqu. collect.* 4. 126. *icon. rar.* 2. 219.
Leaves in whorls of three or four elliptic three-nerved smooth, spike terminating solitary, stem spotted.

45. Piper polystachyon. *Many-spiked Pepper.*
Lin. spec. ed. Willd. 167. *Ait. kew.* 1. 49.
P. obtusifolium. *Jacqu. collect.* 1. 141. *icon. rar.* 1. *t.* 9.
Leaves in whorls rhomb-ovate quite entire, petioled three-nerved pubescent.

46. Piper quadrifolium.
Lin. spec. 43. *Reich.* 1. 78. *Willd.* 168. *Swartz obs.* 22. *Plum. amer. t.* 242. *f.* 3.
Leaves in fours wedge-form obovate emarginate subsessile, stem erect.

47. Piper verticillatum. *Whorl-leaved Pepper.*
Lin. spec. 43. *Reich.* 1. 78. *Willd.* 168. *amoen.* 5. 391.
Saururus erectus minor, foliis orbiculatis verticillatis tumentibus, spicis terminalibus. *Brown. jam.* 204. *n.* 8.
Leaves in whorls four together elliptic blunt three-nerved.

48. Piper stellatum. *Starry-leaved Pepper.*
Lin. spec. ed. Willd. 168. *Swartz prodr.* 16. *descr.* 74. *Jacqu. collect.* 2. 212. *icon. rar.*

Leaves in whorls three, four or five together oblong acuminate three-nerved.

49. Piper reflexum. *Reflex-leaved Pepper.*
Lin. spec. ed. Willd. 168. *suppl.* 91. *Swartz obs.* 23.
P. tetraphyllum. *Forst. prodr. n.* 25.
Leaves in fours rhombed fleshy reflex and patulous, stem creeping.

50. Piper pulchellum. *Small-leaved Pepper.*
Lin. spec. ed. Willd. 169. *Ait. kew.* 1. 50.
Leaves in fours subsessile oblong nerveless quite entire, stem round, spikes terminating.

51. Piper filiforme.
Lin. spec. ed. Willd. 169. *Swartz prodr.* 16. *icon. t.* 6. *descr.* 73.
Herbaceous, leaves linear blunt, the uppermost in whorls, stem filiform creeping.

Species from Vahl's Eclogæ.

52. Piper ovatum.
Vahl ecl. 1. 3.
Leaves ovate veined many-nerved equal at the base, berries pedicelled distant, branches even.

53. Piper caudatum.
Vahl ecl. 1. 3.
P. caudatum ſ. Nhandu. *Marigr. bras.* 75. *Raii hist.* 1343.
Nhandi. *Pis. bras.* 96. *hist.* 97.
Leaves cordate-nine-nerved veined smooth attenuated with a deep sinus at the base.

54. Piper rugosum.
Vahl ecl. 1. 4.
Leaves ovate-oblong veined smooth nearly equal at the base netted underneath, branches even, petioles simple.

55. Piper æquale.
Vahl ecl. 1. 4.
Leaves elliptic-lanceolate veined attenuated equal at the base smooth, branches even knee-jointed.

56. Piper præmorium.
Vahl ecl. 1. 4. *Rotboell surin.* 16.
Leaves lanceolate-elliptic attenuated smooth, shorter on one side at the base, spikes recurved at top.

57. Piper obovatum.
Vahl ecl. 1. 5.
Leaves in threes petioled obovate emarginate smooth, stem creeping.

58. Piper microstachyum.
Vahl ecl. 2. 3.
Leaves oblong acuminate equal at the base veined underneath, spikes very short mucronate.

59. Piper grande.
Vahl ecl. 2. 3.
Leaves ovate-oblong acuminate many-nerved, equal at the base and petioles.

60. Piper scabrum.
Swartz descr. 59.
Leaves broad-ovate acuminate oblique wrinkled rugged, spikes erect.

DESCRIPTIONS, &c.

Moſt of the Peppers are perennial. Stems herbaceous or fruteſcent, often ſcandent and dichotomous; the branches as it were jointed. Leaves on an embracing petiole, moſt alternate, others oppoſite, with one of them frequently caducous or abortive. Spikes axillary when the leaves are oppoſite, oppoſite when the leaves are alternate, commonly ſolitary and naked, ſeldom ſeveral in bundles, and accompanied with bractes, as in *Piper peltatum* and *umbellatum**.

Forſter remarks, that in many ſpecies the number of ſtamens is indeterminate: and that the number and forms of the ſtigmas differ in moſt. Loureiro alſo obſerved the difference of the ſtigmas to be variable, but not to recede much from the number three. In thoſe ſorts which have a ſeparate fruit he remarked two ſtamens; but in thoſe which have a concrete fruit, lengthened out into a ſpike like a mouſe's tail, ſuch as are enumerated by Linnæus from Plumier, and by Aublet, he could not number the ſtamens even with a microſcope, and he doubts whether any one ever numbered them. Both he and Juſſieu heſitate to admit

* Juſſieu. gen.

theſe as ſpecies of Piper. The numerous ſpecies of this genus are natives of the Eaſt and Weſt Indies, a few of the iſlands in the South Seas, two or three of the Cape of Good Hope, none of Europe.

1. Stem ſhrubby, very long, round, ſmooth, jointed, ſwelling towards each joint, ſlender, branched, ſcandent or trailing, rooting at the joints. Leaves acuminate, quite entire, equal at the baſe, flattiſh, bent back a little at the top and edges, alternate, of a dark green colour, at the joints of the branches upon ſtrong ſheath-like footſtalks. Flowers ſeſſile, lateral and terminating, in ſimple, longiſh ſpikes, oppoſite to the leaves. Calyx always four-leaved, imbricate: leaflets thick, concave, very blunt, unequal. Filaments two, awl-ſhaped, flat, equal to the calyx, and hid by its leaflets. Anthers ovate, prominent above the calyx. Germ globular, ſuperior. Stigmas ſeſſile, commonly four, ſometimes but ſeldom three or five, oblong, reflex, ſharp. Berry globular, of a red brown colour[f].

Black Pepper grows ſpontaneouſly in the Eaſt Indies and Cochinchina. It is cultivated with ſuch ſucceſs in Malacca, Java, and eſpecially in Sumatra, that it is thence exported to every part of the world, where a regular commerce has been eſtabliſhed. It is exported alſo from Cochinchina.

White Pepper was formerly thought to be a different ſpecies from the Black; but it is nothing more than the ripe berries deprived of their ſkin, by ſteeping them about a fortnight in water; after which they are dried in the ſun. The berries falling to the ground when over-ripe loſe their outer coat, and are ſold as an inferior ſort of White Pepper.

Black Pepper is the hotteſt and ſtrongeſt, and moſt commonly uſed for medicinal as well as culinary purpoſes. It differs from moſt of the other ſpices in this, that its pungency reſides not in the volatile parts or eſſential oil, but in a ſubſtance of a more fixed kind, which does not riſe in the heat of boiling water. This fixed ſubſtance is probably the reſinous part: the aromatic odorous matter ſeems to depend upon the eſſential oil. The diſtilled oil ſmells ſtrongly of the Pepper, but has very little acrimony; the remaining decoction inſpiſſated yields an extract of conſiderable pungency. A tincture made in rectified ſpirit is extremely hot and fiery.

Some have ſuppoſed Pepper to be leſs heating to the ſyſtem than other aromatics. It is generally uſed as an aromatic and ſtimulant, and has been ſucceſsfully employed in ſome caſes of vertigo, in paralytic and arthritic diſorders. Given in large doſes, it has been found a remedy for intermittents; but it is ſaid, in ſome inſtances to have produced fatal conſequences, in this diſorder[g].

Loureiro has a ſpecies, which he calls *Piper ſylveſtre*, growing wild in the woods of Cochinchina, but not applied to any purpoſe. He ſuſpects it to be the ſame with Piper caninum of Rumphius (*l. 7. c. 26. t. 28. f. 2.*)

He has alſo a ſecond ſpecies, with pinnate leaves, conſiſting of three pairs of leaflets; which he therefore names *Piper pinnatum*. The ſtem is erect and prickly. He propoſes this ſpecies with doubt, becauſe he had no opportunity of examining the plant whilſt it was in flower. In China, where it grows naturally, both leaves and fruit are applied to culinary uſes: it is alſo uſed medicinally.

2. Stems ſmooth and even, ſtriated, angular. Leaves acuminate, a little oblique at the baſe; the three middle of the ſeven nerves run to the end of the leaf, the outmoſt are very ſhort. Peduncle longer than the petiole, and oppoſite to it. Spike cylindrical, frequently together with the peduncle pendulous. Petiole channelled at the baſe[h].

Stem ſhrubby, manifold, very long, trailing and rooting at the joints. Leaves unequal at the baſe, curved in, veined, ſhining, alternate, aromatic, hotriſh; the petioles ſeldom two-toothed. Spike ſlender, long, ſolid: peduncle ſolitary, ſimple, oppoſite to the leaf. Stigmas four or five, linear, ſeſſile, ſpreading out. Berries flatted-angular, united, half-concealed, inſeparable[i].

Native of the Eaſt Indies.

It is the leaf of this ſpecies of Pepper plant which is called Betle or Betel, and ſerves to incloſe a few ſlices or bits of the Areca, thence erroneouſly called the Betel-nut, theſe together with a little Chunam or ſhell-lime are what the ſouthern Aſiatics ſo univerſally chew to ſweeten the breath and ſtrengthen the ſtomach: the lower people there uſe it as ours do tobacco in Europe to keep off the calls of hunger. The conſumption of Betel is ſo great in the Eaſt as to occaſion a conſiderable branch of commerce: it is there deemed the height of unpoliteneſs to ſpeak to a ſuperior without ſome of it in the mouth. The women of Canara on the Malabar coaſt ſtain their teeth black with Antimony, and thus preſerve them good to old age; whereas the contrary is the caſe with the men, who ruin theirs by the Betel, and the Chunam or lime, which they take along with it. Ulloa aſſerts that the Coca (or Koka) of Peru is the ſame with the Betel[k].

3. This is a very ſmooth ſhrub, with a jointed flexuoſe ſtem. Leaves moſtly oblong, ſeldom ovate or lanceolate, not tender as in moſt ſpecies of this genus, quite entire, petioled, veined; the veins ſimple, alternate; the margin of the leaf does not run down ſo far on one ſide as on the other. Spikes ſolitary, peduncled, ſhort, on which are thoſe pedicelled berries known in the ſhops and the kitchen by the name of *Cubebs*[l].

The berry is fleſhy, globular, obſcurely umbilicate at top, red or when old of a ſmoky colour, ſmooth, one celled: pulp moderately thick, finally drying up into a coriaceous pellicle. Seed ſingle, ſubglobular, umbilicate at top with a ſmall excavation, ferruginous-brown, a little wrinkled: cover ſingle, membranaceous, faſtened cloſely to the albumen; which is of the ſame ſhape with the ſeed, ſomewhat granular, friable, pale yellow, aromatic, acrid, having a very ſmall excavation near the top: embryo very minute, inverted, milky, placed in the proper cavity of the albumen, which is cloſed only by the integument, as in the Palms: cotyledons two very minute, papillary, diverging: radicle diſcoid with a middle point, ſuperior, faſtened to the cover of the ſeed[m].

Native of the iſland of Java, in woods. Bergius alſo communicated it from Guinea.

4. The whole of this is ſmooth. Stem perennial, thicker than a quill, branched, a foot high, at firſt upright, but afterwards becoming decumbent from the weight of leaves and branches, and throwing out roots from the joints; by which perhaps in its native ſoil it faſtens itſelf to trees. Leaves alternate, quite entire, ſometimes emarginate, thick, ſomewhat fleſhy, obſcurely veined, nerveleſs, very dark green with the edges ſometimes of a dirty blood colour, on very ſhort petioles, channelled at the baſe, with the nerve at the back projecting; they are about four inches in length. Spike round, upright, green, four inches long, about half the thickneſs of a quill; on a peduncle an inch in length, purpliſh, jointed at the baſe, and often rolled back at the top. Anthers oblong, grooved, brown, ſeſſile. Germ green, ending in an acute erect little bracte. Stigmas three, oblong, brown, ſomewhat hiſpid, ſeſſile on the outſide at the baſe of the bracte.—Native of the Weſt Indies[n].

5. This is diſtinguiſhed from the other larger ſpecies of the genus, which it reſembles very much, by having the veins of the leaves villoſe on the lower ſurface.

Found at the Cape of Good Hope by Thunberg[o].

6. Stems round, ſtriated, twining. Leaves thin, green above, ſubcinereous-rugged underneath: they have five nerves, and no more, not at all raiſed above: the petioles are round[p].—Native both of the Eaſt and Weſt Indies.

7. This is a ſhrub, a fathom in height, with alternate, erect, ſubdivided, jointed, round, ſmooth branches.

[f] Loureiro. [g] Woodville. [h] Linn. zeyl. [i] Linn. ſuppl. [k] M. S information from Rev. G. Aſhby. [l] Gærtner. [m] Jacquin. [n] Linn. ſuppl. [o] Linn. zeyl. [p] Linn. zeyl.

Leaves alternate, broad-cordate or ovate, with a blunt point, entire, thickiſh, veined, whitiſh or very pale green underneath, ſhining; two of the five nerves are marginal: joints ſwelling: petioles channelled, ſhort. Spikes pedicelled, ſolitary, oppoſite to the petiole, ſhorter than the leaves, ſlender. Peduncles longer than the petioles, round, ſmooth. There is no calyx, but an oblong ſcale, within which are two very ſhort evaneſcent filaments, and two obovate, whitiſh anthers. Germ oblong, within the ſcale: ſtyle ſhort, thickiſh: ſtigmas three, ſmall, acute. Berry minute, oblongiſh. It is diſtinct from *P. Amalago* in its wide very ſmooth leaves, looſer ſpikes, and more remote flowers.

Native of high mountains in Jamaica; flowering in autumn.

It varies with leaves attenuated at the baſe, and blunt, ovate, oblique [1].

8. This ſpecies is ſufficiently different from *P. decumanum* and *reticulatum*, on account of the five-nerved leaves, and the baſe of the leaves being very ſhortly and not always cordate. It ſeems more allied to the next ſucceeding ſpecies; but differs from that in having the leaves ſubcordate at the baſe, oblique and not ſo roundly ovate [2].

It has ſeveral trunks, eight feet high, two inches in diameter at the baſe, upright, jointed, knobbed, aſh-coloured. Branches numerous, round, ſwelling at the joints. Leaves alternate, three or five-nerved, quite entire, ſmooth, netted underneath with tranſverſe veins, petioled, having a bitteriſh aromatic taſte, and the ſame ſmell when bruiſed. Spikes ſolitary, peduncled, ſlender, oppoſite to a leaf, upright, three or four inches long. Germ angular. Stigma triple, quadruple or quintuple. Anthers from two to five, ſurrounding the germ in no fixed ſituation. It ſeems to be a middle ſpecies between *decumanum* and *reticulatum*, and derives its trivial name from that circumſtance.—The native country is unknown [3].

9. This is a ſhrub from three to ten feet in height. Stem even: branches dichotomous, jointed, ſubdivided, round, browniſh green. Leaves alternate, acuminate, not obſique, nerved and veined, very thin, bright green, ſmooth, paler underneath. Petioles round, ſmooth. Joints ſwelling. Spikes peduncled, oppoſite to the leaves, filiform, looſe, many-flowered. Flowers cluſtered. No calyx, corolla, or filament. Anthers from two to four, at the baſe of the germ, cordate-ovate, ſeſſile, two-celled. Germ ovate: ſtyle none: ſtigmas three, oblong, ſeſſile. Berry ſeſſile, containing a ſingle ſeed, double the ſize of Hemp-ſeed, black when ripe, of a taſte ſlightly pungent [4].

It has ſeveral crooked ſtems, which riſe to the height of twelve or fourteen feet, are jointed, hollow and pithy; they divide into many ſmall branches. Leaves three inches and a half long, and one inch and a half broad, and rough. Spikes at the end of the branches, ſlender, three inches long, having many ſmall ſeſſile flowers, ſucceeded by ſmall berries.

[Browne calls it ſmall-grained Black Pepper, and ſays that it grows very common in moſt of the hilly parts of Jamaica, looking very buſhy, and ſpreading on account of its ſlender flexile branches; it begins to divide very near the root, and riſes in tufts, frequently to the height of ſix or eight feet or more. The berries differ from the Black Pepper of the Eaſt Indies only in ſize, being ſeldom bigger than a large Muſtard ſeed; but the taſte and flavour is in every reſpect the ſame: the leaves and growth of the ſhrub very nearly reſemble that deſcribed in the Hortus Malabaricus, but the plant is neither ſo luxuriant nor ſucculent.

Browne uſed it for many months, and could not perceive any ſenſible difference between it and that of the Eaſt either in cookery or ſeaſoning.

It ſhould be picked when full grown, but before it ripens; for, like the Pimento and other ſpicy grains, it grows ſoft and ſucculent by maturity, and demits the pungent flavour: it may then be dried in the ſun like the Pimento, and left adhering to the ſpikes, which ſeem to have the ſame flavour and pungency with the grain itſelf, and are as eaſily ground in the mill.

The leaves and tender ſhoots are uſed in diſcutient baths and fomentations, and ſometimes are pounded and applied to foul ulcers: the root is warm, and may be ſucceſsfully adminiſtered as a reſolutive, ſudorific or diaphoretic; but it anſwers beſt in infuſions or light decoctions, which may be varied in ſtrength as occaſion requires. There is no deobſtruent of this nature that anſwers better in dropſies, or lighter obſtructions from a lentor or inertion.

Native not only of Jamaica but of Hiſpaniola, Barbadoes, and probably other parts of the Weſt Indies. Cultivated by Mr. Miller in 1759 [5].

10. Stem even, not very hard. Leaves alternate, a ſpan long, petioled, acute; nerves alternate (ſeven or) nine; the three inner ones running to the tip; the outmoſt very ſhort, the reſt gradually longer; all with anaſtomozing veins. Peduncle oppoſite to the petiole. Spike ſlender, narrow. Petioles round, not ſheathing [6].]

Stems hollow, ſhrubby, about four feet high, dividing into many ſmall branches. Leaves about five inches long, and four broad near their baſe, ending in long acute points; they have ſeven veins at the baſe, but the two outer ſoon diverge to the borders of the leaves, and unite with them, the other five are extended almoſt to the length of the leaves, diverging from the midrib towards the ſides, and unite near the top. The ſpikes come out from the ſide of the branches; they are ſlender, and about four inches long, bending in the middle like a bow, and are cloſely ſet with ſmall herbaceous flowers, which are ſucceeded by ſmall berries, incloſing a ſingle ſeed. Mr. Robert Millar ſent it from Panama.

[Native of the Eaſt Indies, and New Caledonia. Cultivated by Mr. Miller in 1759.

11. Native of New Zealand [7].

12. Stems ſhrubby, round, ſmooth, branched, ſlender, climbing, but not to any conſiderable height. Leaves differing much in ſize and form; but commonly heart-ſhaped, pointed, entire, ſmooth, nerved, deep green, alternate. Flowers ſmall, in ſhort denſe terminating ſpikes, which are nearly cylindrical [8].

Linnæus remarks, that this ſpecies has the appearance of *Ariſtolochia Piſtolochia*; that the petioles of the leaves are quite ſimple; that the upper leaves are very oblong, often ſeſſile, blunter and narrower than the lower ones, and ſome embracing; and that the branches are dichotomous [9].

Native of the Eaſt Indies, eſpecially Java, Malabar and Bengal.

The berries are very ſmall, and lodged in a pulpy matter: like thoſe of Black Pepper they are firſt green, and become red when ripe: they are hotteſt to the taſte in the immature ſtate, and are therefore gathered whilſt green, and dried in the ſun; when they change to a blackiſh or dark gray colour.

Dr. Cullen obſerves, that long Pepper has the ſame qualities with the Black, but in a weaker degree. Bergius alſo judges Black Pepper to be hotter than this. The contrary however is aſſerted by Lewis and Murray [10].

13. Stem dichotomous, ſpotted, attaining the height of a fathom. Leaves oblong-cordate, not roundiſh-cordate, as in the next ſpecies. Spikes ſtraight, ſhort, ſolitary, and not aggregate, long, nodding, as in that.

The root of this plant bruiſed, or more frequently chewed in the mouth, and mixed with the ſaliva, yields that naſeous, hot, intoxicating juice, which is ſo acceptable to the natives of the South Sea iſlands, and is ſpoken of with ſo much deteſtation by our voyagers. They pour the liquor of the Cocoa-nut or pure water into it; but the leſs it is diluted, the more this acrid, poiſonous, naſeous beverage is eſteemed among the chiefs, to whom the uſe of it is moſtly confined, becauſe they become intoxicated, and then fall aſleep the ſooner. The conſequences of uſing

[1] Swartz deſcr. [2] Willdenow. [3] Jacquin. [4] Swartz obſ. [5] Hort. kew. [6] Linn. zeyl. [7] Forſter. [8] Woodville. [9] Linn. zeyl. [10] Woodville.

this deteſtable liquor too freely are deſcribed as dreadful. The eyes and the whole body are enflamed, the ſkin becomes parched up, exfoliates in ſcales, and throws out leprous ulcers, till at length decay and conſumption enſue: and yet even thoſe who are accuſtomed to it, cannot take the naufeous draught without making wry faces, and their limbs quaking with horror. In Otaheite it is called *Ava*, in the Friendly and Sandwich iſlands, with a ſtrong aſpiration *Kava*. It is cultivated in all the iſlands of the South Sea, except the New Hebrides and New Caledonia[a].

14. Leaves large, roundiſh, deeply cordate, acute, quite entire, very ſmooth, tender, with from eleven to thirteen nerves. Petioles dilated at the baſe and embracing. Spikes five or more[c].

Native of the Society and Friendly iſlands, the New Hebrides, in ſhort of almoſt all the iſlands of the South Sea, within the Tropics. It has none of that intoxicating quality which P. methyſticum poſſeſſes, nor is it ever put to any uſe by the natives[a].

15. Stems ſeveral, ſhrubby, upright, branched, ſmooth, a little knobbed, the height of a man and more, an inch and upwards in thickneſs at the baſe, when old brown, when young green. Leaves alternate, cordate, acuminate, quite entire, having nine or eleven nerves, ſomewhat villoſe on the veins when examined by a glaſs, in other parts ſmooth, the longer ones a foot in length including the petioles; theſe are winged with a pale channelled membrane, in the longer leaves four inches in length. Spikes oppoſite to a leaf, ſolitary, round, three inches long, upright, ſlender, pale, on a green peduncle an inch in length. Anthers twin, grooved, firſt pale yellow, then brown. Germ roundiſh, with a ciliate ſtigma occupying its upper margin. When adult it throws out roots from the joints. It has an aromatic ſmell, but an unpleaſant taſte[f].

Linnæus remarks, that it is ſo nearly allied to *reticulatum*, as almoſt to ſeem a variety; and that it is a native of both Indies. Jacquin aſcribes it to the Caraccas[g].

16. This is a ſhrub, a fathom in height and more. Stem round, upright, ſmooth. Branches ſomewhat jointed. Leaves alternate, large, conſiate-rounded, acuminate, nine-nerved, ſmooth. Petioles ſmooth, ſtriated, ſheathing. Spikes long, pedunculed, oppoſite to the leaves, round, upright. Peduncles ſhorter than the petioles. Stamens and piſtils inſerted ſpirally into the ſpike. Filaments ſcarcely any. Anthers two, ſubſeſſile, opening tranſverſely at top. Germs under the anthers. Styles three, thickiſh. Stigmas blunt[h].]

Stem about five feet high, ſending out ſeveral ſide branches which have protuberant joints. Leaves ſix inches long and five broad near their baſe: they have five veins ſpringing from the foot-ſtalk, the middle one going in a direct line to the point; the two ſide veins diverge towards the edges of the leaves in the middle, but approach again at the top; the ſurface of the leaves is full of ſmall veins, which form a ſort of net-work. The ſpikes come out from the ſide of the branches oppoſite to the leaves; they are ſlender, and about five inches long, a little bending in the middle, and are cloſely ſet with very ſmall herbaceous flowers.

Native of Jamaica, [Martinico, Hiſpaniola, Braſil. Cultivated by Mr. Miller in 1759.

17. Stems ſeveral, ſhrubby, round, knobbed at the joints, ſmooth, an inch and more in thickneſs, branched, aſh-coloured, upright, eight feet high. Branchlets green, the thickneſs of a quill, ſpreading very much. Leaves alternate, on ſhort petioles, in a double row, a little ſhorter at the inner baſe, deep green above, rugged backwards, rough-haired when examined by a glaſs; underneath pale green, villoſe but not rugged; quite entire, netted with numerous veins, many-nerved if the principal veins be conſidered as nerves; they are about half a foot in length, and have little taſte or ſmell. Stipulæ lanceolate, acute, converging, ſmooth, ſtriated, caducous. Peduncles alternate, oppoſite to a leaf, ſolitary, erect, round, ſomewhat villoſe, half an inch long. Spikes ſolitary, ſlender, yelloviſh, two or three inches in length, towards the origin of the branchlet bowed, ſo cloſely covered with minute fructifications, that it is ſcarcely poſſible to detect their ſtructure even with a microſcope[i].]

Stalks many, hollow, about five feet high, with joints pretty cloſe and protuberant; they divide into ſmaller branches. Leaves ſeven inches long, and three broad in the middle, rough; the veins come out alternately from the midrib, diverging to the ſides, and join the borders of the leaf at the top. The ſpikes of flowers come out from the ſide of the branches, oppoſite to the leaves; they are ſlender, five inches long and incurved, cloſely ſet with flowers their whole length. It is called Spaniſh Elder in Jamaica, of which iſland it is a native, [as alſo of Barbadoes, Dominico, and the Caraccas. Cultivated by Mr. Miller in 1759.

18. This is a large ſhrub, two fathoms in height. Stem round, ſtriated. Branches almoſt erect, ſmooth. Leaves alternate, large, bluntly acuminate, oblique at the baſe, having ten or twelve nerves tranſverſely oblique, veined, quite entire. Petioles ſhort, broadiſh, channelled, membranaceous with a leafy margin, appendicled at the baſe of the leaf. Spikes pedicelled, long, erect, oppoſite to the leaves. Flowers very cloſe, not diſtinct. Filaments four to ſix, very ſhort, or elſe the anthers ſeſſile, twin, round the germ. Styles none. Stigmas three ſeſſile. The ſtem and branches are leſs brittle than in the other ſpecies.

Native of the Weſt Indies, on rocky mountains: Jamaica, Martinico, &c.

19. This ſhrub is alſo two fathoms high and more. Stem ſubdivided towards the top, round, ſmooth. Branches and branchlets long, rod-like, round, ſmooth, very brittle. Joints ſwelling. Leaves alternate, half a foot long and more, attenuated but blunt at the top, rounded and unequal at the baſe, entire. Petioles ſhort, channelled, ſmooth. Spikes ſolitary, oppoſite to the leaves, long, pedicelled. Flowers ſpiral, as in *P. verrucoſum*. Stem, though often thick, yet ſo weak as to require ſupport from other ſhrubs. It is diſtinguiſhed from *P. macrophyllum*, which it reſembles very much, by its jointed habit, brittleneſs, &c.—from *P. verrucoſum*, by its joints, thinner leaves, and even ſtem and branches.—Native of Jamaica, in ſtony woods[k].

20. This is a tree the trunk of which is from fifteen to twenty feet in height, upright, with the bark much warted. Branches ſimple, terminating, leafy, round, with white warts. Leaves ovate, acuminate, blunt, alternate, veined, the margin rolled in; the largeſt from one foot to two feet in length. Petioles ſhort, channelled, with the margins at the baſe of the leaf membranaceous, warted. Spikes pedicelled, half a foot long, oppoſite to the leaf, upright. Flowers in a ſpiral, the males and females in a manner diſtinct. Germs between the upper and lower circuit of ſtamens. Anthers two ovate, placed obliquely. Stigmas three, ſeſſile. It is known by its habit, its warted ſtem and branches, and its large coriaceous leaves.

Native of Jamaica, on calcareous rocks in the interior of the iſland[l]: Guiana, &c.

21. This is a ſhrub: the ſtem is a fathom in height, upright, round, hirſute, hiſpid. Branches patulous, flexuoſe, jointed, round, hirſute: joints hirſute and hiſpid. Leaves alternate, many-nerved, hirſute, hiſpid; nerves alternate, raiſed on the back of the leaf: petioles ſhort, round, not channelled. Spikes pedicelled, oppoſite to the leaves, ſolitary, two inches long, cylindrical, thick, brown. Peduncles thick, round, hiſpid, ſhorter than the petioles. Flowers aggregate. Calyx none: but ſmall, roundiſh, ciliate ſcales; by the ſides of which are two very ſhort filaments. Anthers extremely minute, roundiſh, twin. Germ ovate. Styles none. Stigmas three, reflex, very ſmall. Berry ſeſſile, roundiſh, very ſmall. It differs from *P. ſcabrum* by its remarkable hirſute and hiſpid habit. To avoid being confounded with *P. hiſpidulum*, Swartz changed

[a] Forſter. Cook's laſt voy. 1. 318.
[c] Linn. ſuppl. [f] Forſter. [g] Jacquin. [h] Swartz obſ. [i] Collect. [k] Jacquin. [l] Swartz deſcr. [m] Idem.

the name from *hiſpidum*, which he firſt gave it, to *hirſutum*.

Native of Jamaica, on the cooler mountains; flowering in autumn.

22. This alſo is a ſhrub, the height of a man, very much branched, with a ſmooth round trunk. Branches and branchlets always jointed at the inſertion of the leaves, brittle. Leaves alternate, oblique at the baſe on the outer ſide, veined, dark green, from two to three inches long. Petioles very ſhort, round. Spikes peduncled, ſhortiſh, round, upright, very even, whitiſh. Peduncles oppoſite to the leaves, ſhort. Flowers very much crowded.

Native of Jamaica, in mountain woods; flowering in ſpring *.]

23. This is annual. Stalks ſucculent, ſeven or eight inches high. Leaves an inch and half long, and three quarters of an inch broad. The ſpikes of flowers come out at the end of the ſtalks; they are ſlender, about an inch long and ſtraight; the flowers are very ſmall, and ſeſſile, appear in july, and are ſucceeded by very ſmall berries, each containing a ſmall ſeed like duſt.

[Native of South America and the iſlands, on the gravelly banks of torrents and rivers, being fond of moiſture. In Martinico they eat the leaves as ſalad, with lettuce or alone, with oil and vinegar, and call it Creſſon; but it has too powerful a ſmell and taſte to be agreeable to Europeans *. It was cultivated in 1759 by Mr. Miller; and flowers from april to ſeptember *.

24. This is a herbaceous plant, with filiform, deſcending, ſimple roots. Stem about a foot high, round, ſucculent, ſmooth. Leaves rather large, entire, nerved, ſmooth on both ſides, paler underneath, thickiſh. Petioles longiſh, compreſſed, ſmooth, widening at the baſe. Spikes ſolitary, the length of the leaves, round, thick, with the flowers cloſe. Calyx none, but lanceolate, acute ſcales. Filaments two, very ſhort, at the baſe of the piſtil. Anthers very ſmall, whitiſh. Germ oblong, acuminate. Style ſimple. Stigma acute. It is diſtinct from *P. obtuſifolium*, which has a creeping ſtem.

Native of the higheſt mountains of Jamaica. It flowers in february and march.

25. This alſo is a herbaceous plant, ſmall and bright green. Roots ſmall, capillary, divided, whitiſh. Stem two or three inches high, jointed, diffuſed, round, ſtriated, ſmooth, pellucid, ſucculent, brittle. Branchlets diffuſed, oppoſite to the leaves. Leaves alternate, emarginate at the baſe, entire, veined, green above and ſomewhat hiſpid with pale pellucid briſtles thinly ſcattered over them, dotted, beneath very ſmooth, paler, very tender. Petioles ſhort. Spikes minute, pedicelled, oppoſite to the leaves, ſolitary. Flowers very minute, naked, diſtant. Calyx none, but ſcales ſcarcely viſible at the baſe of the germ. Filaments two by the ſide of the germ at its baſe, very minute, patulous, horizontal, in a manner club-ſhaped. Anthers roundiſh, whitiſh. Germ oblong, hiſpid. Style thick, ſhort. Stigma blunt, brown. Fruit pedicelled, the ſize of a ſmall pin's head, roundiſh, black, ſomewhat hirſute-hiſpid. It is very diſtinct from *P. pellucidum*, in its tenderneſs, leaves, pubeſcence and flowers. The taſte alſo is bitter, not aromatic.

Native of Jamaica, in moiſt woods on the blue mountains. It is an annual plant, and flowers early in the ſpring.

26. This alſo is a herbaceous plant. Root ſmall, annual, ſimple, filamentoſe. Stem three or four inches high, very ſeldom divided, jointed, round, ſcarcely ſtriated, ſomewhat hirſute, having very minute red dots on it, and a ſcattered ſhagginеſs among the petioles, grooved, brittle. Leaves ſmall, on very ſhort petioles, alternate, attenuated towards the top, blunt, entire, veinleſs, nerveleſs, briſtly-ciliate on the upper ſurface towards the edge, ſomewhat ſucculent, ſmooth, pale underneath. Spike terminating, filiform, ſimple. Flowers very minute. Calyx none; but a roundiſh little ſcale covering the germ; by the ſides of which are two filaments, the length of the germ, upright. Anthers roundiſh, twin, white. Germ oblong, attenuated at the baſe. Style none. Stigma villoſe, oblique. Berry on a pedicel three times as long as the germ, containing one ſeed; when ripe it is the ſize of a ſmall pin's head, of a blackiſh colour, and an aromatic flavour.

Native of Jamaica, on the cool mountains, on trunks of trees, eſpecially ſuch as are rotten, hanging down among the moſs, and flowering in ſummer *.

27. Native of South America, in moiſt woods, commonly on the trunks of rotten trees *.

28. Stems ſeveral, a foot and half high, almoſt upright, weak, fleſhy, villoſe, thicker than a quill, round, blood-red, at top flexuoſe and branched; branches alternate, oppoſite or in threes. Leaves petioled, acute, quite entire, thickiſh, flat, villoſe on both ſides and at the edges, dark green above, underneath almoſt veinleſs and very pale green with the edges blood-red; on the middle of the ſtalk the nerves are alſo blood-red; the larger ones are four inches in length; the loweſt are much leſs, and entirely blood-red underneath. Spikes ſmooth, filiform, almoſt upright, green, from one to four inches in length, both ſolitary from the axils, and terminating from two to four, and ſometimes one or two oppoſite to a leaf. Bractes or orbicular pale green ſcales cloſely ſurround the ſpikes, from the upper edge of which come out the ovate germs, bearded at the top, and below the beard is the villoſe brown ſtigma. At the baſe of the germ on each ſide is an antheriferous little bractе.

Native of the Caracas *.

29. This is a ſubherbaceous plant. Stem almoſt ſimple, a foot high, hardiſh, ſlightly flexuoſe, angular, compreſſed, grooved, ſmooth, rigid. Leaves alternate, narrower below, blunt at the tip, quite entire, thickiſh, bright green. Peduncles ſubterminating, axillary, ſolitary, erect; on very long, nearly upright, round ſpikes, ſometimes conjugate. Flowers very minute. It is eaſily diſtinguiſhed by the leaves embracing the ſtem.

Native of Jamaica and other iſlands of the Weſt Indies, on rotten trees, and among the remains of thoſe which have fallen *.

30. Native of the Society iſles *.]

31. This ſends out from the root many ſucculent herbaceous ſtalks almoſt as large as a man's little finger; they are jointed, and divide into many branches, never riſing above a foot high, but generally ſpread near the ground, putting out roots at each joint, propagate very faſt, and ſoon cover a large ſpace of ground. The leaves are very thick and ſucculent; they are about three inches long and two broad, very ſmooth and entire. The pedunele comes out at the end of the branches; this is alſo very ſucculent, and the whole length, including the ſpike, is about ſeven inches. The ſpike is ſtraight, erect, and about the ſize of a gooſe-quill, cloſely covered with ſmall flowers which require a glaſs to be diſtinguiſhed, the whole ſpike much reſembles the tail of a lizard, for which Plumier gave it the name of Saururus.

It is a native of South America, and many of the iſlands in the Weſt Indies: [was cultivated by Mr. Miller in 1739; and flowers from april to ſeptember *.

32. Found at the Cape of Good Hope by Thunberg *.

33. This is a herbaceous plant. Stems very long, crowded, procumbent or declining, rooting, leafy, roundiſh, even. Leaves alternate, quite entire, flat, thickiſh, even. Nerves five, diſtinct at the back of the leaf. Petioles channelled, ſhortiſh, red at the baſe. Spikes filiform, nearly upright, ſometimes hooked, terminating or lateral, oppoſite to the petioles, peduncled, ſolitary or conjugate. The colour of the whole plant is pale green. It is nearly allied to *P. acuminatum*; but differs in having a weak ſtem, very much branched, ſomewhat creeping and rooting; the leaves ovate, acuminate, leſs and not ſo thick; ſpikes ſmaller, ſhorter.

* Swartz deſcr. ᵐ Jacqu. obſ. ⁿ Hort. kew. ᵖ Plumier. ᵠ Jacquin. ʳ Swartz deſcr. ˢ Forſter. ᵗ Hort. kew. ᵘ Linn. ſuppl.

Native of Jamaica and other iſlands of the Weſt Indies; flowering in the ſpring.

Piper ſcandens of the Prodromus is a variety of this.

34. This alſo is herbaceous. Stem puts forth capillary fibres on every ſide; is filiform, ſubdivided, angular, ſmooth, leafy. Leaves alternate, roundiſh, but greater in width than length, retuſe as it were at the baſe, blunt with a very ſhort point, half an inch in breadth, entire, flat, ſomewhat ſucculent, veinleſs, ſmooth on both ſides, paler underneath. Petioles ſhorter than the leaves, ſpreading, round, ſmooth. Spikes peduncled, round, half an inch in length, upright. Peduncles axillary, longer than the leaves, round, ſmooth, ſolitary. Flowers ſo minute as not to be diſtinguiſhed by the naked eye, ſeparated by ovate ſcales. Filaments ſcarcely any. Anthers two by the ſide of the germ. Germ ovate, acute. Style none. Stigmas three. Fruit very minute, ovate, acute, ſeſſile.

It may be diſtinguiſhed from *P. rotundifolium* by the leaves not being orbiculate or ovate; the ſtem not divaricate, but more ſimple and thicker; the leaves underneath pale and thicker; broad-ovate at the baſe, with a very ſhort point.

Native of Jamaica, in rocky woods among moſs.

35. This alſo is herbaceous.[a] Stem filiform, climbing, rooting, divaricate, round, ſucculent. Leaves alternate, entire, ſmooth. Petioles longiſh, reflex. Spikes on the lateral branches pedicelled, oppoſite to the leaves, filiform, an inch long, ſolitary. Peduncles ſhorter than the ſpikes. Flowers very minute, whitiſh. The whole plant has a ſharp taſte. It is very diſtinct from the others in the leaves.

Native of Jamaica, in old woods, on decaying trees.

36. Herbaceous. Stems two or three feet long, ſubdivided, roundiſh, very ſmooth, ſoft. Leaves petioled, alternate, ſmall, ſhining, ſomewhat ſucculent, very minutely hairy on the entire margin. Spikes peduncled, terminating, ſhort. Peduncles ſcarcely longer than the leaves, upright. Flowers hardly diſcernible, whitiſh. It reſembles *P. rotundifolium*, but differs in having a filiform, divaricating ſtem, and orbicular concavo-convex leaves.

Native of the interior of Jamaica on old trees[b].

37. Stems herbaceous, very long, ſubdivided, round, ſucculent, throwing out ſhort capillary fibres on all ſides from the ſtems. Leaves petioled; the lower orbiculate, entire, ſmall, ſmooth, ſomewhat ſucculent, pubeſcent at the edge, with red ſpots below; the upper or terminating ones ſomewhat oblong, ſmooth on both ſides. Spikes terminating, ſhortly peduncled, round, ſolitary, ſmall[c].

Jacquin mentions, that the leaves are greaſy to the touch, bright green, with a peculiar fragrant reviving odour, entitling them to be ranked among the aromatics and cephalics, and which they retain for ſeveral years, when dried; he has ſeen a diſtilled water of them yielding the pleaſant ſcent of the plant.

Native of Jamaica and Martinico, in cloſe moiſt woods, covering the entire moſſy trunks of old trees, and ſtones covered with moſs.

38. Native of Dominica.]

39. This has a pretty thick ſpongy ſtalk fifteen feet high, dividing into many jointed pithy branches. Leaves about a foot in diameter. Spikes ſmall. [This ſpecies is readily diſtinguiſhed by its large, peltate leaves.—Native of Jamaica and Dominica.

40. This holds a middle place between *P. peltatum* and *umbellatum*; but differs from the firſt in its ſubpeltate acuminate leaves; from the ſecond, in its ſubpeltate leaves, and ſmooth ſtem.

Native of Amboina and Baley in woods among the mountains[a].

41. Stem from two to three feet high, climbing, ſubdivided, compreſſed a little, ſmooth, marked with rufous ſpots or dots, ſucculent. Leaves entire, very ſmooth, not fleſhy, three-nerved, paler underneath. Petioles very long, inſerted by little ſheaths into the ſtem. Peduncles terminating or axillary, two-parted. Spikes upright, linear. Stamens and piſtils inſerted ſpirally into the ſpike.

Native of the mountains of Jamaica, Hiſpaniola[b], and Dominica.

42. Root annual. Stem herbaceous, from one to two feet high, round, ſimple, jointed, hoary. Leaves terminating, diſtant, ſpreading, entire, nerved and veined, wrinkled, ſomewhat hirſute underneath, the lobes of the baſe converging forwards; the nerves radiate from the petiole, which is almoſt in the middle of the leaf. Petioles long, round, ſmooth, ſheathing at the baſe, embracing. Spikes axillary, in umbels; umbellets pedate, with from three to ſix ſpikes, on ſhort pedicels, upright, whitiſh. Calyx and corolla none; but roundiſh ciliate ſcales, whence the ſpikes appear ſubtomentoſe to the naked eye. Filaments approximating, two for each ſcale, very ſhort. Anthers roundiſh, white. Germ oblong, longer than the ſcale. Style none. Stigmas three, reflex, thick, black: viſible only with a glaſs[c].

Native of the Weſt Indies. Browne ſays it is very common in the woods of Jamaica, and is ſeldom more than three or four feet high; that the leaves are very large and round, the foot-ſtalks embracing the ſtem at the inſertion; that Piſo affirms the root to be a warm active remedy againſt poiſons, and that a ſyrup is made of it in many parts of our ſugar-colonies, which is much uſed by the inhabitants in colds and catarrhs.

Browne has ten ſpecies of *Saururus*, which he ſeparates from *Piper*; attributing ſix filaments and three piſtils to the former, and two filaments only with three piſtils to the latter.

43. Native of South America.

44. Stems ſubherbaceous, almoſt upright, not rooting, jointed, weak, the thickneſs of a quill, when adult leafleſs, round, a foot high and more, green or dirty purple; the younger ones ſomewhat angular. Leaves on ſhort petioles red above, acute, quite entire, not ſhining, dotted on both ſides, thick, ſomewhat fleſhy, about two inches long. Spikes ſlender, upright, green, about three inches long, on a reddiſh peduncle, an inch in length. Flowers covering the ſpike very cloſely. Below the germ an oblong bracte. It differs from *P. verticillatum* in being much higher, with acute leaves, and a perennial root.—Native of Venezuela.

45. Root perennial, creeping. Stems annual, aſcending at the baſe and then upright, round, panicled, about the thickneſs of a quill, fleſhy, ſmooth, purple, flexible, a foot high. Branches upright. Leaves oppoſite, on the branches three or four, roundiſh or obovate, blunt, thickiſh, underneath very obſcurely three-nerved, there and on the edge ſomewhat villoſe, and pale; but very ſmooth above. Spikes terminating, ſeſſile, from one to four, upright, two inches long, ſlender, round, green. Germ green. Filaments ſhort, brown. Anthers oblong, incumbent, brown or white. The whole plant has an unpleaſant taſte, but ſcarcely any ſmell[d].

Native of the Weſt Indies. Introduced in 1775, by John Fothergill, M. D.[e]

46. Stem half a foot high, herbaceous, ſubdivided, ſtiff, even, thick. Leaves on ſhort petioles, obcordate, a little concave, thickiſh, very ſmooth. Spikes terminating, peduncled, ſolitary, an inch long, round, whitiſh, thickiſh. Peduncles ſhort. Flowers crowded. Calyx and corolla none; only a ſcale. Filaments two, very ſhort. Anthers globular, twin. Germ ovate. Style none. Stigma oblique, villoſe[e].

Native of South America and Jamaica, on very lofty woody mountains.

47. Herb tender, upright, a finger's length. Leaves three, four, or five together, ſucculent, quite entire, petioled. Spikes ſimple, ſeveral times longer than the leaves.—Native of Jamaica[f].

48. This is a herbaceous plant, a foot high and more. Root ſimple, filamentoſe, whitiſh. Stem

[a] Swartz deſcr. [b] Swartz obſ. [c] Willdenow.

[a] Swartz obſ. [b] Idem. [c] Jacquin. [d] Hort. kew. [e] Swartz. [f] Linn. amoen.

round,

round, leafy; pubeſcent, ſometimes ferruginous. Branches oppoſite. Leaves four or five on a petiole, entire, ſmooth, paler underneath, ſcarcely ſuculent: the upper leaves are commonly three, the lower four, ſeldom five. Spikes terminating, long, four or five conjugate, filiform, looſe. Flowers very minute, green. Calyx none; but an ovate, ſmooth ſcale covering the germ; at the baſe of which are two very ſhort filaments. Anthers roundiſh, twin. Germ ovate. Style none. Stigma oblique, villoſe. Berry ſeſſile, oblong.

P. trifolium differs from this in being creeping, with roundiſh leaves. Native of mountain woods in Jamaica[a].

Mr. Dryander believes the *P. ſtellatum* of Swartz to be the ſame with *P. verticillatum*, at leaſt he can ſee no other difference than in the length of the ſpikes, between Browne's ſpecimen of the latter in Linneus's herbarium, and a ſpecimen from Jamaica, in Sir Joſeph Banks's herbarium, which Swartz has marked as his *P. ſtellatum*[b].

Willdenow on the other hand is of opinion, that this differs from the preceding, on account of its acuminate leaves, and the ſpikes being three times as long, and much thicker.

49. Roots long, filiform. Stems filiform, looſe, very long, creeping or pendulous, ſubdivided, angular, channelled, ſmooth, ſpotted. Branches long, four-ſided, jointed. Leaves on very ſhort petioles, ſmaller, obtuſely or obliquely four-ſided, ſpreading horizontally, ſometimes reflex, concavo-convex, veinleſs, thick, ſhining. Spikes pedunculed, terminating, ſolitary, ſhort. Peduncles ſhort. Fructification as in *P. quadrifolium*, *n.* 46.

Native of the Eaſt Indies, on the trunks of old trees. Thunberg found it at the Cape of Good Hope; Solander and Forſter in the South Sea iſlands[c].

50. Native of Jamaica. Found there by Thomas Clark, M. D. Introduced in 1778, by Mr. William Forſyth. It flowers from July to ſeptember[d].

51. Herbaceous. Roots capillary. Stem creeping far and wide, four-cornered, ſmooth, ſtriated and ſpotted. Branches ſhort, aſcending, filiform, looſe, nearly upright, four-ſided, ſpotted, ſmooth. Leaves ſmall, the lower ones oppoſite, deciſſated, in fours at top, linear-oblong, entire, underneath paler and ſpotted with pale red, ſmooth on both ſides. Petioles ſhortiſh. Spikes terminating, pedunculed. Peduncles upright, ſolitary, terminating, the length of the leaves, round, ſmooth. Calyx none; but a roundiſh ſcale. Filaments two, very ſhort, at the ſides of the ſcale. Anthers twin. Germ oblong, covered with the ſcale. Style none. Stigma villoſe. Berry oblong, minute.

Native of Jamaica, among moſs, at the roots of trees, on the high mountains[e].

According to Willdenow, this is very nearly related to the preceding.

52. Branches ſmooth, jointed, rounded below, above a little angular, ſlightly ſtriated. Joints knobbed. Leaves alternate, gradually attenuated towards the outſide, acute, ſmooth, paler underneath. Petiole ſhort, keeled. Spikes oppoſite to the leaves, pedunculed, ſolitary, ſtraight, three inches long. Peduncles the length of the petiole. Berries diſtinct, the ſize of a muſtard-ſeed, ovate, four-cornered, acuminate.

Found in the iſland of Trinidad by Ryan.

53. Stem ſhrubby, round, ſmooth, even. Joints equal. Leaves three or four inches long, exactly cordate, even, with the veins not much branched. Petioles equal. Spikes pedunculed, oppoſite to the leaves, about three inches in length, ſlender. Peduncle ſhorter than the petiole. Flowers very much crowded together. It differs from *P. reticulatum* in having the leaves exactly cordate, with a deep ſinus at the baſe, and the lobes more diſtant. It recedes alſo from Plumier's figure of *P. decumanum*, both in the form of the leaves, and thickneſs of the ſpikes, as alſo in the greater ſlenderneſs of the ſtem and branches.—Native of Braſil.

[a] Swartz deſcr. [b] Linn. tranſ. 2. 215. [c] Swartz obſ. [d] Hort. kew. [e] Swartz deſcr.

54. Branches ſmooth, ſtraight, round at bottom, angular at top, jointed, with the help of a glaſs having a mealy appearance. Joints knobbed. Leaves alternate, five or ſix inches long, ſharp at the tip, ſomewhat wrinkled, eſpecially underneath from the protuberant veins. Petioles ſhort, channelled above, ſharply keeled underneath. Spikes oppoſite to the leaves, pedunculed, ſolitary, half an inch long, probably longer as they advance in age, round, terminated by a ſhort point without flowers. Peduncles the length of the petiole.—Found in Cayenne by von Rohr.

55. Branches round, ſmooth: the joints a little broken, an inch and half long. Joints knobbed. Leaves alternate, with very ſlender veins and many nerves, paler underneath, with the nerves ſtanding a little out, bluntiſh at the baſe and tip. Petiole ſhort, ſimple, channelled above, ſharply keeled underneath. Spikes oppoſite to the leaves, peduncle[f], an inch and half long, round, blunt; when young a little curved, when more advanced ſtraight. Peduncle the length of the petiole.—Found in the iſland of Montſerrat by Ryan.

56. Branches round, ſmooth, knobbed at the joints. Leaves alternate, remote, quite entire, very finely obliquely and remotely many-nerved, ſomewhat veined, a little paler underneath, ſharp, five or ſix inches long. Petiole very ſhort. Spike oppoſite to a leaf, pedunculed, four or five inches long, ſpreading, the ſize of a ſmall packthread, curved back at the tip. Peduncle twice as long as the petiole. Flowers crowded together very cloſe. It ſeems to be allied to *P. nitidum* of Swartz.—Native of Surinam.

57. Stem branched. Branches diffuſed, rooting, ſmooth, the ſize of a ſmall packthread, alternate, except that ſometimes the loweſt are oppoſite, brown. Leaves petioled, ſmall, ſharp at the baſe, obſcurely three-nerved, veinleſs. Spike at the end of the branches, ſolitary, ſtraight, three inches long, the ſame thickneſs with the branches, round, pedunculed. It differs from *P. cordatum* of Swartz, and *P. retuſum* of Linneus, in having three leaves at each joint. It approaches to the figure of *P. trifoliatum* in Plumier; but differs in having emarginate leaves, acute at the baſe. Perhaps it is only a variety?—Found in the iſland of Montſerrat by Ryan.

58. Stem branched. Branches dichotomous, round, ſtriated above, appearing ſlightly pubeſcent towards the top when magnified, often flexuoſe; the internodes two or three inches long; the joints knobbed. Leaves three inches long, ſharp at both ends, even, obſcurely veined above, very finely veined underneath. Petioles very ſhort, equal, ſimple. Peduncles oppoſite to the leaves, a little longer than the petiole. Spikes ſcarcely longer than the peduncle. It approaches to *P. rugoſum*, but the leaves are ſmaller, very ſmooth and even on the upper ſurface, veined indeed underneath, but not wrinkled as in that, ſharp at the baſe, peduncles ſhorter than the petiole.—Found in Cayenne by von Rohr.

59. Branches ſtriated, ſmooth, the thickneſs of a gooſe quill; joints knobbed, internodes three or four inches long. Leaves alternate, the lower ones ſubcordate at the baſe, half a foot long, ſix or ſeven inches wide, tender, even on both ſides; nerves oblique, bowed; the lower ones oppoſite, the reſt alternate, veined, pale green; the uppermoſt a little narrower on one ſide, and running down obliquely towards the baſe. Petiole an inch long, without any appendicle. Peduncle oppoſite to the leaf, ſhorter than the petiole. Spikes longer than the internodes, three or four inches long, the thickneſs of a packthread. Flowers very minute. It differs from *P. macrophyllum* in there being no appendicles to the peduncles.—Gathered by von Rohr at St. Martha[g].

60. This is a ſhrub five or ſix feet high. Stem upright, round, ſomewhat rugged. Branches ſpreading, round, jointed, rugged. Leaves alternate, many-nerved, veined: nerves rigid, on the lower ſurface more raiſed. Petioles ſhort, round. Peduncles oppoſite

[f] Vahl eclogæ.

poſite to the leaves, ſhorter than the petioles, thick, round, rugged, ſolitary. Spikes two inches long, cylindrical. Flowers crowded. Calyx none; but a minute, roundiſh ſcale, at the ſides of which are two very ſhort filaments. Anthers very minute, roundiſh, twin. Germ ovate. Styles none. Stigmas three, recurved, permanent. It differs from *P. adunctum*, which it reſembles very much, in having wider leaves, browniſh-green not paler; and upright not hooked ſpikes.

Native of Jamaica, in the mountains of the more temperate part*.

Mr. Miller has thirteen ſpecies, all American, except *P. Siriboa*, which is a native of the Eaſt Indies. His ſpecies are chiefly the *Saururi* of Plumier, with three found by Houſtoun. He has not mentioned the common Eaſt-Indian Peppers, having probably never cultivated them.

He has the following ſpecies not mentioned above.]

1. Piper humile.
   Mill. dict. n. 4.
   P. longum humilius, fructu e ſummitate caulis prodeunte. *Sloan. cat.* 45.
   Saururus. *Brown. jam.* 204. 4.
   Leaves lanceolate nerved rigid ſeſſile.
2. Piper laurifolium.
   Mill. dict. n. 6.
   Saururus fruteſcens, lauroceraſi folio, fructu breviore & craſſiore. *Houſt. MSS.*
   Leaves lanceolate-ovate nerved, ſpikes ſhort.
3. Piper tomentoſum.
   Mill. dict. n. 7.
   Saururus arboreſcens latifolia villoſa, fructu gracili. *Houſt. MSS.*
   Leaves ovate-lanceolate tomentoſe, ſtem arboreſcent.
4. Piper decumanum.
   Mill. dict. n. 9.
   Saururus fruteſcens plantaginis folio ampliore, fructu breviore & graciliore adunco. *Houſt. MSS.*
   Leaves cordate-ovate nerved acuminate, ſpikes reflex.
5. Piper glabrum.
   Mill. dict. n. 12.
   Saururus racemoſus, ſ. botryoitis minor. *Plum. cat.* 51.
   Leaves ovate-lanceolate acuminate ſmooth three-nerved.
6. Piper racemoſum.
   Mill. dict. n. 13.
   Saururus racemoſus, ſ. botryoites major. *Plum. cat.* 51.
   Leaves lanceolate-ovate wrinkled, nerves alternate.

DESCRIPTIONS, &c.

1. Stalks ſlender, frequently trailing, and putting out roots from the joints. Leaves five inches long, and two broad in the middle, drawing to a point at each end; they have one ſtrong midrib, with ſeveral veins on the under ſurface, running from the midrib to the ſides. Spike very ſlender, five inches long.—Native of Jamaica.

2. Stalks ſhrubby, jointed, nine or ten feet high, dividing into ſmaller branches. Leaves ſeven inches long and three broad, ending in acute points; they are veined and rough, of the ſame conſiſtence with Laurel leaves. Spikes from the ſides of the branches at the joints, oppoſite to the leaves, not more than an inch and half long, the thickneſs of a ſmall quill, cloſely ſet with flowers.—Native of Vera Cruz in America.

3. This has hollow pithy ſtalks, twelve or fourteen feet high, dividing into many crooked branches, having ſwelling joints. Leaves five inches long and three broad, having many veins, and covered with a woolly down. Spikes from the ſides of the branches oppoſite to the leaves, ſlender, and about three inches long, turning downwards.—Diſcovered by Dr. Houſtoun at Vera Cruz.

4. This riſes with ſeveral ſhrubby ſtalks fifteen feet high, dividing into many ſlender branches, with protuberant joints. Leaves five inches long and three broad, ſmooth, and at their baſe have five veins, but the two outer join the borders of the leaves ſoon; the other three run to the top, the middle one in a right line; the two ſide ones diverge, and join at the top: they are of a dark green on their upper ſide, but pale on their under. Spikes from the ſides of the branches; extremely ſlender, an inch and half long.—Sent from Carthagena by Dr. William Houſtoun.

5. This has many ſhrubby ſtalks ten feet high, dividing into many crooked branches towards the top, having ſwelling joints. Leaves near four inches long, and two and a half broad, of a lucid green, with three large veins or nerves, the middle one ſtraight, the two outer diverging towards the ſides in the middle of the leaf, but drawn together again at the point. Spikes from the ſides of the ſtalks oppoſite to the leaves, pretty long, ſlender, and a little incurved.—Sent from Campeachy by Dr. Houſtoun.

6. Stalk ſhrubby, ten or twelve feet high, dividing towards the top into a great number of ſmall branches, which are hollow, and having protuberant joints. Leaves five inches long, two inches and a half broad, ſome having long, others very ſhort foot-ſtalks; they are of a deep green on their upper ſide, but pale on their under, ending in acute points. Spikes from the ſide of the ſtalks oppoſite to the leaves, long and ſlender, cloſely ſet with very ſmall flowers.—Native of Campeachy.

PROPAGATION AND CULTURE.

All theſe plants require a warm ſtove to preſerve them in England. They may be propagated by ſeeds, if they can be procured freſh from the countries where the plants grow naturally; theſe ſhould be ſown upon a good hot-bed in the ſpring, and when the plants come up and are fit to tranſplant, they ſhould be each put into a ſeparate ſmall pot filled with light freſh earth, and plunged into a hot-bed of tanner's bark, ſhading them every day from the ſun till they have taken freſh root; then they muſt be treated in the ſame way as other tender exotic plants, admitting freſh air to them daily in proportion to the warmth of the ſeaſon, to prevent their drawing up weak; and when the nights are cold, the glaſſes of the hot-bed ſhould be covered with mats to keep them warm. As the ſtalks of moſt of theſe plants are tender when young, they ſhould not have much wet, which would rot them; and when water is given to them it muſt be with caution, not to beat down the plants; for when that is done, they ſeldom riſe again.

In autumn the plants muſt be plunged into the tan-bed of the bark-ſtove, and during the winter they muſt be ſparingly watered; they require the ſame warmth as the Coffee-tree. In the ſummer they require a large ſhare of freſh air in hot weather, but they muſt be conſtantly kept in the ſtove, for they are too tender to bear the inclemency of our weather in ſummer.

[1. *Black Pepper.*

From Dalrymple's Orient. Repert. I.

The introduction of this valuable plant into cultivation in the Circars, was effected by Dr. William Roxburgh in 1787. He found that the Black Pepper grew wild in the hills fifty miles to the N. of Samul Cotah, about 17° N. Lat. and 82° E. Long. from Greenwich*. (See Marſden's Sumatra.)

For prop-trees he uſed Erythrina Corallodendron, called Moochy Wood-tree, or Muricu.

In 1788 he had completed three plantations containing 4750 prop-trees, with two Pepper-vines to each; and had beſides about 10,000 plants in the nurſeries. The trees were ſet in quincunx order, at ſix, eight and ten feet aſunder. One thouſand plants will yield from 500lb. to 1000lb.

In 1789 his plantations contained between forty and fifty thouſand Pepper-vines, occupying about fifty acres of land. The ſoil they thrive beſt on, is a mixture of red clay and ſand.

Method of planting and cultivating the Pepper Vines at Tellicherry, on the Malabar coaſt.

The Pepper-vine ſhould be planted in a low firm ground. In the beginning of June, when the rain falls inceſſantly, at the foot of a Jack, Mango, Cajou,

* Swartz deſcr.

* About thirty miles among the hills, at a place called Rumphah. It grows wild not only there, but in almoſt every valley among theſe hills.

Muricu, or any other tree, whoſe bark is rough or prickly, dig a hole one foot deep, the breadth and length ſix inches; into this hole put a piece taken from the extremity of one of the branches of a Pepper-vine; then fill it up with earth, taking care no water is therein, and that none may remain after planting; in the month of july the roots will extend themſelves in the ground, and the ſprouts will appear on the ſurface, when they are to be tied to a tree, and a circular bank of earth thrown up round them, that they may enjoy the moiſtneſs of the water which remains on the ground, and thereby kept from being inflamed by the heats, which ſubſiſt from the month of july till october; when the rains are over, cover the root of the vine with freſh leaves, it matters not from what tree, ſo they have the quality of cooling: if the ground is too dry, water the ſame, morning and evening; but if it is entirely cool, twice in eight days is ſufficient: then plant five or ſix ſprigs at the foot of the ſame tree, taking particular care they no ways touch one another.

Ten days after the rains are ſet in, remove the leaves that cover the root of the vine, pull up the grais that may have grown near them, and demoliſh the circular bank of earth, made to contain the water, that none may remain at the foot of the tree; in the month of auguſt repeat the ſame. The vines are to be cherifhed in this manner for three years.

It muſt be obſerved, that the foot of the vines ſhould be covered every year, in the manner before mentioned.

If the vine is once ſmothered by the heat, it will begin to languiſh and produce no fruit, ſo it is neceſſary to follow the above inſtructions.

The leaves ought likewiſe to be removed in the month of june, to prevent the white ant from eating the root of the vine, thoſe vermin being much given to eat the leaves, which the rain draws into the ground, and thereby come to the roots of the vine, which they prey upon likewiſe.

Obſerve alſo, that the vine is not too much affected by the heat of the ſun, on account of the proximity of the water.

Theſe Pepper-vines ought not to be planted at the foot of trees whoſe bark is ſmooth, as they will in conſequence fall to the ground: therefore always make choice of thoſe that are rough and prickly.

The manner of planting the Pepper-vine in the month of february, where the ground is low and firm.

Having made a hole ten inches from the tree, the depth thereof being fifteen inches, the length and breadth twelve inches each, take ſeven branches from the extremity of the vine, cut them thirty inches long, and put them into the hole; then fill it three-fourths with earth, and the remainder with freſh leaves, obſerving to put water thereon, morning and evening, till the commencement of the rains, when fill the hole with earth, and throw up the bank as before directed. The time for planting thoſe vines, in the rainy ſeaſon, is in the month of june, and the month of february in the dry ſeaſon: if they are planted at any other time they will bear no fruit; the reaſon is, that they will extend their roots in the ground at theſe times, and no other, and therefore particular care ought to be taken of them, as before directed.

Trees, planted for the ſupport of Pepper-vines, ought to be fifteen or ſixteen feet aſunder; if cloſer, the branches will ſhade the vines from the ſun, as they ought to receive a moderate heat.

Manner of planting the Pepper-vine in higher ſituation and firm ground.

Make a ſquare hole of fifteen inches, the ſame diſtance from the tree; take ten branches from the extremity of the vine, of ſeven inches length each, put them into the hole at a certain diſtance, filling it with earth, and treating them as before directed. In a high place, the trees planted for the ſupport of Pepper-vines, ought not to be more than thirteen feet diſtant on account of the heat. Two years after they are planted, it is neceſſary to throw up a ſquare bank of earth round every five plants, that the rain-water may ſoak in, and nouriſh the roots; if this is omitted during the rains, the vine will not ſubſiſt during the dry ſeaſon, on account of the heat.

This ſquare is to be repaired every three years, by which means the vines will live a long time, and produce plenty of Pepper: it ought to be done during the rains, in the month of july, for, at that time, ſhould the ſpade happen to touch the root, it will be of no inconvenience, but ſhould it do ſo at any other time, the vine will certainly die.

The manner of planting Pepper-vines in very high grounds.

Make a ſquare hole two feet and a half deep, at the ſame diſtance from the tree, take twelve ſlips from the extremity of one of the vines, two feet nine inches long, put them into the hole at a certain diſtance, and cover them as before directed, throwing up the ſquare bank. It is neceſſary to plant thoſe vines at the time before mentioned. The reaſon for making the hole deeper, is on account of the great heats which prevail in high places, to prevent the vine from dying.

Vines, planted in ſtony ſoil, will not produce any fruit, becauſe the roots cannot extend themſelves with facility.

A ſandy ſoil is equally prejudicial to them, becauſe it is naturally hot, and the heat of the ſun penetrates with more facility than in any other ground, conſequently the vines are not able to reſiſt, though watered three or four times a day.

You may plant vines in a place where freſh water communicates itſelf in the ſame manner as in ground entirely low and firm, but I doubt very much if they will produce Pepper; if they really yield any, I am certain the grapes will be of no great account, becauſe of the continual moiſture the plant will receive. I have already remarked, it is abſolutely neceſſary that thoſe vines enjoy an equal degree of heat and moiſture, if you think of gathering a good crop.

Manner of planting the Pepper grain.

Take ripe Pepper and put it into water for three days, at the end of which take off the ſkin, and after you have mixed good red earth, with cow-dung and water, put the Pepper into it, expoſing the ſame to the ſun for three days, only early in the morning and evening; it is neceſſary this mixture be neither too thick or thin. After this, plant the ſame in an earthen pot, every grain at a certain diſtance, taking care to water them every day, with a water-pot, until the ſtalk has four leaves; then dig a hole at the foot of a tree, two feet deep and nine inches long and broad, take cow-dung and aſhes of all ſorts of fire-wood, put it in the hole, and mix the ſame with ground dug out of it, taking care to fill it in ſuch a manner that there only remains five inches of elevation; fifteen days after, plant four Pepper-vines in every hole, cover them with earth two inches deep; during the ſummer water them every day, morning and evening, and cover them during the rains; likewiſe take care no water remains at their feet, by covering them with earth, as they ought to be; as ſoon as the rains are over, throw up a circular bank of earth round them, to contain the water they are watered with; in this manner they muſt be nouriſhed for three years, in the fourth year they will begin to give fruit.

Theſe inſtructions are to be followed every year; theſe Pepper plants are planted either in high or low ground, but it is neceſſary it be very firm.

Manner of planting Pepper-vines where ſalt water is.

After having made a hole thirteen inches ſquare, at the foot of a tree, fill the ſame half up with good red earth, without mixing it in the leaſt with ſalt water, then plant therein ten ſlips of thoſe vines, at a certain diſtance, and cover the ſame with good red earth; when the rains are over, throw again red earth at their feet, and make a circular bank round them, to form a conſervatory for watering them every other day, taking particular care to cover the feet of the branches with freſh leaves: in the beginning of the rains till the

conſervatory,

conſervatory, and take away the leaves, obſerving to pull up the graſs that ſprouts at their feet, covering them with red earth, at the ſame time ſpreading ſome round about; they are to be notriſhed every year, as is pointed out at the beginning of thoſe inſtructions.

Signed M. Firth.

Dr. Anderſon adds that the vines generally bear fruit every fourth year, but often in the third, if ſoils and ſeaſons are favourable. The flowers appear in june, and the berry is ripe in ſeptember. It is cut down when the berry is blood-red, dried in the ſun five or ſix days, winnowed and ſorted. White Pepper is prepared by bruiſing the berry with the feet, ſo as to take off the outer ſkin, waſhed with water, and afterwards dried in the ſun.

According to Mr. Marſden, in his hiſtory of Sumatra, (p. 107.) the ground choſen there for a Pepper-garden, is marked out into regular ſquares of ſix feet, the intended diſtance of the plants, of which there are uſually a thouſand in each garden. The next buſineſs is to plant the chinkareens, which ſerve as props to the Pepper-vines, and are cuttings of a tree of that name, which is of quick growth. When the chinkareen has been ſome months planted, the moſt promiſing upright ſhoot is reſerved for growth, and the others lopped off; this ſhoot having acquired two fathoms in height, is deemed ſufficiently high, and its top is cut off. Two Pepper-vines are uſually planted to one chinkareen, round which the vines twiſt for ſupport, and after being ſuffered to grow three years, by which time they are eight or twelve feet high, they are cut off about three feet from the ground, and being looſened from the prop are bent into the earth in ſuch a manner that the upper end is returned to the root. This operation gives freſh vigour to the plants, and they bear fruit plentifully the enſuing ſeaſon. The fruit is four or five months in coming to maturity: the berries are at firſt green, turn to a bright red when ripe, and ſoon fall off if not gathered in proper time. As the whole cluſter does not ripen at the ſame time, part of the berries would be loſt in waiting for the latter ones; the Sumatrans therefore pluck the bunches as ſoon as any of the berries ripen, and ſpread them to dry upon mats, or upon the ground. By drying they become black, and more or leſs ſhrivelled, according to their degree of maturity.

13. No plant is cultivated with ſo much care and aſſiduity in the South Sea iſlands as the intoxicating Pepper or Ava. The ground is dug over ſeveral times and well cleared from weeds, and then it is manured with ſhell or coral lime *.]

23. If the ſeeds are permitted to ſcatter, the plants will come up without trouble; or if the ſeeds are ſaved, and ſown upon a hot-bed in the ſpring, the plants will riſe eaſily. Tranſplant theſe into ſeparate pots, and plunge them into a hot-bed of tanner's bark; treating them as other tender plants; but they ſhould not have much wet.

31. Seeds of this are rarely produced in England; but it increaſes very faſt by the ſtalks, which put out roots; as do many other ſpecies. It ſhould have little wet, eſpecially in winter. If the plants are plunged into the tan-bed in the ſtove, the ſtalks will ſtrike new roots into the tan, and may be cut off to make new plants.

[This will alſo apply to ſeveral other ſorts. Moſt of them will alſo grow by cuttings, laid a few days in the ſhade to dry, being of a ſucculent nature.

PIPER. See *Capſicum, Fagara.*

—— aggregatum. See *Laciſtema.*

—— jamaicenſe. See *Myrtus Pimenta.*

PIPERELLA. See *Teymnus.*

PIPERI SIMILIS. See *Vitex.*

PIPERIDGE TREE. See *Berberis.*

PIPERITA. See *Fagara.*

PIPERODENDRON. See *Sebinus.*

PIRIGARA. See *Guſtavia.*

PIRIPEA. See *Buchnera.*

PIRIQUETA. See *Turnera.*

* Forſter.

PIRUS. See *Pyrus.*]

PISCIDIA. (*From* Piſcis *and* Capio; *the leaves and twigs being bruiſed and thrown into water to intoxicate the fiſh, and thus make them an eaſy prey.*)

Lin. gen. n. 856. *Reich. n.* 927. *Schreb. n.* 1164. *Jacqu. amer.* 209. *Juſſ.* 388. Piſcipnia. *Lacſl. it.* 275. Ichthyomethia. *Brown.* 276.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, five-toothed: the upper teeth nearer.

COR. Papilionaceous. *Banner* aſcending, emarginate. *Wings* the length of the banner. *Keel* creſcent-ſhaped, aſcending.

STAM. *Filaments* ten, uniting in a ſheath cloven above. *Authers* oblong, incumbent.

PIST. *Germ* pedicelled, compreſſed, linear. *Style* filiform, aſcending. *Stigma* acute.

PER. *Legume* pedicelled, linear, with four longitudinal membranaceous angles, one-celled, ſeparated by doubled iſthmuſes.

SEEDS ſome, ſubcylindric.

ESSENTIAL CHARACTER.

Stigma acute. *Legume* winged four ways.

SPECIES.

1. Piſcidia Erythrina. *Jamaica Dogwood Tree.*
Lin. ſpec. 993. *Juſſ.* 642. *Reich.* 3. 397. *Jacqu. amer.* 206. *pict.* 103. *Lacſl. it.* 275. *Swartz obſ.* 276.
Ichthyomethia. *Brown. jam.* 296.
Coral arbor. *Sloan. jam.* 2. 39. *t.* 176. *f.* 45. *Raii dendr.* 108.
Pſeudo-Acacia ſiliquis alatis. *Plum. ſpec.* 19. *ic.* 233. *f.* 2.
Leaflets ovate.

2. Piſcidia carthaginenſis.
Lin. ſpec. 993. *Juſſ.* 642. *Reich.* 3. 397. *Jacqu. amer.* 210. *pict.* 103.
Phaſeolis accedens, Coral arbor, &c. *Pluk. phyt. t.* 214. *f.* 4.
Leaflets obovate.

DESCRIPTIONS, *&c.*

1. This riſes with a ſtem to the height of twenty-five feet or more, almoſt as large as a man's body, covered with a light-coloured ſmooth bark, and ſending out ſeveral branches at the top without order. Leaves pinnate, with ſeven leaflets for the moſt part, two inches long, and one inch and a half broad, commonly oppoſite. Flowers of a dirty white colour, ſucceeded by oblong pods, which have four longitudinal wings, and are jointed between the cells.

[Swartz deſcribes it as a middle-ſized tree, with an unarmed trunk, and ſpreading branches. Leaflets quite entire, pubeſcent, deciduous. Racemes thyrſoid, terminating, many-flowered, with decuſſated branchlets. Flowers peduncled, numerous, rather large. Calyx goblet-ſhaped, five-cleft, unequal, of a duſky-purpliſh colour, hoary; the two upper ſegments ſcarcely divided, the three lower ovate, the middle one acute. Banner of the corolla roundiſh, compreſſed, covering the wings and keel, keeled at the back: wings ovate, clawed, oblique, white with blood-red veins: keel curved in, gibbous, bifid, blood-red at the tip. Germ ſtriated, pubeſcent: ſtyle curved in, awl-ſhaped. Legume membranaceous, compreſſed; the wings not lateral, but marginal in pairs. Seeds roundiſh.

This tree is a native of Jamaica, and grows chiefly in the low lands (by way ſides, *Jacqu.* on dry calcareous hills, *Swartz*) where it generally riſes to the height of twenty or thirty feet; ſometimes more. It flowers about may or june (march and april, *Swartz*) and throws out all its bloſſoms before the appearance of the foliage; (or ſometimes with it, *Jacqu.*) but the leaves ſucceed pretty ſoon. The bark of the root (leaves and twigs, *Jacq.*) is uſed for the ſame purpoſes, and with the ſame effects, as the leaves and branches of Surinam poiſon; (Cytiſus 2. 296.) it is pounded, and mixed with the water, in ſome deep and convenient part of a river or creek, whence it may ſpread itſelf; in a few minutes the fiſh, that lie hid under the rocks or banks, riſe to the ſurface, where they float as

if they were dead; moſt of the large ones recover after a time, but the ſmaller fry are deſtroyed. The eel is not intoxicated with common doſes, though it is affected very ſenſibly; for the moment the particles ſpread where it lies, it moves off with great agility. Jacquin obſerves, that this quality of intoxicating fiſh is found in many other American plants.

This is generally conſidered as one of the beſt timber-trees in the iſland. The wood is very hard and reſinous; and laſts almoſt equally in or out of water. It is of a light brown colour, coarſe, croſs-grained and heavy [9].

It makes excellent piles for wharfs. The ſtakes ſoon form a good live fence. The bark of the trunk is very reſtringent; a decoction of it ſtops the immoderate diſcharge of ulcers, eſpecially when it is combined with the Mangrove bark; it cures the mange in dogs; and would probably anſwer well for tanning leather [9].

It was cultivated in 1690, in the Royal Garden at Hampton Court [1].]

2. This differs from the firſt in the ſhape and conſiſtence of the leaves, which are more oblong and of a firmer texture; in other reſpects they are very ſimilar.

Native of the Weſt Indies. [Jacquin found it on the coaſt in woods, near Carthagena.

He remarks that it has the habit of the preceding, but that it is double the ſize in all its parts. The leaflets are obovate and very blunt, ſometimes with a point and ſometimes without. It ſeems never to have flowered in Europe. Plumier's ſynonym, which Linnæus attaches to the firſt, Jacquin gives to the ſecond ſpecies.]

PROPAGATION AND CULTURE.

Both ſorts are equally propagated by ſeeds, when they can be obtained freſh from the countries where they naturally grow, for in Europe theſe plants do rarely flower; there are plants now in the Chelſea Garden which are more than twenty years old, and if they had not been two or three times ſhortened, would have been more than twenty-five feet high, yet have not attempted to flower though they are in perfect health.

The ſeeds muſt be ſown upon a good hot-bed in the ſpring, and when the plants come up and are fit to tranſplant, they ſhould be each planted in a ſmall pot filled with light earth, and plunged into a hot-bed of tanner's bark, and afterward treated in the ſame way as hath been directed for the ERYTHRINA.

PISCIPULA. See *Piſcidia*.

PISHAMIN. See *Dioſpyros*.

PISONIA. (*So named by Plumier, in honour of William Piſo, a phyſician at Amſterdam, author of the Natural Hiſtory of Braſil*, 1648 *fol.*

Lin. gen. n. 1162. *Reich. n.* 1279. *Schreb. n.* 1603. *Plum. gen.* 11. *Houſt. Gærtn. t.* 76. *Juſſ.* 91. Pentagonotheca. *Vaill. act. gall. Jacqu. amer.* 274.

Claſſ. 23. 2. Polygamia Dioecia.—Heptandria Monogynia. *Swartz.*

Nat. order of *Nyctagines*, Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. ſcarcely any.

COR. one petalled, bell-ſhaped, five-cleft: *ſegments* acute, patulous.

STAM. *Filaments* five, ſix or ſeven, awl-ſhaped. *Anthers* roundiſh, twin.

PIST. *Germ* oblong. *Style* ſhort. *Stigma* pencil-ſhaped.

* *Female.*

CAL. and COR. as in the Male.

PIST. *Germ* oblong. *Style* ſimple, cylindrical, longer than the corolla, erect. *Stigmas* bifid.

PER. *Berry* oval, often five-cornered, valveleſs, one-celled.

SEED ſingle, ſmooth, oblong.

ESSENTIAL CHARACTER.

Cal. ſcarcely any. *Cor.* bell-ſhaped (funnel-ſhaped, *G.*) five-cleft. *Stam.* five or ſix. *Piſt.* one. *Capſ.* ſuperior, one-celled, valveleſs. (Berry, *Gen.*) one-ſeeded.

Male and *Female* on the ſame or on different plants.

SPECIES.

1. Piſonia aculeata. *Prickly Piſonia.*
   Lin. ſpec. 1511. *Juſt.* 920. *Reich.* 4. 361. *hort. cliff.* 457. *Jacqu. amer.* 274. *pict.* 133. *Brown. jam.* 358. *Gærtn. fruct.* 1. 367. *Plum. gen.* 7. *ic.* 227. *f.* 1. *Pluk. phyt. t.* 108. *f.* 2. (Rhamnus) *Sloan. jam.* 2. 25. *t.* 167. *Raii dendr.* 95. (Paliuro affinis.)
   Spines axillary ſpreading very much.
2. Piſonia ſubcordata.
   Swartz prodr. 60.
   Unarmed, leaves cordate-roundiſh, fruits dry ſubclavate five-cornered, angles muricate at the tip.
3. Piſonia nigricans.
   Swartz prodr. 60.
   P. inermis. *Jacqu. amer.* 275. 2. *pict.* 133.
   Unarmed, leaves ovate-acuminate, flowers cymed erect, fruits berried.
4. Piſonia coccinea.
   Swartz prodr. 60.
   Unarmed, leaves lanceolate-ovate, peduncles terminating looſe, flowers nodding, fruits berried.
5. Piſonia inermis.
   Lin. ſyſt. 920. *Reich. 4.* 361.
   P. mitis. *Lin. ſpec.* 1511.
   P. malabarica non ſpinoſa. *Amm. herb.* 582.
   Stem unarmed.]

DESCRIPTIONS, *&c.*

1. The male plants of the prickly Piſonia differ ſo much in appearance from the female, that thoſe who have not ſeen them riſe from the ſame ſeeds, would ſuppoſe they were different ſpecies, I ſhall therefore give ſhort deſcriptions of each.

The male plants have ſtalks as thick as a man's arm, which riſe ten or twelve feet high; the bark is of a dark brown colour, and ſmooth; theſe ſend out many branches by pairs oppoſite, which are much ſtronger than thoſe of the female, and do not hang about ſo looſe. They are garniſhed with obovate ſtiff leaves, an inch and a half long, and an inch and a quarter broad, ſtanding oppoſite on ſhort foot-ſtalks. From the ſide of the branches come out ſhort ſpurs, like thoſe of the Pear-tree, having each two pairs of ſmall leaves at bottom, and from the top comes out the peduncle, which is ſlender, about half an inch long, dividing at the top into three; each of theſe ſuſtain a ſmall corymb of herbaceous yellow flowers, each having five ſtamina ſtanding out beyond the petal, terminated by obtuſe anthers.

The ſtalks of the female plants not being ſo ſtrong as thoſe of the male, require ſupport. Theſe riſe eighteen or twenty feet high, ſending out ſlender weak branches oppoſite, which are armed with ſhort, ſtrong, hooked ſpines, and have ſmall oval leaves, about an inch and three quarters broad; theſe ſtand oppoſite on the larger branches, but on the ſmaller they are alternate, and have ſhort foot-ſtalks. The flowers are produced in ſmall bunches at the end of the branches, ſitting upon the germ; they are ſhaped like thoſe of the male, but have no ſtamina; in the center is ſituated a cylindrical ſtyle, crowned with five ſpreading ſtigmas. The germs afterwards turn to a channelled, five-cornered, glutinous capſule, armed with ſmall crooked ſpines, each containing one oblong, oval, ſmooth ſeed.

[Jacquin deſcribes it as an inelegant tree, with round, reclining branches, wanting ſupport. Spines awl-ſhaped, acuminate, axillary, oppoſite, perpendicular to the branch, ſtrong, recurved at the points. Leaves oval, acute, quite entire, ſmooth, petioled, oppoſite. Racemes corymbed, branched, axillary and terminating, not reaching beyond the leaves, but when in fruit very much elongated. Flowers ſmall, numerous, yellowiſh green, ſupported by three awl-ſhaped bractes, if the flower terminates the branchlet of the raceme, but with two only, if it is placed at the ſide of it, the raceme itſelf then ſerving for the third.

Jacquin obſerved many plants of this ſpecies about Kingſton in Jamaica, where they are abundant, and always

[9] Browne. [1] Long. 824. [2] Hort. kew.

always traced the hermaphrodite and female flowers to different individuals.

Browne affirms that the flowers are very various; being ſometimes hermaphrodite on every branch, ſometimes male in one branch and female in another, and ſometimes male, female and hermaphrodite on the different parts of the ſame plant; but moſt commonly they are all of one kind. It is a ſtrong withey climber, the main trunk being ſometimes no leſs than five or ſix inches in diameter; but this is generally in the woods, where it thrives beſt, and is commonly ſupported by the help of ſome of the neighbouring trees. It is frequently cut for hoops, when there is a ſcarcity of other wood.

Gærtner deſcribes the fruit as a ſuperior capſule, oblong, blunt, five-cornered, coriaceous, muricate with little barbed glutinous prickles, in a double row at the angles; it is of a very dark brown colour, one-celled and valveleſs. Seed oblong, roundiſh, ſlightly attenuated downwards, ſtriated, having a depreſſed longitudinal groove on one ſide, of a very dark colour. A briſtle-ſhaped cord connects the top of the ſeed and of the capſule. Skin of the ſeed ſingle, membranaceous, dry, thin. Albumen central, cylindrical, marked with a deep groove, farinaceous, very white. Embryo the ſize of the ſeed, yellowiſh: lobes leafy, rolled longitudinally into a cylinder about the albumen, and incloſing it entirely: radicle conical, ſhort, inferior.—The capſule is certainly valveleſs, though Linneus deſcribed it otherwiſe, being miſled by Plumier's figure. Jacquin remarked only a ſingle row of barbed prickles, in the plants from Domingo.

In Jamaica it is called Cock's-ſpur or Fingrigo. Mr. Miller cultivated it here in 1739. It flowers in march and april.]

This plant is very common in the ſavannas, and other low places in the iſland of Jamaica, as alſo in ſeveral other iſlands in the Weſt Indies, where it is very troubleſome to whoever paſſes through the places of their growth, faſtening itſelf by the ſtrong crooked thorns to the clothes; and the ſeeds being glutinous and burry, alſo faſten themſelves to whatever touches them: ſo that the wings of the ground-doves and other birds, are often ſo loaded with the ſeeds, as to prevent their flying, by which means they become an eaſy prey.

[2. Native of Antigua.

3. Swartz refers the *P. inermis* of Jacquin to this ſpecies. Jacquin deſcribes it as a ſmall tree without thorns, upright, twelve and ſometimes twenty feet in height, with a trunk five inches in diameter: when it grows in thick coppices it acquires an inelegant habit, not much unlike the firſt ſpecies. Leaves oblong-lanceolate, acuminate. Racemes like thoſe of the prickly ſort, but not elongated when in fruit; continuing after the fruit is fallen, and then becoming red. Bractes the ſame. Flowers ſmall, greeniſh yellow, having a ſlight odour. Berry black, ſoft, containing a whitiſh pulp, which is often wanting, being probably eaten by inſects, for it is always found in the unripe fruit. This tree does not at all agree with that which is figured in the *Hortus Malabaricus*, under the name of *Katu-kara-walli*; for it is prickly. *P. inermis* of Jacquin is common in the woods and coppices about Carthagena in New Spain. Swartz found his *P. nigricans* in Jamaica.

4. Native of Hiſpaniola.

5. This ſpecies reſts on the authority of Ammann. The figure in *Hortus Malabaricus* cannot be this ſpecies, being thorny. Swartz refers the *P. inermis* of Jacquin to his *P. nigricans*, *n.* 3. which ſee.

According to Linneus, it is a native of the Eaſt Indies. Forſter aſcribes it to the Society iſlands.]

PROPAGATION AND CULTURE.

In Europe this plant is preſerved in the gardens of ſome curious perſons for variety; it is propagated by ſeeds, which ſhould be ſown in pots filled with light rich earth, and plunged into a hot-bed of tanner's bark; and when the plants come up, they ſhould be tranſplanted into ſeparate pots, and plunged into the hot-bed again, where they may remain till Michaelmas, when they ſhould be removed into the ſtove, and plunged into the bark-bed, and treated in the ſame manner as has been directed for ſeveral tender plants of the ſame country; obſerving in hot weather to give them plenty of water, but in winter they ſhould have it more ſparingly. They are too tender to thrive in the open air of this country at any ſeaſon of the year, wherefore they ſhould be conſtantly kept in the ſtove. They retain their leaves moſt part of the year in England.

PISTACHIA and PISTACHIA NUT. See *Piſtacia*.

PISTACIA. (Piſtacia *of Theophraſtus and Dioſcorides. Derivation unknown.*)

Lin. gen. n. 1108. *Reich. n.* 1212. *Schreb. n.* 1511. Terebinthus. *Tournef. t.* 345. *Juſſ.* 371. Lentiſcus. *Tournef.*

Claſſ. 22. 5. Dioecia Pentandria.

Nat. order of *Amentaceæ*. *Terebintaceæ*, Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. *Ament* looſe, ſcattered, compoſed of ſmall one-flowered *ſcalelets*.

Perianth proper, five-cleft, very ſmall.

COR. none.

STAM. *Filaments* five, very ſmall. *Anthers* ovate, four-cornered, erect, patulous, large.

* *Female.*

CAL. *Ament* none.

Perianth trifid, very ſmall.

COR. none.

PIST. *Germ* ovate, larger than the calyx. *Styles* three, reflex. *Stigmas* thickiſh, hiſpid.

PER. *Drupe* dry, ovate.

SEED. *Nut* ovate, ſmooth.

OBS. Terebinthus Tournef. *has pinnate leaves with an odd leaflet.* Lentiſcus Tournef. *has pinnate leaves without any odd leaflet.*

ESSENTIAL CHARACTER.

MALE an ament. *Cal.* five-cleft. *Cor.* none.

FEM. diſtinct. *Cal.* trifid. *Cor.* none. *Styles* two. *Drupe* one-ſeeded.

SPECIES.

1. Piſtacia officinalis. *Piſtacia Tree.*
Ait. hort. kew. 3. 398.
P. trifolia. *Lin. ſpec.* 1454. *Reich.* 4. 245. *hort. cliff.* 456. *Sauv. meth.* 219. *Gouan illuſtr.* 79.
Piſtacium mas ſiculum, folio nigricante. *Bocc. muſ.* 2. 139. *t.* 93.
Terebinthus ſ. Piſtacia trifolia. *Tournef. inſt.* 580.
Leaves ſimple ternate and pinnate, leaflets oval.
2. Piſtacia narbonenſis.
Lin. ſpec. 1454. *Reich.* 4. 246. *Gron. orient.* 313. *Gouan monſp.* 503. *illuſtr.* 79. *Sauv. monſp.* 219.
Terebinthus peregrina fructu majore Piſtaciis ſimili eduli. *Bauh. pin.* 400. *Tournef. inſt.* 579.
T. indica major fructu rotundo. *Bauh. hiſt.* 1. 277.
β. Terebinthus major, Piſtaciæ folio. *Lob. adv.* 412.
Leaves pinnate and ternate ſuberbiculate.
3. Piſtacia vera.
Lin. ſpec. 1454. *ſyſt.* 884. *Reich.* 4. 246. *mat. med.* 212. *Gron. orient.* 312. *Deſfont. atlant.* 363. *Gouan illuſtr.* 79. *Blackw. t.* 461. *Knipb. cent.* 2. *n.* 58, 59. *Regn. bot.*
P. Terebinthus. *Mill. dict. n.* 1.
P. peregrina fructu racemoſo ſ. Terebinthus indica. *Bauh. pin.* 407.
Piſtacia. *Bauh. hiſt.* 1. 275. *Ger.* 1248. *emac.* 1436. *Park. theat.* 1417. *Raii hiſt.* 1682. *Comer. rpit.* 170. *Matth.* 222. *Dod. pempt.* 817.
Terebinthus indica Theophraſti, Piſtacia Dioſcoridis. *Lob. adv.* 413. *Tourn. inſt.* 580. *Dubam. arb.* 2. 306. *t.* 88.
Leaves unequally pinnate, leaflets ſubovate recurved.
4. Piſtacia Terebinthus. *Common Turpentine Tree.*
Lin. ſpec. 1455. *Reich.* 4. 246. *hort. cliff.* 456. *upſ.* 296. *mat. med.* 212. *Woodv. med. bot.* 415. *t.* 153. *Sauv. monſp.* 219. *Gouan hort.* 503. *Gron. orient.* 311. *Deſfont. atlant.* 364. *Scop. carn. n.* 1218. *Villars dauph.* 2. 547. *Gouan illuſtr.* 79. *Forſk. ægypt. cent.* 8. *p.* 219. *Blackw. t.* 478. *Regn. bot.*
P. vera. *Mill. dict. n.* 4.

Terebinthus. *Cluſ. hiſt.* 1. 15. *Dod. pempt.* 871. *Ger. emac.* 1433. 1. *Raii hiſt.* 1577. *Bauh. hiſt.* 1. 279. *Camer. epit.* 51.

T. vulgaris. *Bauh. pin.* 400. *Tournef. inſt.* 579. *Duham. arb.* 2. 306. *t.* 87.

T. anguſtiore folio vulgatior. *Park. theat.* 1527. 2.

Leaves unequally pinnate, leaflets ovate-lanceolate.

[5. Piſtacia atlantica.

Deſfont. atlant. 364.

Leaves deciduous unequally pinnate, leaflets lanceolate ſomewhat waved, petioles winged.]

6. Piſtacia Lentiſcus. *Maſtick Tree.*

Lin. ſpec. 1455. *Reich.* 4. 247. *hort. cliff.* 456. *upſ.* 996. *mat. med.* 213. *Woodv. med. bot.* 412. *t.* 152. *Sauv. monſp.* 219. *Gron. orient.* 310. *Gouan monſp.* 503. *illuſtr.* 79. *Deſfont. atlant.* 365. *Ludw. edit.* 1. 41. *Blackw. t.* 195. *Kniph. cent.* 1. *n.* 64 & 5. *n.* 67. *Regn. bot.*

α. Lentiſcus vulgaris. *Bauh. pin.* 399. *Tournef. inſt.* 580. *Duham. arb.* 1. 354. *t.* 136. *Jonſt. hiſt.* 297. *t.* 84.

Lentiſcus. *Cluſ. hiſt.* 1. 14. *Dod. pempt.* 871. *Camer. epit.* 50. *Lob. ic.* 2. 96. *Tabern. ic.* 1026. *Matth.* 105. *Ger.* 1243. *emac.* 1432. *Park. theat.* 1524. 1. *Raii hiſt.* 1579.

Common Maſtick Tree.

β. Piſtacia maſſilienſis *Mill. dict. n.* 6.

Terebinthus anguſtifolia maſſilienſis. *Tourn. H. R. par.*

Narrow-leaved Maſtick Tree.

Leaves abruptly pinnate, leaflets lanceolate.

DESCRIPTIONS, *&c.*

1. In the Levant, where the Piſtacia is a native, this tree grows to the height of twenty-five or thirty feet; the bark of the ſtem and old branches is of a dark ruſſet colour, but that of the young branches is of a light brown. The leaves in the *vera* of Linneus (n. 3.) are compoſed of two or three pairs of leaflets, terminated by an odd one; they approach towards an ovate ſhape, and their edges turn back: in the *trifolia* of Linneus, the leaves, for the moſt part have three, but ſometimes four ovate leaflets, of a dark green colour: and the *narbonenſis* has three or five roundiſh leaflets, of a light green colour. The leaves in all theſe, which ſeem not to be diſtinct ſpecies, emit an odour like that of the nut, when they are bruiſed. Some of the trees produce male flowers, others female; and ſome, when they are old, have both on the ſame tree. The male flowers come out from the ſide of the branches in looſe bunches, and are of an herbaceous colour. The female flowers come out in the ſame manner in cluſters.

[Mr. Swinburn obſerves, that the male tree of the Piſtacia (trifolia. *Lin.*) has ſmall oblong blunt leaves, of a duſky green; the flowers thick and in bunches; the female bloſſoms are more ſcattered, the leaves larger, harder, rounder, and of a lighter colour. The male puts forth its flowers firſt, and ſome gardeners pluck them whilſt yet ſhut, dry them, and afterwards ſprinkle the pollen over the female tree: but the method uſually followed in Sicily, when the trees are far aſunder, is to wait till the female buds are open, and then to gather bunches of male bloſſoms ready to blow; theſe are ſtuck into a pot of moiſt mould, and hung upon the female tree, till they are quite dry and empty. This operation is called *tuchiarare*, and never fails to produce fructification; ſometimes the gardeners ingraft the male bud upon the female tree. The male tree is called in the Sicilian language *Scornabecce*, and the fruit *Faſtuge*[a]. Our old writers call it *Piſticke nut.*

Though one variety of the Piſtacia tree has the appelative of *narbonenſis*, and P. trifolia is ſaid to be a native of Sicily, yet there is no doubt of its having originally been brought into Europe, with moſt of our valuable fruits, from the eaſtern countries. Pliny relates, that the Emperor Vitellius introduced it into Italy from Syria, when he was Legate in that province.

Gouan thus diſtinguiſhes the three ſpecies or rather varieties of the Piſtacia tree.

[a] Travels in the Two Sicilies, vol. 2. p. 255.

1. *P. trifolia* has two or three flowering buds from the ends of the branches, below the branching bud. Theſe have no leaves. Racemes compound, naked or leafleſs. The branching bud puts forth pubeſcent, almoſt ſilky leaves, the firſt ternate, the next quinate and ſimple, or in an inverted order, the primary ones quite ſimple: all the leaflets are orbiculate, fleſhy, very ſmooth, rugged and netted with veins, acuminate, but not unfrequently blunt and emarginate, two inches wide and a little more in length; the odd leaflet largeſt, at the baſe acuminate, and as it were running down into the petiole; which is flat, thick and almoſt winged: the lateral leaflets ſeſſile, alternate and oppoſite. Racemes in both ſexes ſimilar. According to Linneus it is a native of Sicily.

2. *P. narbonenſis* agrees with the preceding in the manner of flowering, and the ſituation of the buds: but the racemes are larger. Leaflets ovate-oblong, acuminate, narrower, on ſhort petioles but not ſeſſile, with a longitudinal nerve ſometimes making one ſide of the leaf narrower. Foliation as in *P. Terebinthus*. Fruit twice as large as thoſe of *Terebinthus*, ſubovate, reddiſh, the ſkin netted and wrinkled, on one ſide gibbous downwards, or ſometimes from the middle only.

According to Linneus it grows about Montpelier, as well as in Perſia, Meſopotamia and Armenia, where it was found by Rauwolf.]—Mr. Miller ſays it grows in Italy and the South of France, but is ſuppoſed to have been tranſplanted from ſome other country.

3. [*P. vera* has the appearance of the preceding. The flowering and branching buds are in the ſame reſpective ſituation. Racemes leſs compound, and almoſt as in *P. trifolia*, one to four, alternate. The ſcalelets ſeparating the florets are concave, larger and deciduous. Leaflets five at moſt, very ſharp-pointed, not unfrequently obliquely ovate-lanceolate, or wider downwards on one ſide.

According to Linneus, this is a native of Perſia, Arabia, Syria and India. It is frequent about Aleppo, and Rauwolf ſays that there are whole woods of it near Sermin and Baſilo.] Mr. Miller affirms that it grows naturally in Barbary, Spain, Italy and the Levant. [But he confounds the Piſtacia and Turpentine tree. His *Piſtacia Terebinthus* is the former, and his *P. vera* is the latter.—Deſfontaines ſays it is cultivated in the kingdom of Tunis; and that Linneus's *P. trifolia* ſeems to be nothing more than a variety of it.

The Piſtacia tree was cultivated in England in 1570, by Mr. Gray, as appears from Lobel; it flowers here in april and may[b].

4. The ſituation of the buds is ſimilar to that in the three preceding ſpecies. Leaflets ſeven, the middle ones for the moſt part larger, or the odd leaflet and the two inmoſt ſmaller than the four others; each ovate-oblong, by no means acuminate but yet ſtyled, moſt of them alſo are wider on one ſide. Fruit like that of *P. narbonenſis*, but only half or a third of the ſize, not at all wrinkled, and towards the top gibbous on one ſide, (but not downwards, as in *P. narbonenſis*) with the ſtyle, and having ſometimes a concave circle near the baſe[c].

Monſ. Villars deſcribes it as a low ſhrub, but very thick. The wood is odorous and balſamic. The leaves have two pairs of leaflets, terminated by an odd one which is larger; they are firm, and ſhining on the upper ſurface. The flowers form branching catkins at the axils of the leaves, and are reddiſh.

Native of Barbary and the South of Europe. Cultivated in England in 1730. It flowers here in june and july[d].

Cyprus or Chian Turpentine, which this tree furniſhes, is procured by wounding the bark of the trunk in ſeveral places, during the month of july, leaving a ſpace of about three inches between the wounds; from theſe the Turpentine is received on ſtones, upon which it becomes ſo much condenſed by the coldneſs of the night, as to admit of being ſcraped off with a knife, which is always done before ſun-riſe: in order to free

[b] Hort. kew. [c] Gouan illuſtr. [d] Hort. kew.

it from all extraneous admixture, it is again liquified by the ſun's heat, and paſſed through a ſtrainer; it is then fit for uſe. The quantity produced is very inconſiderable; four large trees, ſixty years old, only yielding two pounds nine ounces and ſix drams; but in the eaſtern part of Cyprus and Chio the trees afford ſomewhat more, though ſtill ſo little as to render it very coſtly, and on this account it is commonly adulterated, eſpecially with other turpentines. The beſt Chio Turpentine is generally about the conſiſtence of thick honey, very tenacious, clear and almoſt tranſparent, white inclining to yellow and of a fragrant ſmell, moderately warm to the taſte, but free from acrimony and bitterneſs. For the medicinal qualities of Turpentine, ſee *Pinus Larix*[r].

5. This is a large tree, with a thick wide roundiſh head. Bark on the ſmall branches gray. Leaflets ſeven or nine, very ſmooth, quite entire, waved and ſubrepand on the edge, bluntiſh. Petiole compreſſed above, ſurrounded here and there with a very ſhort wing. Male flowers terminating, in thyrſoid racemes; with a ſmall, ovate, deciduous, ſilky ſcale, excavated above, at the baſe of each branchlet. Calyx three or five-parted; the ſegments awl-ſhaped and pubeſcent. Stamens five, but ſometimes though ſeldom ſeven; filaments very ſhort; anthers oblong, two-lobed, blunt, deep red, with the pollen yellow. Females in looſe panicled racemes. Scales narrower than in the males. Calyx three or five-parted, with acute ſegments. Styles purple, often unequal. Germ very ſmall, ovoid. Drupe ſomewhat fleſhy, roundiſh, nearly the ſize of a pea, when ripe blueiſh; containing a roundiſh nucleus. In younger trees the leaves are ſometimes elliptic.

Native of Barbary: very common in ſandy uncultivated fields near Coſſa, where many being in rows, it is plain, that this tree was once cultivated there. At the foot of the mountains near Mayane, Tlemſen, &c.

From the bark of the trunk and branches flows at different ſeaſons of the year, but eſpecially in ſummer, a reſinous juice, hardening in the air, of a pale yellow colour, of an aromatic ſmell and taſte that is not unpleaſant, ſcarcely to be diſtinguiſhed from oriental Maſtick, and known by the ſame name *Houle* among the Moors. It is inſpiſſated into lamellæ round the branchlets, or into irregular globules, differing in thickneſs and ſhape, frequently as big as the end of the finger or thumb, ſome of which drop from the tree and are found ſcattered on the ground. The Arabs collect this ſubſtance in autumn and winter, and make the ſame uſe of it as of the Maſtick from Scio; chewing it to give a pleaſant ſmell to the mouth, and brightneſs to the teeth.

At the foot of mount Atlas this tree is larger than any other which grows there, but the reſinous juice is ſofter, and of a much leſs pleaſant ſmell and taſte, than that which flows from the trees of the deſert, which is probably occaſioned by the climate being cooler, and the ſoil more moiſt and fertile. The leaves have frequently thick round red galls on them, reſembling berries. The Moors eat the drupes; and bruiſe them to mix with their dates[s].]

6. The Lentiſcus or common Maſtick tree riſes to the height of eighteen or twenty feet, the trunk being covered with a gray bark. It ſends out many branches, which have a reddiſh-brown bark. The leaves have three or four pairs of ſmall leaflets, of a lucid green on their upper, but pale on their under ſide: the midrib has two narrow borders or wings running from one leaflet to another. The male flowers come out in looſe cluſters from the ſides of the branches, are of an herbaceous colour, appear in may, and ſoon fall off: they are generally on different plants from the fruits, which alſo grow in cluſters, and are ſmall berries, of a black colour when ripe.

[Fabricius remarks, that the male plant in time produces hermaphrodite flowers with three ſtamens and five ſtyles, which are followed by fruit.

It is obſerved by Gouan that the buds are different from thoſe of the other ſorts; the branch-bearing buds being terminating; the flowering-buds in both ſexes axillary and in pairs: hence the aments are alſo in pairs, cloſe, almoſt united at the baſe, and equal: the female aments are longer and narrower, the males thicker and ſhorter. The leaves have five leaflets on each ſide, which are nearly equal but variable; ſome being lanceolate, or oblique, ſo that one ſide is gibbous downwards, the other upwards, ſome emarginate, and moſt frequently alternate. The petioles are ſo much winged, that the leaves may be called articulately pinnate. There is frequently a thread between the outer leaflets.

Deſfontaines deſcribes the trunk as covered with a wrinkled and tubercled bark; the branches as numerous, twiſted, and forming a roundiſh head: the leaves as perennial; the petiole channelled and compreſſed above; the leaflets ſmooth, oppoſite or alternate, even, rigid, paler underneath, attenuated at the baſe, quite entire, obtuſe or acute, mucronate. Male flowers ſmall, crowded, ſeſſile, racemed, axillary. Filaments longer than the calyx; anthers purple, two-lobed, two-celled. Female flowers axillary, racemed; racemelets a little longer and looſer. Berry roundiſh, at firſt red, but when ripe browniſh.

Lentiſcus or Maſtick tree is a native of the South of Europe, and the Levant. Deſfontaines informs us that it is very common in Barbary both wild on the hills and cultivated in gardens; but that it is little if at all reſinous, though the branches and bark of the trunk were wounded at different ſeaſons of the year; that the wood however yields an aromatic ſmell in burning; and that the berries yield an oil fit both for the lamp and the table.

In the iſland of Chio the officinal Maſtick is obtained moſt abundantly, by making tranſverſe inciſions in the bark of the tree, whence the Maſtick exudes in drops, which are ſuffered to run down to the ground, and after they are concreted they are collected for uſe. Theſe inciſions are made at the beginning of auguſt, when the weather is very dry, and are continued till the end of ſeptember.

Maſtick is a reſinous ſubſtance, brought to us in ſmall yelloviſh tranſparent brittle grains or tears: it has a light agreeable ſmell, eſpecially when rubbed or heated: on being chewed, it firſt crumbles, ſoon after ſticks together, and becomes ſoft and white, like wax, without impreſſing any conſiderable taſte. It totally diſſolves, except the earthy impurities, which are commonly in no great quantity, in rectified ſpirit of wine, and then diſcovers a degree of warmth and bitterneſs, and a ſtronger ſmell than that of the reſin in ſubſtance. Boiled in water, it impregnates the liquor with its ſmell, but gives out little or nothing of its ſubſtance; diſtilled with water, it yields a ſmall quantity of a limpid eſſential oil, in ſmell very fragrant, in taſte moderately pungent. Rectified ſpirit brings over alſo in diſtillation the more volatile odorous matter of the Maſtick.

It is a common practice with the Turkiſh women to chew this reſin, eſpecially in the morning, not only to render their breath more agreeable, but to whiten the teeth, and ſtrengthen the gums; they alſo mix it with their fragrant waters, and burn it with other odoriferous ſubſtances in the way of fumigation. It is uſed in Europe by japanners, in ſome of their varniſhes.

As a medicine, Maſtick is conſidered to be a mild corroborant and aſtringent; and as poſſeſſing a balſamic power, it has been recommended in hæmoptyſis, proceeding from ulceration, fluor albus, debility of the ſtomach, and in diarrhœas and internal ulcers. Chewing this drug has likewiſe been ſaid to be of uſe in pains of the teeth and gums, and in ſome catarrhal complaints; it is now however ſeldom uſed either externally or internally.

The wood of this tree is received into the *Materia Medica* in ſome foreign Pharmacopœias, and is highly extolled in dyſpeptic, gouty, hæmorrhagic, and dyſenteric affections[t].

It was cultivated here in 1664; as appears in Evelyn's kalendar; and flowers in may[u]. The only

[r] Woodville. [s] Deſfontaines. [t] Woodville. [u] Hort. kew.

tree

tree which Dr. Woodville obſerved to flower in England, was a male plant in the Apothecaries Garden at Cheliſea.]

β. This riſes to the ſame height as the preceding; but differs from it in having a pair or two of leaflets more to each leaf, much narrower and of a paler colour. [Gouan ſays it differs from the common Maſtick only in having the leaflets ſmaller by half, five or ſeven on each ſide, ſharper, more alternate, and the petioles more concave above.]

Native of the country about Marſeilles and ſome other places in the South of France.

PROPAGATION AND CULTURE.

The Piſtacia-nut tree is propaged by the nuts, obtained from abroad, planted in pots filled with light kitchen-garden earth, and plunged into a moderate hot-bed: when the plants appear, admit a large ſhare of air to them, to prevent their drawing up weak; and by degrees harden them to bear the open air, to which expoſe them the beginning of June till autumn, when they ſhould be placed under a hot-bed frame to ſcreen them from the froſt in winter; for while they are young, they are too tender to live through the winter in England without protection, but they ſhould always be expoſed to the air in mild weather; theſe plants ſhed their leaves in autumn, and therefore ſhould not have much wet in winter; and in the ſpring, before the plants begin to ſhoot, they muſt be tranſplanted each into a ſeparate ſmall pot; and if they are plunged into a very moderate hot-bed, it will forward their putting out new roots; but as ſoon as they begin to ſhoot, they muſt be gradually hardened, and placed abroad again; theſe plants may be kept in pots three or four years till they have got ſtrength, during which time they ſhould be ſheltered in winter; and afterwards they may be turned out of the pots, and planted in the full ground, ſome againſt high walls to a warm aſpect, and others in a ſheltered ſituation, where they will bear the cold of our ordinary winters very well, but in ſevere froſts they are often deſtroyed. The trees flower and produce fruit in England, but the ſummers are not warm enough to ripen the nuts.

4. The Turpentine tree may be treated in the ſame manner, and is as hardy. There was a tree of this ſort growing in the garden of the Biſhop of London at Fulham, againſt a wall, which was planted there in Biſhop Compton's time, and endured the winters without cover: and ſome trees of this ſort which were planted in the open air in the garden of his Grace the Duke of Richmond, at Goodwood in Suſſex, ſurvived ſeveral winters without any protection.

6. The plants of this ſort are generally propagated by laying down their young branches, which, if properly managed, will put out roots in one year, and may then be cut off from the old plants, and each tranſplanted into ſeparate ſmall pots. Theſe muſt be ſheltered in winter, and in ſummer placed abroad in a ſheltered ſituation, and treated in the ſame way as other hardy kinds of green-houſe plants. It may alſo be propagated by ſeeds in the ſame way as the others; but if the ſeeds are not taken from trees growing in the neighbourhood of the male, they will not grow; and if they are kept out of the ground till ſpring, the plants rarely appear till the ſpring following. When theſe plants have obtained ſtrength, ſome of them may be turned out of the pots, and planted againſt warm walls; where, if their branches are trained againſt the walls, they will endure the ordinary winters very well, and with a little ſhelter in ſevere winters they may be preſerved.

[PISTACIA. See *Burſera, Hamamelis, Roxena, Staphylea*.

PISTACIA SIMARUBA. See *Burſera gummifera*.

PISTACIO-VITEX. See *Vitex*.

PISTACIUM. See *Piſtacia*.

PISTIA. (*Piſtia, alveus.*)

Lin. gen. n. 1023. *Reich. n.* 1112. *Schreb. n.* 1112. *Jacqu. amer.* 234. *Juſſ.* 69. Kodda-pail. *Plum.* 39.

Claſſ. 16. 3. *Monadelphia Octandria.*

Nat. order of *Miſcellaneæ. Hydrocharides*, Juſſ.

GENERIC CHARACTER.

CAL. none.

COR. one-petalled, unequal, erect, permanent. *Tube* ſhort, cloſely embracing the germ. *Border* cordate-roundiſh, widened, acuminate, entire, contracted in the middle on both ſides by a lateral plait bent inwards.

STAM. *Filament* round, thick, blunt, ſpringing almoſt perpendicularly from the centre of the border of the corolla, hanging over the piſtil, ſurrounded at the baſe by a membranaceous diſk, augmented below on both ſides by a fringe hanging down, the width of the anthers. *Anthers* ſix to eight, globular, placed in a ring on the margin of the filament at the top:—three to eight, but generally three. *Swartz.*

PIST. *Germ* ſubovate, twice as long as the tube of the corolla, faſtened to the back of the petal by a longitudinal thickened line extending to the very origin of the filament. *Style* thick, erect, ſhorter than the filament. *Stigma* blunt, ſubpeltate.

PER. *Capſule* ovate, compreſſed, one-celled.

SEEDS very many, oblong, depreſſed at the top and there umbilicated with a dot, faſtened horizontally to the back of the capſule where it adheres to the corolla.

OBS. *This plant was placed by Linnæus in the claſs Gynandria, but Swartz, after Jacquin, has placed it better in that of Monadelphia.*

ESSENTIAL CHARACTER.

Cal. none. *Cor.* one-petalled, tongue-ſhaped, entire. *Anthers* ſix or eight, placed on the filament. *Style* one. *Capſ.* one-celled, at the bottom of the corolla.

SPECIES.

1. Piſtia Stratiotes.

Lin. ſpec. 1365. *ſuſſ.* 825. *Reich.* 4. 62. *ſ. zeyl. n.* 322. *Loeſſ. it.* 281. *Jacqu. amer.* 234. *piſt.* 115. *t.* 225. *Brown. jam.* 329. *Swartz obſ.* 343.

Plantago aquatica. *Rumph. amb.* 6. *t.* 74.

Kodda-pail. *Rheed. mal.* 11. 63. *t.* 32.—paluſtris folio oblongo ſpecioſo. *Plum. gen.* 30.

β. Stratiotes ægyptia. *Bauh. hiſt.* 3. 787. *Mor. hiſt.* 3. 619. *ſ.* 15. *t.* 4. *f. inf. Veſl. ægypt.* 44. *t.* 45. *Raii hiſt.* 1324.

S. Hai-alem-maoni. *Alp. ægypt.* 106. *t.* 108.

Lenticula paluſtris 6. ſ. ægyptia, ſ. S. aquatica, foliis ſedo majore latioribus. *Bauh. pin.* 362. *Sloan. jam.* 1. 15. *t.* 2. *f.* 2.

DESCRIPTION, *&c.*

This is a ſtemleſs, floating, elegant plant. Roots many, a foot and half long, put forth ſimple fibres from their circumference, an inch and half in length, numerous, not ill repreſenting the leaves of Ranunculus aquaticus. Other capillary fibres, ſhorter and in cluſters, come out at the baſe of the leaves and the origin of the principal roots. Leaves various in number and ſize according to the age of the plant, whilſt the plant is in vigour about twenty, ſpread out in a circle or like a roſe, a foot in diameter. They are obovate, attenuated at the baſe, for the moſt part quite entire, ſometimes emarginate, ſeſſile, patulous, lanuginoſe at the baſe, between the nerves and on the upper ſurface villoſe, thick, ſpongy, a little ſucculent, and therefore well adapted for floating; but on the back, from a thicker very large and ſubovate area they puſh forth aſcending, very thick, and extremely prominent nerves. According to Swartz, the leaves are ſubſeſſile, wedge-ſhaped at the baſe, elliptic, radiate-veined, glaucous-velvety on the upper ſurface: the central leaves are ſmaller than the outer ones; the inmoſt erect, convoluted, tomentoſe. Runners are produced from the root under the leaves; they are long, and terminated by other ſmaller plants. The corolla of Jacquin is called by him a ſpathe.—Flowers whitiſh, inodorous, axillary, ſolitary and erect, on a ſhort pedunclc. The corolla ſhrivels up more or leſs, and burſts as the germ increaſes.

Adanſon in his hiſtory of Senegal affirms, that the primary root is fixed ſtrongly into the bank. Jacquin did not attend to this circumſtance, but remarks, that in taking the plants out of the water, he never found

any

any reſiſtance: he ſuggeſts however that the young plants may be fixed at firſt, and afterwards break looſe*.

Native of Aſia, Africa, South America, and the Weſt Indian iſlands, in ſtagnant waters and quiet ſtreams; flowering in april.]

PISTOLOCHIA. See *Ariſtolochia* and *Fumaria*.

PISUM. (Πισον of *Theophraſtus*: *from* πιαινω, *pinſo, tundo, decortico, the ancients being accuſtomed to bruiſe or grind their legumes. Others derive it* απο του πιπτειν, *becauſe it lies on the ground unleſs ſupported. Some from the city Piſa, where it was ſuppoſed to abound. But the latter derivation is generally reprobated.*)

Lin. gen. n. 870. *Reich. n.* 944. *Schreb. n.* 1184. *Tournef. t.* 215. *Juſſ.* 360. *Gærtn. t.* 152.

Ochrus. *Tournef. t.* 219, 220.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-cleft, acute, permanent, the two upper ſegments ſhorter.

COR. Papilionaceous. *Standard* very broad, obcordate, reflex, emarginate with a point. *Wings* two, roundiſh, converging, ſhorter than the ſtandard. *Keel* compreſſed, ſemilunar, ſhorter than the wings.

STAM. *Filaments* diadelphous: one ſimple, ſuperior, flat-awl-ſhaped; and nine awl-ſhaped below the middle united into a cylinder which is cloven at top. *Anthers* roundiſh.

PIST. *Germ* oblong, compreſſed. *Style* aſcending, triangular, membranaceous, keeled with the ſides bent outwards. *Stigma* growing to the upper angle, oblong, villoſe.

PER. *Legume* large, long, roundiſh or compreſſed downwards, with the top acuminate upwards, one-celled, two-valved.

SEEDS ſeveral, globular.

OBS. *The ſeeds of* Ochrus Tournef. *are marked with an oblong hilum or ſcar.*

The ſeeds of Piſum Tournef. *are faſtened by a roundiſh hilum.*

ESSENTIAL CHARACTER.

Style triangular, above keeled, pubeſcent. *Cal.* has the two upper ſegments ſhorter.

SPECIES.

1. Piſum ſativum. *Common Pea.*
   Lin. ſpec. 1026. *Reich.* 3. 457. *hort. upſ.* 215. *cliff.* 369. *mat. med.* 172. *Ludw. elt. t.* 169. *Gærtn. fruct.* 2. 331.
   Piſum. *Camer. epit.* 213. *Blackw. t.* 83. *Rivin. tetr. t.* 36—38. *Fuchſ. hiſt.* 626. *Park. parad.* 522.
   P. vulgatius. *Lob. ic.* 2. 65.
   β. P. hortenſe majus. *Baub. pin.* 342. *Mor. hiſt.* 2. ſ. 2. *t.* 1. *f.* 1.
   Common Marrowfat Pea.
   γ. P. humile. *Mill. dict. n.* 2.
   Dwarf Pea.
   P. humile caule firmo. *Tournef. inſt.* 394.
   δ. P. arvenſe fructu viridi. *Tournef. inſt.* 394.
   Green Rouncival Pea.
   ε. P. cortice eduli. *Tournef. inſt.* 394. P. ſaccharatum. *Park. parad. t.* 523. *f.* 5.
   Sugar Pea.
   ζ. P. umbellatum. *Baub. pin.* 342. *Mill. dict. n.* 3. *Ger.* 1045. 3.
   P. erectius comoſum. *Baub. hiſt. Raii hiſt.* 894.
   Roſe or *Crown Pea.*
   *. P. quadratum.
   P. majus quadratum. *Baub. pin.* 342. *Raii hiſt.* 894.
2. P. arvenſe. *Lin. ſpec.* 1027. *fl. ſuec. n.* 638. *Gunn. norv. n.* 76.
   Field Pea.
   P. pulchrum, fol. anguloſo. *Baub. hiſt.* 2. 297. *Mor.* 2. 1. 4. *Raii hiſt.* 894.
   Petioles round, ſtipules rounded at bottom and crenate, peduncles many-flowered.
2. Piſus maritimus. *Sea Pea.*
   Lin. ſpec. 1027. *Reich.* 3. 458. *fl. ſuec. n.* 640. *lapp. n.* 272. *Hudſ. angl.* 313. *Wither. arr. ed.* 3. 629. *Fl. dan. t.* 338. *Smith ſpicil. t.* 9. *angl.* 760.
   P. marinum. *Ger. emac.* 1250. *Raii hiſt.* 894. *ſyn.* 319.—perpetuum. *Munt. phyt.* 44. *t.* 230.
   P. ſpontaneum maritimum anglicum, & aliud marit. britannicum. *Park. theat.* 1060. 4 & 5.
   P. ſpont. perenne repens humile. *Mor. hiſt.* 2. 47. *ſ.* 2. *t.* 1. *f.* 5.
   Piſa ſponte naſcentia. *Cail opuſc. l.* 2. 29. 2.
   Petioles flattiſh above, ſtem angular, ſtipules ſagittate, peduncles many-flowered.
3. Piſum Ochrus. *Yellow-flowered Pea.*
   Lin. ſpec. 1027. *Reich.* 3. 458. *hort. cliff.* 370. *upſ.* 215. *Knipb. cent.* 10. *n.* 71.
   Ochrus folio integro capreolos emittente. *Baub. pin.* 343.
   Ervilia ſylveſtria. *Dod. pempt.* 522.
   O. ſ. Ervilia. *Ger. emac.* 1249. *f.* 1. *Raii hiſt.* 899. —flore & fructu albo. *Park. theat.* 1066. *f.* 1.
   Lathyri ſpecies quæ Ervilia ſylveſtria Dodonæo. *Baub. hiſt.*
   Petioles decurrent membranaceous two leaved, peduncles one-flowered.

DESCRIPTIONS, *&c.*

1. [Root annual, ſlender, fibrous. Stems hollow whilſt young, brittle, branched, ſmooth, weak, climbing by terminating tendrils. Leaves abruptly pinnate, compoſed uſually of two pairs of leaflets, which are oval and ſmooth. Stipules large, ſurrounding the ſtem or branch. Flowers lateral, two or three together on long peduncles. Corolla white, greeniſh white, purple or variegated. Legumes commonly in pairs, about two inches long, of an oblong form, ſmooth, ſwelling at the ſtraight future, where the ſeeds are faſtened, flatted next the other future, which arches eſpecially towards the end. Seeds from five or ſix to eight or nine, commonly globular, but in ſome varieties irregular or approaching to a cubic form, ſmooth, white, yellow, blue, gray, brown or greeniſh, with a ſmall oblong umbilicus. The colour of the whole plant is glaucous, or hoary green, from a white meal which covers it. Linneus remarks that the leaflets are conduplicate or doubled together.

It is ſaid to be a native of the South of Europe. Loureiro informs us that it is found in China and Cochinchina, but that it is not frequent, and perhaps not indigenous. According to Thunberg, it is cultivated in moſt provinces of Japan.

Like other favoured plants, this has many varieties. The principal ones are given above.

Ray has ſixteen.

1. Piſum vulgare parvum album arvenſe. *Baub. hiſt. Common white field Pea.*
   P. minus. *Ger.* 1045. 2.
2. P. arvenſe flore roſeo, fructu fuſco aut ex cinereo nigricante. *Gray Pea.*
3. P. flore roſeo, fructu variegato. *Maple-pea.*
4. P. minora ex purpureo variegata. Viciæ ſimilia. *Baub. hiſt.*
5. P. parva viridia. *Baub. hiſt.*
6. P. ſylveſtre nigrum maculatum bœticum. *Park.*
7. P. erectius comoſum. *Baub. hiſt. Roſe Pea.*
8. P. ſine tunicis durioribus in ſiliqua magna alba. *Baub. hiſt. Sugar Pea.*
   P. excorticatum. *Ger.* 1045. 4.
9. P. ſiliqua carnoſa incurva ſ. falcata eduli. *Sickle Pea.*
10. P. flore rubente ſtriato, pro coccineo miſſo. *Scarlet Pea.*
11. P. majus quadratum. *Rouncival Pea.*
    P. majus. *Ger.* 1045. 1.
12. P. majora alba. *Baub. hiſt. White Haſting Pea.*
13. P. magna rubra variegata. *Baub. hiſt.*
14. P. virginiana. *Baub. pin.*
15. Piſi pulchra ſpecies folio anguloſo. *Baub. hiſt.*
16. P. ſylveſtre. *Cluſ.* This is ſaid to be perennial, and to have been obſerved by Cluſius in various parts of Hungary and about Vienna, in mountain woods. All the other varieties are annual.

* Jacquin.

The varieties enumerated by Parkinſon, in his *Paradiſus*, 1629, are

1. The Rouncivall.
2. The green Haſting.
3. The Sugar Peaſe.
4. The Spotted Peaſe.
5. The Gray Peaſe.
6. The white Haſting.
7. The Peaſe without Skins.
8. The Scottiſh or Tufted Peaſe, which ſome call the Roſe Peaſe.
9. The Early or French Peaſe, which ſome call Fulham Peaſe, becauſe the grounds thereabouts bring them ſooneſt forward for any quantity, although ſometimes they miſcarry by their haſte and earlineſs.]

Out of the great variety of Garden Peas cultivated in England, Mr. Miller mentions only thoſe which are commonly known, placing them according to the time in which they are gathered for the table:

1. The Golden Hotſpur.	10. Sugar Dwarf.
2. The Charlton.	11. Sickle Pea.
3. The Reading Hotſpur.	12. Marrowfat.
4. Maſters's Hotſpur.	13. Dwarf Marrowfat.
5. Eſſex Hotſpur.	14. Roſe, or Crown Pea.
6. The Dwarf Pea.	15. Rouncival Pea.
7. The Sugar Pea.	16. Gray Pea.
8. Spaniſh Morotto.	17. Pig Pea.
9. Nonpareil.	

[The *Hotſpurs* and *Haſtings* have their names from their coming to bear early in the ſeaſon. The ſix firſt varieties are of this nature, and being low growers, require ſticks of three or four feet only in height; and the Dwarf Pea not ſo much. New varieties of theſe are raiſed almoſt every year, which becauſe they differ in ſome ſlight particular, are ſold at an advanced price, and have frequently the names of the perſons who raiſed them, or the place where they firſt grew. Theſe varieties are not permanent, and without the greateſt care will ſoon degenerate. Beſides the above, we have the *early* Charlton Hotſpur, the *early* Golden Hotſpur, *Nicholas's earlieſt* Hotſpur, &c. &c.

Of the larger Peas (7 to 13 and 15) there are alſo ſeveral varieties; as the large and Dwarf Marrowfat; the large and Dwarf Sugar Pea; the Green, and White Rouncival Pea, &c. They all grow tall, and require ſticks from five or ſix to ſeven or eight feet in height.

Beſides the common Roſe or Crown Pea, there is a variegated one—the Egg Pea—the Cluſter Pea—the large Gray Pea—the crooked Gray Pea, and innumerable others of thoſe which are uſed in Field culture.

Dr. Plott enumerated ſome of theſe in 1683. Henley Gray. Blue. Sandwich. Hampſhire Kids. Horn Gray. Early White. Latter White. Blue and Green. Bowdies. Red-ſhanks, Cotſwould. Partridge. Black-eyed Whites. Small Rath-ripe. Roſe. Horn. Large Huſcods.—Theſe have had their day, and others have ſucceeded, to yield again to others.]

Mr. Miller has a perennial Pea, which he calls *Piſum americanum* or *Cape Horn Pea*, from its having been brought by Lord Anſon's cook, when he paſſed that Cape, where this Pea was a great relief to the ſailors; but it is not ſo good for eating as the worſt ſort cultivated in England. It is a low trailing plant; there are two leaflets on each foot-ſtalk, thoſe below ſpear-ſhaped and ſharply indented on their edges; but the upper ones ſmall and arrow-pointed. The flowers are blue, each peduncle ſuſtaining four or five of them. Legumes taper, near three inches long. Seeds round, about the ſize of Tares.

2. [Sea Pea has a perennial root, running far and deep among the ſtones or into the ſand in every direction. Stems procumbent, quadrangular, a little compreſſed, ſtriated, ſmooth, leafy, many-flowered, glaucous, often reddiſh. Leaves alternate, alternately and abruptly pinnate, ſpreading. Leaflets ſeſſile, oval, obtuſe with a little point, entire, ſmooth, many-veined, glaucous: common footſtalk flattiſh, ſtriated, ending in a branched thread-ſhaped ſmooth tendril. Stipules two together, equal, acute, toothed at the baſe, of the texture and colour of the leaflets, but ſmaller. Cluſters of flowers axillary, ſolitary, as long as the leaves, erect, many-flowered. Common peduncle round, ſtriated, ſmooth; pedicels alternate, ſhort, ſingle-flowered. Flowers rather large, a little drooping: corolla beautifully variegated with red and purple: ſtandard obovate, notched, purple, with a red ridge and veins; wings and keel paler, blueiſh. Germ nearly cylindrical: ſtyle bluntiſh, uniform and not broader in the upper part: ſtigma reaching from its middle to the top on the fore part. Pod oblong, compreſſed, ſmooth, ſtraight on the upper ſide, keeled below, terminated by the permanent ſtyle. Seeds ſeveral[4].

According to Mr. Woodward, the ſtems are ſlightly pubeſcent and ſhort. Leaves numerous: leaf-ſtalks angular, pubeſcent: leaflets alternate, on the lower leaves five or ſeven, upwards nine or eleven; there being always one more on the lower than on the upper ſide of the leaf-ſtalk, which is terminated by a tendril, ſometimes ſimple, but often[er] bifid at the extremity. Stipules oval-lanceolate, broad, arrow-ſhaped at the baſe. Flowers crowded on the ſummit of the naked peduncle. Pods long and narrow. Linnæus (fl. ſuec.) obſerves that the exterior leaflets are ſmalleſt: this does not ſeem to be by any means conſtant, though it is ſometimes ſo. The figure in Flora Danica is bad. Muntingius's is very good. Moriſon's is moderate[5].

It is well remarked by Dr. Smith, that this ſpecies is almoſt as nearly allied to Lathyrus as to Piſum, both in habit and generic character; and that Piſum ſativum is not more different in external appearance from the genus of Lathyrus, than Vicia Faba or the Bean is from the other Viciæ. Theſe however, he adds, are matters of opinion; and in ſo natural a claſs, it is very difficult to find out certain and obvious marks of diſtinction[6].

Sea Pea is a native of the ſea ſhore, among ſtones or in ſand in different parts of Europe, as Sweden, Denmark, England; in great plenty on the ſtony beach, between Orford and Aldborough in Suffolk; near Haſtings, Rye, and Pevenſey in Suſſex; near Lyd in Kent; Guildford over againſt the Comber, and Ingolne mills in Lincolnſhire; on the ſharp ridge running from Portland iſland to Bridport, to the right of the ferry, among looſe pebbles, fifteen or twenty feet above high water mark, but the cows eat it down ſo that it is difficult to procure a ſpecimen in flower. It is found in Canada, quite ſmooth, and of double the ſize. Thunberg alſo ſays it grows in Japan, in the iſland of Nipon, by way ſides, flowering in march, april and may. With us it flowers in july and auguſt.

We learn from the epiſtles of the learned Caius that the Sea Pea was firſt obſerved in the year 1555, when in a great ſcarcity, the poor people on the coaſt of Suffolk about Orford and Aldborough ſupported themſelves with it for ſome time. This ſtory is retailed by Stow and Camden; with the addition, that they were ſuppoſed to ſpring up opportunely in that year of dearth, from a ſhipwrecked veſſel loaded with Peas; whereas the Sea Pea differs from all the varieties of the garden or field Pea, in the length and continuance of its roots, the ſmallneſs and bitterneſs of its ſeed, and in the whole habit and appearance of the plant. It had probably grown a long time on Orford beach unobſerved, till extreme want called it into public notice: the ſeed is ſo bitter, that it would not be eaten, except in a want of better food, and it is certainly not uſed at preſent, though it might be gathered in ſufficient quantity; nay it is neglected by the very birds[7]. The legend of the miraculous arrival of theſe Peas in a time of extreme ſcarcity, is ſtill believed among the country people.]

3. Root annual. Stalk angular, near three feet high. Leaves on winged foot-ſtalks, each ſuſtaining two oblong leaflets. Flowers pale yellow, ſmall. Pods two inches long; containing five or ſix roundiſh ſeeds, a little compreſſed on their ſides; theſe may be eaten green, but unleſs they are gathered very young

[4] Smith. [5] MSS. [6] Spicil. p. 9.
[7] Raii hiſt. 895. Ger. emac. 1230.

they

they are coarſe, and at beſt not ſo good as the common Pea.

[Native of the South of Europe and the Levant. Ray obſerved it among the corn near Leghorn in Italy.—Johnſon the editor of Gerarde's herball (1633) ſays, it is found with us only in gardens. It flowers in june and july.]

PROPAGATION AND CULTURE.

Culture in Hotbeds.

It is a common practice with the gardeners near London, to raiſe Peas upon hot-beds, to have them very early in the ſpring; in order to which, they ſow their Peas upon warm borders under walls or hedges, about the middle of October; and when the plants come up, they draw the earth up gently to their ſtems with a hoe, the better to protect them from froſt. In theſe places they let them remain till the latter end of january, or the beginning of february, if they are preſerved from froſts, obſerving to earth them up from time to time as the plants advance in height, as alſo to cover them in very hard froſt with Peas-haulm, ſtraw, or ſome other light covering, to preſerve them from being deſtroyed; then, at the time before-mentioned, they make a hot-bed (in proportion to the quantity of Peas intended) which muſt be made of good hot dung, well prepared and properly mixed together, that the heat may not be too great. The dung ſhould be laid about three feet thick, or ſomewhat more, according as the beds are made earlier or later in the ſeaſon; when the dung is equally levelled, then the earth (which ſhould be light and freſh, but not over rich) muſt be laid on about ſix or eight inches thick, laying it equally all over the bed. This being done, the frames (which ſhould be two or two and a half feet high on the back ſide, and about eighteen inches in front) muſt be put on, and covered with glaſſes: after which it ſhould remain three or four days, to let the ſteam of the bed paſs off, before you put the plants therein, obſerving every day to raiſe the glaſſes to give vent for the riſing ſteam to paſs off; then when you find the bed of a moderate temperature for heat, you ſhould, with a trowel, or ſome other inſtrument, take up the plants as carefully as poſſible, to preſerve the earth to the roots, and plant them into the hot-bed in rows about two feet aſunder; and the plants ſhould be ſet about an inch diſtant from each other in the rows, obſerving to water and ſhade them until they have taken root; after which you muſt be careful to give them air at all times when the ſeaſon is favourable, otherwiſe they will draw up very weak, and be ſubject to grow mouldy and decay. You ſhould alſo draw the earth up to the ſhanks of the plants as they advance in height, and keep them always clear from weeds. The water they ſhould have muſt be given them ſparingly, for if they are too much watered it will cauſe them to grow too rank, and ſometimes rot off the plants at their ſhanks juſt above ground. When the ſun ſhines hot, cover the glaſſes with mats, otherwiſe their leaves will flag, and their bloſſoms fall off without producing pods; as will alſo keeping the glaſſes too cloſe at that ſeaſon. But when the plants begin to fruit, they ſhould be watered oftener, and in greater plenty than before; for by that time the plants will have nearly done growing, and the often refreſhing them will occaſion their producing a greater plenty of fruit.

The ſort of Pea which is generally uſed for this purpoſe is the Dwarf, for all the other ſorts ramble too much to be kept in frames; the reaſon for ſowing them in the common ground, and afterwards tranſplanting them on a hot-bed, is alſo to check their growth, and cauſe them to bear in leſs compaſs; for if the ſeeds were ſown upon a hot-bed, and the plants continued thereon, they would produce ſuch luxuriant plants as are not to be contained in the frames, and would bear but little fruit.

Culture of Peas in the open air.

The next ſort of Pea which is ſown to ſucceed thoſe on the hot-bed is the Hotſpur, of which there are reckoned three or four ſorts; as the Golden Hotſpur, the Charlton Hotſpur, the Maſters's Hotſpur, the Reading Hotſpur, and ſome others, which are very little differing from each other, except in their early bearing, for which the Golden and Charlton Hotſpurs are chiefly preferred; though if either of theſe ſorts are cultivated in the ſame place for three or four years, they are apt to degenerate and be later in ſpring-fruiting, for which reaſon moſt curious perſons procure their ſeeds annually from ſome diſtant place; and in the choice of theſe ſeeds, if they could be obtained from a colder ſituation and a poorer ſoil, than that in which they are to be ſown, it will be much better than on the contrary, and they will come earlier in the ſpring. Theſe muſt alſo be ſown on warm borders, towards the latter end of october; and when the plants are come up, you ſhould draw the earth up to their ſhanks in the manner before directed; which ſhould be repeated as the plants advance in height (always obſerving to do it when the ground is dry) which will greatly protect the ſtems of the plants againſt froſt; and if the winter ſhould prove very ſevere, it will be of great ſervice to the plants to cover them with Peas-haulm, or ſome other light covering; which ſhould be conſtantly taken off in mild weather, and only ſuffered to remain on during the continuance of the froſt; for if they are kept too cloſe, they will be drawn very weak and tender, and thereby be liable to be deſtroyed with the leaſt inclemency of the ſeaſon.

In the ſpring you muſt carefully clear them from weeds, and draw ſome freſh earth up to their ſtems; but do not raiſe it too high to the plants, leſt by burying their leaves you ſhould rot their ſtems, as is ſometimes the caſe, eſpecially in wet ſeaſons. You ſhould alſo obſerve to keep them clear from vermin, which, if permitted to remain amongſt the plants, will increaſe ſo plentifully as to devour the greateſt part of them. The chief of the vermin which infeſt Peas are the ſlugs, which lie all the day in the ſmall hollows of the earth, near the ſtems of the plants, and in the night time come out, and make terrible deſtruction of the Peas; and theſe chiefly abound in wet ſoils, or where a garden is neglected, and over-run with weeds; therefore you ſhould make the ground clear every way round the Peas to deſtroy their harbours, and afterwards in a fine mild morning very early, when theſe vermin are got abroad from their holes, you ſhould ſlack a quantity of lime, which ſhould be ſown hot over the ground pretty thick, which will deſtroy the vermin wherever it happens to fall upon them, but will do very little injury to the Peas, provided it be not ſcattered too thick upon them. This is the beſt method I could ever find to deſtroy theſe troubleſome vermin.

If this crop of Peas ſucceeds, it will immediately follow thoſe on the hot-bed; but for fear this ſhould miſcarry, it will be proper to ſow two more crops at about a fortnight's diſtance from each other, ſo that there may be the more chances to ſucceed. This will be ſufficient until the ſpring of the year, when you may ſow three more crops of theſe Peas; one toward the beginning of january, the other a fortnight after, and the third at the end of january. Theſe two late ſowings will be ſufficient to continue the early ſort of Peas through the firſt ſeaſon, and after this it will be proper to have ſome of the large ſort of Peas to ſucceed them for the uſe of the family; in order to which, you ſhould ſow ſome of the Spaniſh Morotto, which is a great bearer, and a hardy ſort of Pea, about the middle of february, upon a clear open ſpot of ground. Theſe muſt be ſown in rows about three feet aſunder, and the Peas ſhould be dropped in the drills about an inch diſtance, covering them about two inches deep with earth, being very careful that none of them lie uncovered, which will draw the mice, pigeons, or rooks, to attack the whole ſpot; and it often happens by this neglect, that a whole plantation is devoured by theſe creatures; whereas, when there are none of the Peas left in ſight, they do not ſo eaſily find them out.

About a fortnight after this you ſhould ſow another ſpot, either of this ſort, or any other large ſort of Pea, to ſucceed thoſe, and then continue to repeat

ſowing

ſowing once a fortnight, till the middle or latter end of may, ſome of theſe kinds, only obſerving to allow the Marrowfats, and other very large ſorts of Peas, at leaſt three feet and a half, or four feet between row and row; and the Roſe Pea ſhould be allowed at leaſt eight or ten inches diſtance from plant to plant in the rows, for theſe grow very large; and if they have not room allowed them, they will ſpoil each other by drawing up very tall, and will produce no fruit.

When theſe plants come up, the earth ſhould be drawn up to their ſhanks (as was before directed) and the ground kept entirely clear from weeds; and when the plants are grown eight or ten inches high, you ſhould ſtick ſome rough boughs, or bruſhwood, into the ground cloſe to the Peas, for them to ramp upon, which will ſupport them from trailing upon the ground, which is very apt to rot the large-growing ſorts of Peas, eſpecially in wet ſeaſons; beſides, by thus ſupporting them, the air can freely paſs between them, which will preſerve the bloſſoms from falling off before their time, and occaſion them to bear much better than if permitted to lie upon the ground, and there will be room to paſs between the rows to gather the Peas when they are ripe.

The dwarf ſorts of Peas may be ſown much cloſer together than thoſe before-mentioned, for theſe ſeldom riſe above a foot high, and rarely ſpread above half a foot in width, ſo that theſe need not have more room than two feet row from row, and not above an inch aſunder in the rows. Theſe produce a good quantity of Peas, provided the ſeaſon is not over dry, but they ſeldom continue long in bearing, ſo that they are not ſo proper to ſow for the main crop, when a quantity of Peas is expected for the table, their chief excellency being for hot-beds, where they will produce a greater quantity of Peas, provided they are well managed, than if expoſed to the open air, where the heat of the ſun ſoon dries them up.

The Sickle Pea is much more common in Holland than in England, it being the ſort moſtly cultivated in that country; but in England they are only propagated by curious gentlemen for their own table, and are rarely brought into the markets. This ſort the birds are very fond of, and if they are not prevented, many times deſtroy the whole crop. This ſhould be planted in rows about two feet and a half aſunder, and ſhould be managed as has been directed for the other ſorts. Although I have directed the ſowing of the large ſorts of Peas for the great crop, yet theſe are not ſo ſweet as the early Hotſpur Peas; therefore it will alſo be proper to continue a ſucceſſion of thoſe ſorts through the ſeaſon, in ſmall quantities, to ſupply the beſt table, which may be done by ſowing ſome every week or ten days; but all thoſe which are ſown late in the ſeaſon, ſhould have a ſtrong moiſt ſoil, for in hot light land they will burn up and come to nothing.

The large-growing ſorts may be cultivated for the common uſe of the family, becauſe theſe will produce in greater quantities than the other, and will endure the drought better, but the early kinds are by far the ſweeter taſted Peas.

The beſt of all the large kinds is the Marrowfat, which if gathered young, is a well-taſted Pea, and this will continue good through the month of auguſt if planted on a ſtrong ſoil.

The Field Culture.

The Gray and other large winter Peas are ſeldom cultivated in gardens, becauſe they require a great deal of room, but are uſually ſown in fields in moſt parts of England. The beſt time for ſowing theſe is about the beginning of march, when the weather is pretty dry, for if they are put into the ground in a very wet ſeaſon, they are apt to rot, eſpecially if the ground be cold; theſe ſhould be allowed at leaſt three or four feet diſtance row from row, and muſt be ſown very thin in the rows; for if they are ſown too thick, the haulm will ſpread ſo as to fill the ground, and ramble over each other, which will cauſe the plants to rot, and prevent their bearing.

The common White Pea will do beſt on light ſandy land, or on a rich looſe ſoil. The uſual method of ſowing theſe Peas is with a broad-caſt, and ſo harrow them in; but it is a much better way to ſow them in drills about three feet aſunder; for leſs than half the quantity of ſeed will do for an acre, and the ground may be hoed, both to deſtroy the weeds, and earth up the Peas. The uſual time for ſowing theſe Peas is the middle of march or the beginning of april, on warm land; but on cold ground they ſhould be ſown a fortnight or three weeks later. In the common way of ſowing they allow three buſhels or more to an acre; but if they are drilled, one buſhel and a half will be full enough.

The Green and Maple Rouncivals require a ſtronger ſoil than the white, and ſhould be ſown a little later in the ſpring; the drills alſo ſhould be at a greater diſtance, as two feet and a half or three feet, for this ſort is apt to grow rank, eſpecially in a wet ſeaſon. The ground between the rows ſhould be hoed two or three times.

The Gray Peas thrive beſt on a ſtrong clayey land: theſe are commonly ſown under furrow; but by this method they are always too thick, and do not come up regularly, they therefore ſhould alſo be ſown in drills. Being much hardier than the former ſorts, theſe may be ſown towards the end of february.

The beſt method to ſow theſe Peas is to draw a drill with a hoe by a line two inches deep, and having ſcattered the ſeeds in it, to draw the earth over them with a rake. This is a quick method for gardens; but where they are ſown in fields, they commonly make a ſhallow furrow with the plough, and harrow in the ſeeds. Where labour is dear, it is a great expenſe to weed and earth up the plants by hand-hoeing; but it may be eaſily effected by a horſe-hoe, which will not only kill the weeds, but by ſtirring the ſoil render it mellow, greatly promote the growth of the plants, and render the ground fitter to receive another crop the following ſeaſon.

Saving Seed.

When any ſorts are intended for ſeed, there ſhould be as many rows left ungathered, as may be thought neceſſary to furniſh a ſufficient quantity; and when the Peas are in flower, they ſhould be carefully looked over, to draw out all the plants which are not of the right ſort; for there will always be ſome roguiſh plants, as the gardeners term them, which, if left, will cauſe the others to degenerate. The reſt muſt remain until their pods are changed brown and begin to ſplit; when the plants ſhould be pulled up, and ſtacked till winter, or elſe threſhed out as ſoon as they are dry, and put up in ſacks. Let them not remain too long abroad after they are ripe, for wet will rot them; and heat after rain will cauſe the pods to burſt and throw out the ſeeds.

By diligently drawing out bad plants, and marking thoſe which come earlieſt to flower, the gardeners have greatly improved their Peas of late years, and are conſtantly endeavouring to get forwarder varieties.

As it is ſcarcely an object with gentlemen to ſave their own ſeed, except in the caſe of having a particular ſort which they cannot purchaſe; ſo it is not adviſable to continue ſowing the ſame ſeed longer than two years on the ſame ground.

[Peas on Hotbeds.

Sow under a ſouth wall about the 24th of ſeptember; put them very near the wall, and when they peep out of the ground, cover them with earth as they advance, about an inch thick: in froſt protect them with peas-haulm, wheat-ſtraw, or dry fern. About the end of january, if the winter has been mild, the Peas will be ſome inches above ground: then make a hot-bed in the manner directed for Cucumbers, except that the dung may be only two feet thick.

Make the hot-bed four feet broad, level the dung well, and cover it with ten inches of light virgin earth. The frames ſhould be two feet high in the back, ſloping to fifteen inches in front. Having put theſe on the hot-bed, in the day time tilt up the glaſſes, that the ſteam may paſs off. When the bed is become of a moderate temperature, take up the Peas with a ball of earth to their roots, and plant them

fourteen inches row from row, and four inches plant from plant. Water them moderately at planting, but afterwards ſparingly, for much water makes them grow to ſtraw, and produce little fruit. Shade the beds from eleven until the ſun is near off, and at the ſame time give them air in mild weather. Cover the dung which ſurrounds the frames with earth, that when the glaſſes are tilted up to give air, the Peas may not be blighted with the rancid ſteam of the dung.

Dwarf Peas, and ſome of the early Hotſpurs may alſo be ſown in pots in ſeptember, ſinking the pots in the common earth; and when froſt ſets ſtrong in, the pots may be ſet under cover, in a green-houſe or glaſs-caſe. Make a border in front of the green-houſe of good freſh earth; and about the beginning of december take the Peas out of the pots, and plant them in the border in rows at three feet diſtance, and ten inches aſunder in the rows, watering them gently. Give them air, and draw the earth up to their roots. When they are in bloom give them a good portion of water, which has ſtood in the houſe twenty-four hours. A crop of Peas may be thus obtained about the middle of march.

Peas in the open ground.

It is better to ſow two rows of Peas cloſe together, that is, within ten inches or a foot of each other, leaving between each pair of thoſe cloſe rows an interſtice of two feet for the dwarf Peas, of three feet for the early climbers, and three feet and a half or four feet for the larger ſorts. The reaſon of this is, that the ſtakes or buſhes being placed between two cloſe rows will ſupport both, whereas in the common way of ſowing Peas, every row muſt have a row of buſhes. Gardeners who vie with one another for the earlieſt Peas, never ſtake them, alledging that it gives them liberty to grow too much to haulm, and that the early fruit will thereby be prevented from ripening ſo ſoon. This may be the caſe in ſandy ſoils; but in ſtronger lands, if the Peas, eſpecially the larger ſorts, are not ſupported, they will infallibly rot, before they can be fit for the table[b].

Field Culture of Peas.

Peas are cultivated by the farmer either alone or with Beans. In ſtrong lands the Bean is the predominant crop, in lighter lands the Pea. In ſuch lands the Pea is more frequently ſowed alone. The ſorts commonly ſowed in fields are the Gray, the Blue, and the White. Of theſe there are innumerable tranſient varities in our different counties. In Suſſolk, where the culture of the Pea is well underſtood, they reckon 1. The common White. 2. The Forty-day. 3. The Charlton. 4. The Blue. 5. The large Gray. 6. The ſmall Gray. 7. The Speckled. 8. The large Dutch. 9. The Dun.

Time of ſowing.

The Gray Peas will bear being ſown in autumn, and it is a common practice in Hertfordſhire to begin Pea-ſowing as ſoon as the Wheat-ſeed is over. The Peas which are ſown in autumn or before Chriſtmas are late ſorts, and therefore are not proper where the crop is to be harveſted time enough for Turneps.

The Forty-day, or the Charlton Pea, ſhould be ſown early in march, and if Turneps are intended, not later than that month: late ſown crops are ſubject to the green fly or dolphin; and to avoid that it is recommended to ſow in february. If Peas are not intended as a preparation for Turneps, many ſow before Chriſtmas; but this muſt be on dry land, and in a dry time; for if they are ſown after rain or ſnow, the crop will ſuffer.

Tillage.

A common method in Suffolk is to put in Peas on a lay with only one ploughing; the ſeed to be pricked in with iron dibbles. This method ſucceeds greatly: but it ſhould be practiced only on loams and good ſand: very poor ſand will not do for Peas; and on clay Beans anſwer far better.

When the crop is put on a ſtubble, the land ſhould be ploughed in autumn, and, if the ſeaſon requires it, twice in the ſpring; but one ploughing, judiciouſly timed, may do better than two. The ſeed may be either ploughed or harrowed in; if the former, it muſt not be above three inches deep: but harrowing in is ſafer, if the harrows let them in two inches; in this caſe they muſt be watched againſt rooks and pigeons.

Quantity of Seed.

Leſs than three buſhels an acre ought not to be ſown broadcaſt. One great object, perhaps the greateſt in this crop, is to procure a thick cover over the ſoil, to deſtroy weeds, and breed a moiſt fermentation on the ſurface; which can never be effected with a thin crop. If the produce only be regarded, and the hoes are deſigned to be perpetually at work, two buſhels and even leſs are enough.

Two buſhels is the common allowance. Some ſow four buſhels, but that is clearly too much.

Drilling and Dibbling.

When Peas are planted by hand, on a turf ploughed once, it is called dibbling. A man walking backwards, that he may not tread on the holes, ſtrikes a dibble, that makes two holes, ſometimes three, on a nine inch furrow, and is followed by boys, who drop a Pea in every hole. Both theſe operations are in Suffolk done for eight ſhillings an acre. They are covered by a buſh-harrow. The Peas come up about four inches every way; and being ſo cloſe neither want nor admit of hoeing. Seven pecks or two buſhels of ſeed do an acre.

Drilling is uſed on land in tilth. The rows ſhould be double at eighteen inches aſunder, and then an interval of two feet: in the hoeing attention ſhould be given to make the two rows clalp together.

Hoeing and Weeding.

Drilled Peas ſhould be hand-hoed well whilſt the crop is young, and afterwards in the intervals, taking care not to tread on the plants. If weeds get up afterwards, they ought not to be meddled with; for the crop will be pulled about and ſpoiled in getting them out. Even horſe-hoeing ſhould not be ventured after the plants are near maturity. Some hand-hoe once, and horſe-hoe twice or thrice afterwards, as there may be occaſion.

If broadcaſt Peas be hoed, it muſt be whilſt they are very young: when they cling together, more miſchief is done by going among them, than good by the hoe. If the land was in good order, and the ſeed ſown thick enough, they will ſtand in no need of hoeing.

Harveſting.

Peas, when near ripe, are very apt to be devoured by rooks, pigeons, &c. they ſhould therefore be well watched. They are generally cut with a tool called a *peas-make*, which is half an old ſcythe fixed in a handle, with which they are rolled as they are cut into ſmall bundles called *wads*, in other places *wiſps*. Theſe ſhould be ſmall to dry well, and ſhould lie out ſome days to wither. In ſome counties they are reaped with a hook. They are ſometimes mown, but it is a very bad practice.

Preparation for Turnept.

By ſowing the Charlton, or Forty-day Pea early in march, the crop will be cleared in june, or the firſt week in july, which is a good ſeaſon for Turneps, and on all dry ſoils, ought never to be neglected. If the harveſt happens to be later, the wads ſhould be laid in rows, and the ploughs ſent in, by which a week or perhaps ten days may be gained. The advantages of this practice muſt be obvious, when it is conſidered that a thick ſmothering crop of Peas not only chokes weeds, but improves the ſoil, particularly in leaving the ſurface looſe and friable, from the putrefactive fermentation carried on under the crop; by retaining moiſture, and excluding the ſun; and if the land be ploughed directly, which is a great point, though much neglected, proves a fine preparation for Turneps. The Peas are not the only gain, but the ſaving in tillage; for by this means the latter crop is put in upon one ploughing only, which can be effected no other way.

Produce.

Of all crops this is the moſt uncertain, and it is rarely conſiderable, two quarters and a half an acre are about the average produce: now and then four,

[b] Juſtice's Brit. Gard. p. 102 and 195.

four and a half, and five quarters are gained, but probably not one year in ten.

The greateſt burdens of Straw, in crops that perfectly cover the ground, do not yield a very large produce. If a man ſhades his land well, and gets two and a half or three quarters on an acre, he has reaſon to be ſatisfied with the produce.

Application.

The principal application of Peas is for fattening hogs. No other grain agrees better with them, eſpecially when they are harveſted dry and ground into meal.

Bread made of this meal was formerly much in uſe in ſome parts of Scotland, but of late it is ſaid to have been almoſt wholly given up. It is reported to be mixed with wheat flour by the millers, when Peas are reaſonable.

The Straw, if well harveſted, is a very conſiderable object for fodder; it is little inferior to ordinary Hay, and all ſorts of cattle thrive well on it; but it is apt to gripe ſome horſes, if given too ſoon. It ſhould not be uſed before january; and if it is found to have this effect, a few Turneps, Cabbages, Carrots or Potatoes, will correct it[1].

Culture in Kent.

The following varieties are commonly cultivated by Kentiſh farmers, viz. The Reading and Leadman's Dwarfs, for breaking Peas and fattening hogs; the Gray Polt; Nutmeg Gray; Early Dun, in Eaſt Kent called Sutton's Gray; and Shepherd's Gray: all which are for fattening hogs. Beſides theſe, many others are cultivated for ſupplying the London ſeedſmen.

All are drilled in rows, about eighteen inches apart, from the middle of february to the end of march, and ſometimes later. They are hand and horſe-hoed, and are harveſted from the middle of july till the end of ſeptember. They are reaped with a hook, called a podware hook. The produce is from one and a half to five quarters on an acre. Leadman's Dwarf, and the Early Gray are thought to be the moſt prolific. The Early Charlton is frequently off the ground in time to get a good crop of Turneps[2].

Culture in Middleſex.

About three thouſand acres are annually cropped with Peas in this county; they are much on the increaſe, and are cultivated in the moſt clean and garden-like manner.

Preparation, &c.

On upwards of two thouſand acres they ſucceed a clean crop of Beans; in which caſe the Bean ſtubble is ploughed up with a thin furrow about january, and during every dry time till march, and ſoon afterwards re-ploughed a full depth. The water-furrows are kept open, and the land remains in this ſtate till ſeed time.

Peas ſown with an intention of being ſent to market green, ſucceed Clover, Corn or any other crop. In Eſſex they frequently follow Potatoes. As long as the land is cleared and properly prepared, which will generally be accompliſhed by the middle of november, White Hotſpur Peas are planted for podding for the London market.

The land is generally a dry loamy ſand, and manure is conſtantly ploughed in during january and february; after which it is harrowed, and is then fit for the reception of the ſeed, which is put into drills fifteen inches apart, moſtly made acroſs, but occaſionally along the ridges; and the ſeed is covered in with the hoe. Some perſons buſh-harrow the whole. The quantity of ſeed ſown is generally about three buſhels an acre. Such as are intended for podding, are put into the ground every week or fortnight, during the months of january, february and march, for a regular ſucceſſion of crops to ſupply the market daily. Gray Peas are ſown during the whole of march.

Culture.

The intervals between the rows are twice hand-hoed, once when the plants are about three inches high, and again a ſhort time before they are in bloſſom. The rows are laid down and well earthed up by the laſt hoeing, and they are carefully weeded by hand.

Harveſting.

Againſt the podding ſeaſon poor people from every part of London apply to the farmers who have early Peas. Many of the richer ſort ſell their Peas by the acre to perſons who employ the podders, and who gather by the ſack of four buſhels. About forty podders are ſet to ten acres. Carts are loaded and ſent off ſo as to be delivered to the ſaleſmen at market from three to five o'clock in the morning.

In Eſſex they are uſually ſold in the field at 5l. an acre, reſerving the haulm for fodder.

The Peas are uſually picked twice over, after which, if from a ſcarcity of hands any be left for ſeed, it is eſteemed a loſs. When hands are in plenty, the crop is picked clean, the haulm is cut up with hooks, removed on to every fifth ridge, or into a graſs field to dry: it is then put into ſtacks for horſe-feed, and the land is prepared as ſpeedily as poſſible for Turneps. The podders are paid for the Marrowfats and other larger Peas about 1s. and for the ſmaller 16d. or 18d. per ſack. They are ſold in the market at from 5s. to 17s. per ſack: ſo that this crop may be expected to return from leſs than 5l. to upwards of 20l. per acre.

The Gray and other late Peas ſtand to ripen their ſeed; they are then cut up with hooks, rolled into wads, turned once or twice, and then ſtacked up.

Application.

About one-third of the ſeed is eaten by men, and the reſt by hogs. The haulm cut green, and dried quickly whilſt in the full vigour of its ſap is nearly as good as hay for cattle and horſes[1].

2. Sea Pea may be propagated by ſeeds or by the roots. Though a native of the ſea coaſt, it is eaſily cultivated in gardens.]

3. Yellow-flowered Pea may be managed in the ſame way with the Common Pea.

[PISUM. See *Pauſſinia*, *Vicia*, *Ulva*.]

——— cordatum & veſicarium. See *Cardioſpermum*.

[——— quadratum. See *Lotus*.

PITAJAYA. See *Cactus*.

PITCAIRNIA. (*So named by Monſ. L'Heritier in honour of William Pitcairn, M. D. an eminent phyſician of London, and a collector of foreign plants, particularly from the Alps.*)

L'Herit. ſert. angl. 7. *t.* 11. *Ait. kew.* 1. 401. *Swartz deſcr.* 578. *t.* 12. Hopetis. *Soland. Swartz prodr.* 56. *Lin. gen. ed. Schreb.* n. 1741. *p.* 798.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Coronariæ*. *Bromeliæ*, Juſſ.

GENERIC CHARACTER.

CAL. one-leafed, three-parted, half ſuperior, tubular, ſwelling at the baſe, permanent: *ſegments* lanceolate, erect.

COR. three-petalled. *Petals* linear, convoluted; with a nectariferous *ſcale* at the baſe.

STAM. *Filaments* ſix, inſerted into the receptacle. *Anthers* oblong, erect.

PIST. *Germ* half-ſuperior, three-cornered. *Style* three-grooved. *Stigmas* three contorted.

PER. *Capſules* three, opening inwards:—three-cornered, tricoccous, opening inwards three ways. *L'Heritier.*—three-celled, with the cells opening inwards. *Swartz.*

SEEDS very numerous, winged or membranaceous-appendicled on both ſides, faſtened to the receptacle.

OBS. *The place of this genus is between Tillandſia and Burmannia, according to Swartz; between Bromelia and Tillandſia, according to L'Heritier.*

ESSENTIAL CHARACTER.

Cal. three-leaved or three-parted, half-ſuperior. *Cor.* three-petalled, with a ſcale at the baſe of each petal. *Stigmas* three, contorted. *Capſ.* three, opening inwards. *Seeds* winged.

[1] Young's Annals, n. 186. p. 113 to 122.

[2] Boys's ſurvey, p. 90.

[1] Middleton's ſurvey, p. 193 & 265. Vancouver's Eſſex, p. 89.

SPECIES.

1. Pitcairnia bromeliæfolia. *Scarlet Pitcairnia.*
L'Herit. ſert. angl. 7. t. 11. Ait. kew. 1. 401. Swartz deſcr. 580. Schneevogt. icon. faſc. 4. t. 11.
Hepetis anguſtifolia. *Swartz prodr. 56.*
Leaves ciliate-ſpiny, peduncles and germs very ſmooth.
2. Pitcairnia anguſtifolia. *Narrow-leaved Pitcairnia.*
Ait. kew. 1. 401.
Leaves ciliate-ſpiny, peduncles and germs tomentoſe.
3. Pitcairnia latifolia. *Broad-leaved Pitcairnia.*
Ait. kew. 1. 401.
Leaves quite entire ſomewhat ſpiny at the baſe.

DESCRIPTIONS, &c.

1. Root perennial, with long filiform ſubdivided fibres. Leaves radical, numerous, ſheathing at the baſe, enſiform, three or four feet long, half an inch wide, membranaceous, ſomewhat glaucous, looſe, ſerrate-ſpiny at the edge; ſpines recurved, ſhining, black. Scape upright, two feet high or more, round, covered with linear-lanceolate bractes, ſheathing at the baſe, diſtant, long, the upper ones ſcarlet, flowering at the top. Peduncles ſcattered, diſtant, filiform, naked, ſmooth, an inch and half long, almoſt equal, one-flowered, have little membranaceous bractes under them. Petals and filaments blood-red. Stigmas red. Seeds brown, with one edge and the tip white.
Native of Jamaica, on the ſhady ſides and precipices of the mountains[n]. Cultivated in 1781, by Lord Aſhburton. It flowers in june[o].
2. Native of the iſland of Santa Cruz. Introduced in 1777, by John Ryan, Eſq. It flowers in december and january.
3. Native of the Weſt Indies. Introduced in 1785, by Mr. Alexander Anderſon. It flowers in auguſt[p].

PITHYUSA. See *Euphorbia.*
PITSJEGAM. See *Jaſminum.*]
PITTONIA. See *Tournefortia.*
[PITTONIÆ SIMILIS. See *Ehretia.*
PITTOSPORUM. (*From πίττα, to ſmear with pitch or turpentine, and σπορὰ, ſatio, the action of ſowing. Should it not rather have been* Pittoſperma, *from σπέρμα, a ſeed?*)
Banks. Lin. gen. Schreb. n. 379. Gærtn. t. 59.
Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, inferior, deciduous.
COR. *Petals* five: *claws* concave, converging into a pitcher-ſhaped tube: *borders* ovate-oblong, ſpreading.
STAM. *Filaments* five.
PIST. *Germ* ſuperior, roundiſh. *Style* filiform.
PER. *Capſule* ſubglobular-angular, mucronate, three-celled, three-valved: *cells* flowing with a liquid reſin: *partitions* contrary to the valves.
SEEDS three or four, angular, faſtened to the partition.

ESSENTIAL CHARACTER.

Cal. deciduous. *Pet.* five, converging into a tube. *Capſ.* two to five-valved, two to five-celled. *Seeds* covered with pulp.

SPECIES.

1. Pittoſporum coriaceum. *Thick-leaved Pittoſporum.*
Ait. kew. 3. 488. Vahl ſymb. 2. 43. Lin. ſpec. ed. Willd. 1145.
Leaves obovate obtuſe very ſmooth coriaceous, capſules two-valved.
2. Pittoſporum tenuifolium. *Thin-leaved Pittoſporum.*
Gærtn. fruct. 1. 286.
Capſules three-valved.
3. Pittoſporum umbellatum. *Umbelled Pittoſporum.*
Gærtn. fruct. 1. 286.
Pittoſporoides umbellata. *Soland. muſt.*
Capſules two-valved.

DESCRIPTIONS, &c.

1. This is a tree with proliferous branches, three or four to each whorl, round, with an aſh-coloured bark, from very ſhort ovate imbricate buds. Leaves under each whorl three or four, two inches long, oblong, moſtly obovate, quite blunt and entire, even, pale green, ending at the baſe in a petiole an inch in length. Peduncle from a diſtinct bud, ſolitary, an inch in length, tomentoſe, many-flowered. Flowers on umbelled pedicels, the length of the peduncle, tomentoſe, five, the two middle ones two or five-flowered; the lateral one-flowered. Calyx tomentoſe, five-cleft: ſegments oblong, blunt. Corolla ſmooth, twice as long as the calyx. Petals linear, blunt.
Native of the Canary iſlands[q]. Introduced in 1787, by James Webſter, Eſq. It flowers in may[r].
2. Capſule ſubglobular, dagger-pointed at the top, obſcurely three-cornered, three-celled, three-valved, on the outſide ſomewhat wrinkled, ſmoky; within bay-coloured, and having a yelloviſh reſinous juice. Seeds three or four in each cell, variouſly angular, but commonly like the ſtones of the grape, marked on the back with a ſhallow groove, black, ſhining, anointed with turpentine.
3. Capſule ſubglobular, with two ſwellings, the tranſverſe diameter longeſt, dagger-pointed at top, having a groove on both ſides, and a ridge at both edges, from the prominent ſuture, ſhagreened all over, two-celled, two-valved: cells reſinous. Seeds four in each cell, very irregular, wrinkled, black, ſhining[s].

PLAGIANTHUS. (*So named by Forſter from πλάγιος, oblique, and ἄνθος, a flower. The petals being ſo diſpoſed, that the flowers ſeem to be bent down ſideways.*)
Lin. gen. Schreb. n. 1121. Forſt. gen. t. 43.
Claſſ. 16. 5. Monadelphia Dodecandria.

GENERIC CHARACTER.

CAL. *Perianth* five-cleft, ſhort: *ſegments* very ſmall.
COR. *Petals* five, ovate: two cloſer together, more remote than the reſt.
STAM. *Filaments* collected into a cylinder. *Anthers* about twelve, ovate, cluſtered on the top of the cylinder.
PIST. *Germ* ovate, very ſmall. *Style* filiform, concealed within the cylinder of ſtamens. *Stigma* club-ſhaped.
PER. *Berry.*

ESSENTIAL CHARACTER.

Cal. five-cleft. *Pet.* five, two approximating, remote from the other three. *Berry.*

SPECIES.

1. Plagianthus divaricatus.
Forſt. prodr. n. 254.
Native of New Zealand.

PLANE TREE. See *Platanus.*
PLANTAGINELLA. See *Eriocaulon* and *Limoſella.*
PLANTAGINI ACCEDENS. } See *Pontederia.*
PLANTAGINIS FOLIIS. }
PLANTAGO. (*Planta tangenda*, Linn.—*A latitudine ſolierum plantam pedis æmulantium.* Ray. *From the broad leaves, like the ſole of the foot.*)
Lin. gen. n. 142. Reich. n. 148. Schreb. n. 186. Tournef. t. 48. Juſſ. 90. Gærtn. t. 51.
Coronopus. *Tournef.* Pſyllium. *Tournef.*
Claſſ. 4. 1. Tetrandria Monogynia.
Nat. order of *Plantagines*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-cleft, erect, very ſhort, permanent.
COR. one-petalled, permanent, ſhrivelling: *tube* cylindric-globular: *border* four-cleft, reflex: *ſegments* ovate, acute.
STAM. *Filaments* four, capillary, erect, very long. *Anthers* ſomewhat oblong, compreſſed, incumbent.
PIST. *Germ* ovate. *Style* filiform, ſhorter by half than the ſtamens. *Stigma* ſimple.
PER. *Capſule* ovate, two-celled, opening tranſverſely, having a looſe partition.
SEEDS ſeveral or ſolitary, oblong.
OBS. *The calyx in ſome ſpecies is irregular, in others regular.*

ESSENTIAL CHARACTER.

Cal. four-cleft. *Cor.* four-cleft, with the border reflex. *Stam.* very long. *Capſ.* two-celled, cut tranſverſely.

SPECIES.

* *With a naked ſcape.*

1. Plantago major. *Great Plantain.*
Lin. ſpec. 163. Syſt. 155. Reich. 1. 319. Willd. 641. hort. cliff. 43. fl. lapp. n. 62. ſuec. n. 122. mat. med. 51. Woodv. med. bot. 39. t. 14. Gærtn. fruct. 1. 236. Lamarck illuſtr. n. 1650. t. 85. Hudſ. angl. 63. Wither. arr. ed. 3. 195. Curt.

[n] Swartz deſcr. [o] Hort. kew. [p] Idem. [q] Vahl. [r] Hort. kew. [s] Gærtner.

lond. 2. 11. *Smith angl.* 182. *Relh. cant. n.* 115. *Sibth. oxon n.* 174. *Fl. dan. t.* 461. *Hall. helv. n.* 660. *Scop. carn. n.* 161. *Pollich pal. n.* 159. *Leers herborn. n.* 106. *Neck. gallob.* 87. *Krock. sile. n.* 231. *Villars dauph.* 2. 300. *Gmel. sib.* 4. 71. *n.* 2. *t.* 36. *Desfont. atlant.* 134. *Blackw. t.* 35. *Knorr. del. bort.* 2. *t.* P. *Berg. phyt.* 131. *Plenck, ic.* 58. *Fuchf. hift.* 38. *Dod. pempt.* 107. 1. *Camer. epit.* 261.

P. major, folio glabro non laciniato. *Baub. hift.* 3. 502.

P. media. *Matth.* 479.

P. latifolia. *Ger.* 338. 1. *emac.* 419. 1.

P. latif. lævis. *Lob. obf.* 162. 2. *ic.* 303.

P. lat. vulgaris. *Park. theat.* 493. *n.* 1, 2. *f.* 1. *Raii hift.* 876. *fyn.* 314. *Petiv. brit.* 2. 4. 1.

P. lat. glabra vulga. *Mor. hift.* 3. *f.* 8. *t.* 15. *f.* 2.

P. rubea. *Brunf. herb.* 1. 25.

β. P. latif. glabra minor. *Baub. pin.* 189. *Tabern. ic.* 731. *Raii hift.* 876. 2. *fyn.* 314. 2. *Ger.* 339. 3. *Baub. hift.* 3. 505. 3. *With. arr. var.* 1.

γ. P. latif. glabra dentata. *Petiv. brit. t.* 4. *f.* 2. *Park. theat.* 494. 5. *d. Wither. var.* 2.

δ. P. pyramidalis. *Wither. arr. ed.* 3. 195. *var.* 3. *Ger.* 340. 5. *emac.* 420. 4. *Park. theat.* 494. 5 *b. Baub. hift.* 3. 503. 1. *Mor.* 8. 15. 3. *b, c. Petiv.* 4. 4.

ε. P. roſea. *Roſe Plantain.*
Baub. hift. 3. 503. 1. *Raii hift.* 876.

P. latif. roſea, flor. quaſi in ſpica diſpoſitis. *Baub. pin.* 189. *Park.* 494. 5. *c. Ger. emac.* 420. 4. *Mor. hift.* 8. 15. 3. *a. Pet.* 4. 4. *Hudſ.* 63. *d. Wither. var.* 4.

ζ. P. major paniculâ ſparſa. *Baub. hift.* 3. 503. *Raii hift.* 877. *fyn.* 314. 4. *Petiv.* 4. 5. *Hudſ.* 63. *Wither. var.* 5.

P. latif. ſpica multiplici ſparſa. *Baub. pin.* 189. *Mor.* 8. 15. 4.

P. latif. ſpiralis. *Park. theat.* 494. 5. *a.*

P. panic. ſparſis. *Ger. emac.* 420. 6. *Dod.* 107. 2. *Lob. obf.* 162. 4.
Beſem Plantain.

Leaves ovate ſmoothiſh ſhorter than the petiole, ſcape round, ſpike having the florets imbricate, ſeeds very many.

2. Plantago craſſa. *Thick-leaved Plantain.*
Lin. ſpec. ed. Willd. 641. *Willd. phytog.* 1. 3. *n.* 11.

P. craſſifolia. *Roth. catalect. bot.* 1. 29.

P. criſpa. *Jacqu. collect. ſuppl.* 34. *t.* 16.

P. bullata. *Donn. hort. cant.* 15.

Leaves obovate ſhining waved ſomewhat fleſhy ſubſeſſile, ſcape compreſſed below, flowers imbricate, remote at the baſe.

3. Plantago aſiatica. *Aſiatic Plantain.*
Lin. ſpec. 163. *Reich.* 1. 319. *ed. Willd.* 642. *Gmel. ſib.* 4. *n.* 2. *t.* 37?

Leaves ovate ſmooth, ſcape angular, ſpike having the florets diſtinct.

4. Plantago maxima. *Greateſt Plantain.*
Lin. ſpec. ed. Willd. 642. *Ait. kew.* 1. 151. *Jacqu. ic. rar.* 1. *t.* 26. *collect.* 1. 82. *Gmel. ſib.* 4. 71. *t.* 35.

Leaves ovate ſomewhat toothletted pubeſcent nine-nerved, ſpikes cylindrical imbricate, ſcape round.

5. Plantago media. *Hoary Plantain.*
Lin. ſpec. 163. *fyſt.* 155. *Reich.* 1. 319. *Willd.* 642. *bort. cliff.* 56. *fl. ſuec. n.* 129, 130. *Gærtn. fruct.* 1. 237. *Hudſ. angl.* 63. *Wither. arr. ed.* 3. 196. *Smith angl.* 183. *Curt. lond.* 4. 14. 252. *Relh. cant. n.* 116. *Sibth. oxon. n.* 175. *Hall. helv. n.* 659. *Scop. carn. n.* 162. *Fl. dan. t.* 581. *Pollich pal. n.* 160. *Leers herborn. n.* 107. *Krock. ſile. n.* 232. *Villars dauph.* 2. 301. *Allion. pedem. n.* 295. *Berg. phyt. t.* 199. *Plenck, ic. t.* 59. *Camer. epit.* 262. *Dod. pempt.* 107. 4. *Fuchſ. hiſt.* 39.

P. incana. *Ger.* 338. 2. *emac.* 419. 2. *Raii hiſt.* 877.

P. major incana. *Cluſ. hiſt.* 2. 109. 1. *Park. theat.* 493. 3. *Raii ſyn.* 314. *Petiv. brit. t.* 4. *f.* 3.

P. major hirſuta. *Baub. hiſt.* 3. 504. 1.

P. latifolia incana. *Baub. pin.* 189. *Mor. hiſt.* 8. *t.* 15. *f.* 6.

P. major. *Matth.* 480. *Brunf. herb.* 1. 23.

β. P. latifolia hirſuta minor. *Baub. pin.* 189.

P. lat. incana, ſpicis variis. *Baub. pin.* 189. *Mor. hiſt.* 3. *f.* 8. *t.* 15. *f.* 7.

Leaves ovate pubeſcent longer than the petiole, ſcape round, ſpike cylindrical, ſeeds ſolitary.

6. Plantago virginica. *Virginian Plantain.*
Lin. ſpec. 164. *fyſt.* 155. *Reich.* 1. 320. *Will.* 643. *Giſeke ic. faſc.* 1. *n.* 4. *Gron. virg.* 16. *Mor. hiſt.* 3. 259. *ſ.* 8. *t.* 15. *f.* 8. *Pet. gaz. t.* 1. *f.* 10.

Leaves lanceolate-ovate pubeſcent ſomewhat toothletted, ſpikes having the flowers remote, ſcape round.

7. Plantago altiſſima. *Tall Plantain.*
Lin. ſpec. 164. *Reich.* 1. 320. *Willd.* 643. *Jacqu. obſ.* 4. *t.* 83. *Till. piſ* 146. *Krock. ſilef. n.* 233.

Leaves lanceolate five-nerved toothed ſmooth, ſpike oblong-cylindrical, ſcape angular.

8. Plantago lanceolata. *Ribwort Plantain.*
Lin. ſpec. 164. *fyſt.* 155. *Reich.* 1. 321. *Willd.* 643. *vir. cliff.* 9. *bort. cliff.* 36. *fl. ſuec. n.* 131. *Hudſ. angl.* 64. *Wither. arr. ed.* 3. 196. *Lightf. ſcot.* 118. *Smith angl.* 184. *Engl. bot. t.* 507. *Curt. lond.* 2. 10. *Relh. cant. n.* 117. *Sibth. oxon. n.* 176. *Fl. ruſſ. t.* 67. *Hall. helv. n.* 656. *Fl. dan. n.* 437. *Pollich pal. n.* 161. *Neck. gallob.* 87. *Scop. carn. n.* 163. *Leers herborn. n.* 108. *Krock. ſilef. n.* 234. *Villars dauph.* 2. 301. *Desfont. atlant.* 134. *Blackw. t.* 14. *Berg. phyt. t.* 133. *Plenck, ic.* 60. *Trag.* 225. 2. *Baub. hiſt.* 3. 505. 1. *Tabern. ic.* 735. *Anderſ. eſſays* 2. 253. *t.* 15.

P. anguſtifolia major. *Baub. pin.* 189. *Tournef. inſt.* 127. *Mor. hiſt. ſ.* 8. *t.* 15. *f.* 9.

P. longa. *Matth.* 481. *Camer. epit.* 263.

P. minor. *Dod. pempt.* 107. 3. *Brunf. herb.* 1. 24.

P. quinquenervia. *Lob. ic.* 305. *Ger.* 341. 1. *emac.* 422. 1. *Raii hiſt.* 877. *fyn.* 314.—major. *Park. theat.* 496. 1 *Petiv. brit t.* 4. *f.* 6.

β. P. trinervia folio anguſtiſſimo. *Baub. pin.* 189. *prodr.* 93. *Raii hiſt.* 878. 10. *Ger. prov.* 338. *t.* 12.

P. anguſtifolia minor. *Tabern. ic.* 732. *Ger.* 339. 4. *Park. theat.* 496. 3. *Raii ſyn.* 315. *Petiv. brit. t.* 4. *f.* 7.

P. lanceolata minima. *Baub. hiſt.* 3. 505. 2.

γ. P. anguſtifolia major, caulum ſummitate foliofa. *Baub. pin.* 189. *Ger.* 341. 2. *Baub. hiſt.* 3. 506. 1. *Mor. hiſt. ſ.* 8. *t.* 15. *f.* 10.

δ. P. anguſt. minor prolifera. *Pluk. alm.* 298. *Raii ſyn.* 315. *Cluſ. hiſt.* 2. 110. *Baub. hiſt* 3. 506. 2. *Mor.* 8. 16. 10. *Petiv.* 4. 8.

Leaves lanceolate, ſpike ſubovate naked, ſcape angular.

9. Plantago capenſis. *Cape Plantain.*
Lin. ſpec. ed. Willd. 644. *Thunb. prodr.* 29.

Leaves elliptic, flowers of the ſpike diſtinct.

10. Plantago Lagopus. *Round-headed Plantain.*
Lin. ſpec. 165. *Reich.* 1. 321. *Willd.* 644. *Desfont. atlant.* 135. *Poiret itin.* 2. 112.

P. anguſtifolia, panicula Lagopi. *Baub. pin.* 189. *prodr.* 93. *Tournef. inſt.* 127. *Mor. hiſt. ſ.* 8. *t.* 16. *f.* 13. *Shaw ſpecim. n.* 484.

P. Catanance. *Rauw. itin.* 4. *t.* 6.

Leaves lanceolate ſomewhat toothletted, ſpike ovate hirſute, ſcape round.

11. Plantago lagopodioides.
Desfont. atlant. 135. *t.* 39. *f.* 2.

Leaves lanceolate nerved ciliate toothletted, ſtem leafy, peduncles axillary, ſpikes ovate, bractes membranaceous.

12 Plantago luſitanica. *Portugal Plantain.*
Lin. ſpec. 1667. *fyſt.* 155. *Reich.* 1. 321. *Willd.* 644. *Desfont. atlant.* 135. *Barrel. rar.* 1. 745.

Leaves broad-lanceolate three-nerved ſomewhat toothed and hairy, ſcape angular, ſpike oblong hirſute.

13. Plantago patagonica. *Patagonian Plantain.*
Lin. ſpec. ed. Willd. 645. *Jacqu. ic. rar.* 2. *t.* 306. *collect. ſuppl.* 35.

Leaves lanceolate-linear, ſomewhat channelled quite entire woolly-haired, ſcape round hirſute, ſpikes cylindrical, ſtamens not exceeding in length the tube of the corolla.

14. Plantago albicans. *Woolly Plantain.*
Lin. ſpec. 165. *Reich.* 1. 322. *Willd.* 645. *hort. cliff.* 37. *Sauv. monſp.* 26. *Retz. obſ.* 1. 11. *Forſk. deſcr.* 31. *n.* 4. *Deſfont. atlant.* 136. *Villars dauph.* 2. 303.
P. anguſtifolia albida hiſpanica. *Tournef. inſt.* 127.
P. ang. alb. *Dod. pempt.* 111.
P. mollis ſ. Holoſteum hirſutum albicans majus. *Mor. hiſt. ſ.* 8. *t.* 16. *f.* 28.
Holoſtium. *Camer. epit.* 707.
Holoſteum hirſ. alb. majus. *Bauh. pin.* 190.
H. ſalmanticenſe majus. *Cluſ. hiſt.* 2. 110. *Lob. ic.* 307. *Tabern. ic.* 735. *Ger.* 342. 1. *emac.* 423. 1.
H. plantagini ſimile. *Bauh. hiſt.* 3. 508. *Raii hiſt.* 880.
β. H. hirſ. alb. minus. *Bauh. pin.* 190.—ſalmanticenſe minus. *Cluſ. Raii hiſt.* 880. *n.* 7.
Leaves lanceolate oblique villoſe, ſpike cylindrical, erect, ſcape round.
15. Plantago argentea. *Silvery Plantain.*
Deſfont. atlant. 136.
Leaves narrow-lanceolate quite entire ſilky hoary, ſcape not ſtriated, ſpike round, flowers very much crowded.
16. Plantago hirſuta. *Hairy Plantain.*
Lin. ſpec. ed. Willd. 645. *Thunb. prodr.* 29.
Leaves linear ciliate, ſpike cylindrical, ſcape hirſute.
17. Plantago alpina. *Alpine Plantain.*
Lin. ſpec. 165. *ſyſt.* 156. *Reich.* 1. 322. *Willd.* 645. *Hall. helv. n.* 657. *Bocc. muſ.* 2. 22. *Gmel. ſib.* 4. 72. *Jacqu. hort.* 2. *t.* 125. *Villars dauph.* 2. 302. *Krock. ſileſ. n.* 237.
Coronopus ſerpentina. *Bauh. hiſt.* 3. 510. *Raii hiſt.* 880. 8.—& omnium minima. *Ejuſd.* 511. *Raii hiſt.* 881. 9.
Holoſteum hirſutum nigricans. *Bauh. pin.* 190.
Leaves linear flat, ſcape round hirſute, ſpike oblong erect.
18. Plantago Bellardi.
Lin. ſpec. ed. Willd. 646. *Allion. pedem. n.* 300. *t.* 85. *f.* 3. *Vahl ſymb.* 2. 31.
P. Holoſtea. *Deſfont. atlant.* 137. *Lamarck illuſtr. n.* 1667.
Holoſteum ſalmanticum puſillum annuum. *Griſ. virid. in Raii exter.* 382.
Leaves linear-lanceolate hairy, higher than the round hirſute ſcape, ſpike ovate erect.
19. Plantago cretica. *Cretan Plantain.*
Lin. ſpec. 165. *Reich.* 1. 322. *Willd.* 646. *hort. cliff.* 36. *Tournef. cor.* 5.
Holoſteum ſ. Leontopodium creticum. *Bauh. pin.* 190. *Raii hiſt.* 881. 13.
Leont. cret. *Cluſ. hiſt.* 2. 11.
Leaves linear, ſcape round very ſhort woolly, ſpike roundiſh nodding.
20. Plantago barbata. *Bearded-leaved Plantain.*
Lin. ſpec. ed. Willd. 646. *Forſk. in comm. gott.* 9. 25. *t.* 4.
Leaves oblong-lanceolate ſomewhat toothed bearded at the baſe, ſpike globular, four-flowered.
21. Plantago ciliata. *Fringed Plantain.*
Deſfont. atlant. 137. *t.* 39. *f.* 3.
Leaves hoary narrow-lanceolate, ſcape about the ſame length with the leaves, hirſute, heads of flowers round leaſleſs, corollas ciliate.
22. Plantago maritima. *Sea Plantain.*
Lin. ſpec. 165. *ſyſt.* 156. *Reich.* 1. 322. *Willd.* 647. *fl. lapp. n.* 63. *ſuec. n.* 133. *Hudſ. angl.* 64. *Wither. arr. ed.* 3. 197. *Smith. angl.* 184. *Engl. bot. t.* 175. *Relh. cant. ſuppl.* 2. *n.* 1067. *Lightf. ſcot.* 118. *Fl. dan. t.* 243. *Pollich pal. n.* 162. *Scholl. barb. n.* 116. *Weber ſpicil.* 6. *Deſfont. atlant.* 138.
P. marina. *Lob. obſ.* 163. 2. *ic.* 306. *Ger.* 343. 3. *Raii hiſt.* 880. *ſyn.* 315. *Mor. hiſt. ſ.* 8. *t.* 17. *f.* 34.
P. marina vulgaris. *Park. theat.* 498. 1.
P. anguſtifolia. *Dod. pempt.* 108.
P. marit. major tenuifolia. *Tournef. inſt.* 127.
P. montana. *Hudſ. angl. ed.* 1. 53.
Coronopus. *Ger. emac.* 425. 1. *Park. theat.* 499. 3.
C. marit. major. *Bauh. pin.* 190.
P. an alpina anguſtifolia J. B? *Raii ſyn.* 315.

β. P. Loeflingii. *Hudſ. angl. ed.* 1. 52.
P. marina. *Ger. emac.* 423. 3.
Leaves linear almoſt quite entire channelled woolly at the baſe, ſpike cylindrical, ſcape round.
23. Plantago ſubulata. *Awl-leaved Plantain.*
Lin. ſpec. 166. *Reich.* 1. 323. *Willd.* 647. *Hoffm. germ.* 53. *Guett. ſtamp.* 2. 428. *Krock. ſileſ. n.* 238. *Villars dauph.* 2. 304. *Ger. prov.* 334. *n.* 9. *Deſfont. atlant.* 138.
P. gramineo folio minor. *Tournef. inſt.* 127.
Holoſteum ſtrictiſſimo folio minus. *Bauh. pin.* 190.
Serpentaria omnium minima. *Lob. ic.* 439. *Ger.* 345. 3. *emac.* 426. 3. *Bauh. hiſt.* 3. 511. *Raii hiſt.* 881. *n.* 9. v. P. alpinam, n. 17.
β. Holoſteum maſſilienſe. *Bauh. pin.* 190. *Raii hiſt.* 880. *inf.*
Leaves awl-ſhaped three-ſided ſtriated rugged, ſcape round.
24. Plantago gracilis. *Slender-ſpiked Plantain.*
Deſfont. atlant. 139. *Poiret itin.* 2. 115.
Leaves lanceolate toothletted blunciſh, ſcape round not ſtriated, ſpike cloſe very long.
25. Plantago recurvata. *Recurved-leaved Plantain.*
Lin. ſpec. Reich. 1. 323. *Willd.* 647. *mant.* 198.
P. incurvata. *Lin. ſyſt.* 156. *Murr. in comm. gott.* 1780. *p.* 19. *t.* 6.
P. ſerpentina. *Villars dauph.* 2. 304?
P. orientalis Scorzonerae folio. *Tournef. cor.* 5.
Leaves linear channelled recurved naked.
26. Plantago macrorhiza. *Thick-rooted Plantain.*
Lin. ſpec. ed. Willd. 648. *Vahl ſymb.* 2. 31. *Poiret. itin.* 2. 114.
P. crithmoides. *Deſfont. atlant.* 140.
Coronopus ſiculus fruticoſus platyphyllos. *Bocc. ſic.* 30. *t.* 15. *f.* 2. *Mor. hiſt. ſ.* 8. *t.* 17. *f.* 36. *Raii hiſt.* 881. *n.* 11.
Leaves ſpatulate gaſh-toothed, teeth imbricate mucronate, ſcape round hairy.
27. Plantago Serraria. *Saw-leaved Plantain.*
Lin. ſpec. 166. *ſyſt.* 156. *Reich.* 1. 323. *Hoffm. germ.* 53. *Krock. ſileſ. n.* 235. *Deſfont. atlant.* 139. *Poiret. itin.* 2. 113.
P. apula laciniata bulboſa. *Col. ecphr.* 1. 258. *Mor. hiſt. ſ.* 8. *t.* 16. *f.* 19. *Raii hiſt.* 879.
P. anguſtifolia ferrata hiſpanica. *Barrel. rar. t.* 749. *Shaw ſpecim. n.* 485.
P. ang. ſerr. hiſpalenſis. *Bauh. pin.* 189.
P. ang. altera. *Cluſ. cur. poſt.* 65.
Leaves lanceolate five-nerved tooth-ſerrate, ſcape round.
28. Plantaga Coronopus. *Buck's-horn Plantain.*
Lin. ſpec. 166. *ed. Willd.* 648. *hort. cliff.* 37. *fl. ſuec. n.* 134. *Gaertn. fruct.* 1. 237. *Hudſ. angl.* 64. *Wither. arr. ed.* 3. 198. *Smith angl.* 185. *Lightf. ſcot.* 118. *Sibth. oxon. n.* 177. *Fl. dan. t.* 272. *Hall. helv. n.* 658. *Roth. germ.* 1. 62. 2. 174. *Hoffm. germ.* 53. *Deſfont. atlant.* 139. *Berg. phyt. t.* 135.
P. coronopifolia. *Lin. ſyſt.* 156. *Reich.* 1. 323. *Relh. cant. n.* 118. *Krock. ſileſ. n.* 239. *Poiret itin.* 2. 113.
P. fol. laciniatis, Coronopus dicta. *Raii ſyn.* 315. *Petiv. brit. t.* 4. *f.* 10.
P. ceratophyllos, ſ. Coronopus hirſutus hortenſis. *Mor. hiſt. ſ.* 8. *t.* 17. *f.* 31.
Coronopus *Fuchſ. hiſt.* 449. *Trag.* 99. *Tabern. ic.* 102. *Camer. epit.* 276. *Matth.* 493. *Blackw. t.* 460. *Beſl. eyſt. eſt.* 7. *p.* 8. *f.* 3.
C. ſylveſtris hirſutior. *Bauh. pin.* 190.
C. hortenſis. *Bauh. pin.* 190. *Tournef. inſt.* 128.
C. ſ. cornu cervinum vulgo, ſpica Plantaginis. *Bauh. hiſt.* 3. 509.
C. vulgaris, ſ. cornu cerv. *Park. theat.* 502. 1. *Raii hiſt.* 879.
Cornu cervinum. *Lob. obſ.* 239. 2. *ic.* 437. *Ger.* 346. 1. *emac.* 427. 1.
Herba ſtella, ſ. cornu cerv. *Dod. pempt.* 109. 1.
Leaves linear toothed, ſcape round.
29. Plantago Loeflingii. *Spaniſh Plantain.*
Lin. ſpec. 166. *ſyſt.* 156. *Reich.* 1. 324. *Willd.* 649. *Loefl. it.* 124. *Jacqu. hort.* 2. 58. *t.* 126.
Leaves linear ſomewhat toothed, ſcape round, ſpike ovate, bractes keeled membranaceous.

30. Plantago Cornuti.
Lin. ſyſt. 156. *ſpec. ed. Willd.* 649. *Jacqu. ic. rar.* 1. *t.* 27. *miſc.* 2. 351.
Leaves pinnate, pinnas unequal and diſtant, ſcape round, ſtyles very long, filaments very ſhort.

** *Cauleſcent.*

31. Plantago amplexicaulis.
Lin. ſpec. ed. Willd. 650. *Cavan. ic. rar.* 2. *n.* 137. *t.* 125.
Stem erect ſimple, leaves lanceolate ſomewhat fleſhy quite entire embracing, heads ſubovate.

32. Plantago Pſyllium. *Clammy Plantain* or *Fleawort.*
Lin. ſpec. 167. *Reich.* 1. 324. *Willd.* 650. *vir. cliff.* 9. *hort. upſ.* 28. *mat. med.* 51. *Hall. helv. n.* 661. *Scop carn. n.* 165. *Roth. germ.* 1. 62. 2. 175. *Hoffm. germ.* 53. *Krock. ſileſ. n.* 240. *t.* 33. *Villars dauph.* 2. 305. *Allion. pedem. n.* 304. *Deſfont. atlant.* 140. *Ludw. elt. t.* 44. *Sabb. hort.* 2. *t.* 10. *Berg. phyt. t.* 201. *Plenck, ic.* 62.
Pſyllium. *Trag.* 167. *Matth.* 1067. *Fuchſ. hiſt.* 888. *Dod. pempt.* 115. *Blackw. t.* 412.
P. majus erectum. *Baub. pin.* 191. *Baub. hiſt.* 3. 513. *Tournef. inſt.* 128. *Shaw ſpecim. n.* 494.
P. vulgare. *Park. theat.* 278. *Raii hiſt.* 881.
P. Herba pulicaris. *Tabern. ic.* 146. *Ger.* 471. 1. *emac.* 587. 1.
Pulicaris herba. *Lob. ic.* 436.
Stem branched herbaceous, leaves ſomewhat toothed recurved, heads leafleſs.

33. Plantago ſquarroſa. *Leafy-ſpiked Plantain.*
Lin. ſyſt. 156. *Willd.* 650. *Murr. in comm. gott.* 1781. *p.* 38 *t.* 3.
P. ægyptiaca. *Jacqu. ic. rar.* 1. *t.* 28. *collect.* 1. 45.
Kali tertium. *Alp. ægypt.* 128.
K. ægyptiacum foliis valde longis hirſutis. *Baub. pin.* 289. *Raii hiſt. app.* 1915.
Herbaceous, ſtems branched diffuſed decumbent, leaves linear quite entire, heads ſquarroſe.

34. Plantago indica. *Indian Plantain.*
Lin. ſpec. 167. *ſyſt.* 156. *Reich.* 1. 325. *Willd.* 651. *hort. upſ.* 29.
Stem branched herbaceous, leaves quite entire reflex, heads leafy.

35. Plantago pumila. *Dwarf Plantain.*
Lin. ſpec. ed. Willd. 651. *ſyſt.* 157. *ſuppl.* 125.
P. exigua. *Murr. in comm. gott.* 1778. *p.* 94. *t.* 5.
Stem branched herbaceous, leaves quite entire fleſhy, branches even.

36. Plantago Cynops. *Shrubby Plantain.*
Lin. ſpec. 167. *Reich.* 1. 325. *Willd.* 651. *hort. cliff.* 47. *Hall. helv. n.* 662. *Pallas it.* 3. 626. *Krock. ſileſ. n.* 241. *Villars dauph.* 2. 305. *Allion. pedem. n.* 305. *Deſfont. atlant.* 141. [a] *Knipb. cent.* 9. *n.* 78. *Berg. phyt. t.* 203. *Plenck, ic. t.* 61.
Pſyllium ſempervirens. *Mor. hiſt.* 3. 262. *ſ.* 8. *t.* 17. *f.* 1.
Pſ. majus ſupinum. *Baub. pin.* 191. *hiſt.* 3. 513. *Raii hiſt.* 882. 3. *Tournef. inſt.* 128.
Pſ. plinianum forte, radice perenni ſupinum. *Lob. ic.* 437.
Pſ. ſempervirens. *Ger.* 471. 2. *emac.* 587. 2.
Pſ. majus ſemperv. *Park. theat.* 277. *n.* 2.
Stem branched ſuffruticoſe, leaves quite entire ſubulate, heads ſomewhat leafy.

37. Plantago afra. *Barbary Plantain.*
Lin. ſpec. 168. *ſyſt.* 157. *Reich.* 1. 325. *Willd.* 652. *Deſfont. atlant.* 141. *Poiret itin.* 2. 116.
Pſyllium foliis crenatis indicum. *Baub. pin.* 191. *hiſt.* 3. 513. *Park. theat.* 277. 3. *Raii hiſt.* 882. 2. *Mor. hiſt.* 3. 262. *ſ.* 8. *t.* 19. *f.* 4.
Pſ. fol. laciniatis. *Boc. ſic.* 8. *t.* 7 *f.* B.
Stem branched ſhrubby, leaves lanceolate toothed, heads leafleſs.

38. Plantago parviflora. *Small-flowered Plantain.*
Deſfont. atlant. 141.
Leaves oppoſite linear ciliate, peduncles ſhorter than the leaf, heads round, bractes preſſed cloſe equalling the calyx.

DESCRIPTIONS, *&c.*

1. The root of the *Great Plantain* or *Waybread*, when old, is the thickneſs of the thumb, præmorſe or ſtumped, laying ſtrong hold of the earth by its fibres, which ſtrike deeply, and are whitiſh. Leaves petioled, ſeven-ribbed or ſometimes nine-ribbed, ſmooth, but ſomewhat hairy when young, about a hand in length, often remotely toothed about the edge. Petioles long, convex on the under ſide, concave above, each forming a kind of ſheath at its baſe. Scapes upright, pubeſcent, longer than the leaves. Spikes cylindrical, very long, linear, compoſed of many cloſely imbricate flowers, under each of which is a lanceolate concave bracte. Diviſions of the calyx ovate, concave, blunt, ſmooth, nearly equal. Anthers purple, two celled, each cell terminating at bottom in a point. Style villoſe [a].
Capſule ſuperior, covered with the ſhrivelled corolla, papery: partition membranaceous, looſe when ripe: receptacle fleſhy, excavated, faſtened to the partition on each ſide. Seeds few, about nine in each cell, (according to Leers ſix; but Mr. Curtis ſays, he has commonly found about twenty ſmall ones, whereas *P. lanceolata* has only two large ſeeds); they are ſubovate, ſlightly convex on one ſide, angular on the other, with a ventral navel in the middle, of a paliſh brown colour [a].
Native of moſt parts of Europe and Japan, in meadows, gardens, and particularly by way ſides, whence its name of *Way-bread*. It is a perennial plant, and flowers during the whole ſummer.
The ſeeds afford food to many of the ſmall birds. Mr. Curtis ſays that cattle in general appear very readily to eat the leaves. According to the Swediſh experiments, ſheep, goats and ſwine eat it; cows and horſes refuſe it.
The leaves have a weak herbaceous ſmell, and an auſtere, bitteriſh, ſubſaline taſte; their qualities are ſaid to be refrigerant, attenuating, ſubſtyptic and diuretic.
Plantain was formerly reckoned among the moſt efficacious vulnerary herbs; and the common people now apply the leaves to freſh wounds and cutaneous ſores. Inwardly they have been uſed in phthiſical complaints, ſpitting of blood, and in various fluxes, both alvine and hæmorrhagic. The ſeeds however ſeem better adapted to relieve pulmonary diſeaſes than the leaves, being extremely mucilaginous. The roots have alſo been recommended for the cure of tertian intermittents, and from the experience of Bergius, not undeſervedly. An ounce or two of the expreſſed juice, or the like quantity of a ſtrong infuſion, may be given for a doſe; in agues the doſe ſhould be double this quantity, and taken at the commencement of the fit.
Plantain is ſaid to be a cure for the bite of the Rattle-ſnake; but probably with little foundation, although it is one of the principal ingredients in the remedy of the Negro Cæſar, for the diſcovery of which he received a conſiderable reward from the Aſſembly of South Carolina [a].
I have followed the late Dr. Withering in the varieties.
β. Is much ſmaller than the common ſort. Leaves three-nerved. Stalk not more than an inch and half high. Spike ſhorter and having fewer flowers in proportion. About Shirehampton, and King's Weſton, near Briſtol.
γ. Leaves with large teeth towards the baſe. A variety ſcarcely worth notice.
δ. Spike leafy. Flower leaves diſpoſed in a pyramidal form.
ε. The ſpike is abortive or compoſed of leaves, as in the preceding, which differs not from this, except in having the ſpike-leaves imbricate in a pyramid; whereas in the roſe Plantain they are expanded like a roſe; both ſorts of ſpike often ſpring from the ſame root. Roſe Plantain is often cultivated in gardens.

[a] Curtis. [a] Gærtner. [a] Woodville.

ζ. Spike

ζ. Spike abortive leafy, branching into a panicle [p]. Bedingham, near Bungay, in Suffolk.

2. Jacquin, who describes this plant in the Supplement to his Collection, says he is unacquainted with its native country. It is a ſtiff and roughiſh plant, pretty much divided or many headed. It bears the open air in ſummer, but muſt be taken into the greenhouſe in winter. The root is perennial, conſiſting of a heap of thick, branchy, white fibres: the radical leaves are numerous, thick, erect, and either of an ovate or lanceolate form from a channelled foot-ſtalk; obtuſe, more or leſs dentated at the edges, frequently almoſt entire, criſp, bullated, nervous, dark green, and two or three inches long. Scapes ſeveral, round, upright, the length of the leaves. Spikes round, denſe. Calycine leaves roundiſh, gloſſy, green, obtuſe, unequal, fleſhy. Petals white, acute. Seeds ovate, punctated, if viewed with a glaſs blackiſh, and not gloſſy [q].

It is thought to be a native of the South of Europe. Mr. Donn, who cultivated it in the botanic garden at Cambridge, attributes it to Sweden, and aſſigns the year 1790 for its introduction.

3. This ſpecies reſembles *P. major* ſo much, that it might eaſily be taken for the ſame: the ſpike however is longer, the flowers remote, the leaves uſually ſomewhat toothed at the baſe, and the ſcape angular [r].

Native of China and Siberia. Introduced in 1787, by Monſ. Thouin. It flowers in july [s].

4. This is a plant which bears the open air. The root is fuſiform, perennial, and the thickneſs of a finger; producing annually ſeveral leaves with long foot-ſtalks, which are marked in front with a furrow. The leaves are lanceolate, ſomewhat acute, either toothed or entire, marked with from five to eleven nerves, villoſe on both ſides, but moſt ſo on the back; hence they feel ſoft to the touch: they vary much in ſize and breadth, ſo that, excluſive of the foot-ſtalks, a leaf of nine inches ſhall be ſometimes of the breadth of half a foot, and ſometimes only two inches. Scapes round, ſtriated, a little villoſe, and from half a foot to two and a half feet high; bearing a cylindric ſpike, from three to five inches long, and very thickly imbricated through its whole length. Calyx green, equal. Petal pale. Filaments very long and whitiſh; and at length a little purpliſh [t].

Native of Siberia. Cultivated in 1763, by Mr. James Gordon. It flowers in july and auguſt [u].

5. Hoary Plantain has the leaves ſmall and leſs blunt than in the common great Plantain, hoary, commonly five-nerved, lying cloſe to the ground, on very ſhort, dilated petioles. Spike ſhort, cloſe. Filaments longer than in P. major, pale purple: anthers white and more ſhowy. Capſules containing only two ſeeds, as in P. lanceolata [x].

Gærtner deſcribes the capſule as covered by both calyx and corolla, of a cylindric-ovate form, opening tranſverſely a little above the baſe, ſo that the lid forms the greater part of it. Partition ſo very thin as to be almoſt evaneſcent in a ſtate of maturity. Seed in each cell one, of an oblong elliptic form, on one ſide convex and ſmooth, on the other concave, with an umbilical tubercle in the middle, of a yellowiſh horn colour, ſhining and mucilaginous. Albumen hard, pale. Embryo dorſal, erect, ſnow-white. Cotyledons linear-oblong, ſhorter than the radicle. Radicle filiform, curved, inferior. The ſtructure is the ſame in P. lanceolata, virginica, Pſyllium, &c.

Root perennial, large when fully grown, penetrating deep, and having numerous lateral fibres, by which it ſupports itſelf in the moſt ſcorching ſeaſons: it is alſo not deſtroyed by frequent mowing, as moſt lawns and graſs-plats teſtify.

Native of moſt parts of Europe, among graſs, eſpecially in calcareous and gravelly ſoils; flowering during the whole ſummer.

6. In America this unfolds its corolla, and puts forth the ſtamens, which it ſcarcely does in Europe. Scape pubeſcent. Leaves half-three-nerved and pubeſcent. It is an annual plant, native of Virginia [y]. Introduced in 1775, by Monſ. Thouin [z].

7. Root perennial. Leaves a foot or a foot and a half in length, thick, with blunt diſtant teeth, on very long petioles. Scapes two or three feet high, when young rugged, but when old almoſt ſmooth. Spike cylindrical, ſcarcely an inch and half in length, ſmooth [a]; in proportion to the ſize of the plant ſhort, compact and cloſe [b].

Native of Italy and Sileſia. Introduced in 1774, by Joſ. Nich. de Jacquin [c].

8. Root of Ribwort Plantain perennial, when old appearing as if bitten off at the end. Leaves all from the root, truly lanceolate, diſtinguiſhed by five (ſometimes three or ſeven) prominent ribs, pointed, entire, or ſometimes having a few teeth near the baſe. Dr. Withering remarks, that in maritime ſituations they are toothed all along the edges. They are of a dark green, moſt hairy beneath, taper at the baſe into a long flat footſtalk, ribbed like the leaf itſelf, and at their inſertion are inveſted with long white woolly hair ſpringing from the crown of the root. Scapes or flowering-ſtalks upright, longer than the leaves, from among which they ſpring; they are clothed at the baſe with the ſame kind of hair, and upwards are ſmoothiſh, round with five deep furrows, ſlightly twiſted, and terminated by a ſhort ovate ſpike, imbricated with black ſcales, and enlivened with the prominent cream-coloured anthers, in its more advanced ſtate. A ſpike will ſometimes contain one hundred and thirty ſmall flowers, crowded cloſe together, with an ovate pointed ſcale or bracte at the baſe of each. The capſule contains two oblong ſhining ſeeds, of an amber colour in each cell. The ſtalks continue to grow after the flowering is over, and ſometimes ſhoot out to the length of two feet or more. When it grows in meadows the leaves are erect and drawn up; but in a dry barren ſoil, they are ſhorter, broader, and more ſpread on the ground [d].

It grows ſpontaneouſly by the ſides of roads, and in dry paſtures, where it is left untouched by cattle, to feed ſmall birds with the copious produce of its ſeeds. It has been generally conſidered as a weed, occupying the room of graſſes and other uſeful herbs; but it has lately been introduced into culture, under the name of *Rib-graſs*, as a good food for ſheep, or to be made into hay for cattle in general. Haller attributes the richneſs of the milk in the alpine dairies to this plant and *Alchemilla vulgaris*, or Ladies mantle. Linneus ſays, it is eaten by horſes, ſheep and goats, but that cows refuſe it. Sheep will eat it either green or dried, provided it be well gotten; but it does not anſwer for paſturage, without a mixture of clover or graſſes [e]. The total abſence, ſays Dr. Withering, of this plant, in marſhy lands, is a certain criterion of their wretched quality. In proportion as ſuch foils are improved by draining, it will flouriſh and abound. Ribwort Plantain however, at leaſt in England, is not a criterion of excellence in a ſoil, but merely of its dryneſs.

Mr. Curtis, Dr. Withering, and Dr. Smith do not ſpeak favourably of this plant, as a paſture or meadow herb. Certainly from theory one ſhould decide againſt it: but practical men hold it in ſome eſteem.

Mr. Zappa of Milan, affirms that *P. lanceolata* grows ſpontaneouſly in every meadow of Lombardy, eſpecially in thoſe which are irrigated; that it vegetates early, flowers at the beginning of may, ripens in five weeks, and is cut with *Poa trivialis*; that the height of the leaves is about one foot, and of the ſtalk a foot and half; that it multiplies itſelf much by the ſeed, and a little by the roots, which it continues for ſome time to reproduce; that it is eaten heartily by every ſort of cattle, and in particular by the cows in graſs, and the cows like it moſt in may, having great influence on the milk; that the hay is eaten more voraciouſly by cows, and has on them great influence in the

[p] Withering, Smith, Curtis. [q] Jacquin. [r] Linn. ſpec. [s] Hort. kew. [t] Jacquin. [u] Hort. kew. [x] Smith and Curtis.

[y] Lin. ſyſt. [z] Hort. kew. [a] Jacquin. [b] Knocker. [c] Hort. kew. [d] Curtis, Withering, Engl. bot. Fl. ruſt. [e] With. Engl. bot. Fl. ruſt.

fleſh; in ſhort, that it is one of the beſt plants either for the milk or the fleſh [r].

Mr. Young informs us, that he had long before recommended this plant for laying land to graſs, and ſowed it on his own farm [s]. At the ſame time he looks upon it as extravagant to propoſe Dandelion and Sorrel, as plants proper for a cow-paſture; and conjectures that thoſe plants, being found among good ones, have qualities given them which do not properly belong to them [t]. I am inclined to make the ſame conjecture of narrow-leaved Plantain, Ribwort or Rib-graſs, and ſhould even have preferred Dandelion and Sorrel to it: but I am cautious of oppoſing theory to practice.

Mr. Zappa adds, that *P. major* or great Plantain, grows not only along the roads, near dunghills, in damp and fat places, but in irrigated meadows alſo of every diſtrict in Lombardy; though more near the borders than in the centre of them; that it vegetates later, flowering towards the end of may; that the leaf is ſix inches long, and the ſtalk almoſt a foot high; that notwithſtanding it is not tender, every ſort of cattle like it, and that cows are as fond of this as of the other ſpecies [u].

Dr. Anderſon obſerves that narrow-leaved Plantain or Rib-graſs is well liked by horſes and cattle, and yields a very good crop upon rich ground tending to dampneſs, if it is at the ſame time ſoft and ſpongy; but that upon any ſoil which has a tendency to bind, or upon dry ground, it furniſhes a very ſcanty crop [x].

Narrow-leaved Plantain has been adopted in ſome parts of Yorkſhire as a ſummer graſs. As an article of paſturage for cattle and ſheep it is there in high eſteem: it is not however well affected by horſes; and as an article of hay it is held to be detrimental to the crop; retaining its ſap an unuſual length of time; and when fully dry, falls into a ſmall compaſs, or is broken into fragments, and left behind in the field. One advantage of this plant is, that its ſeeds may be eaſily procured genuine. A ſmall proportion of it may be eligible: it has now ſtood the teſt of twenty years eſtabliſhed practice, and ſeems to be ſtill in good eſtimation, even among obſervant huſbandmen [y].

Mr. Marſhall made a trial of it in Norfolk, as a ſubſtitute for Clover, but gained no credit from the experiment: the fact is, horſes do not affect it, and they are the principal conſumers of the Clover crop in that country [z].

The qualities of this ſpecies ſeem to be nearly the ſame with thoſe of *P. major*; and it is more uſed than that by the common people, where it is more common.

It varies much in ſize of the plant, breadth of the leaves, &c. The narrow leaves have only three ribs. The ſpike is ſometimes ſurrounded by large leaves, inſtead of the uſual ſmall bractes: it ſometimes becomes an abortive panicle: and it is found with two or three heads.

9. Native of the Cape of Good Hope, where it was found by Thunberg [a].

10. Leaves nerveleſs, pubeſcent underneath, brown at the tip and at the obſolete toothlets. Spike ſubglobular. Calyxes hirſute. Border of the corolla even [b].

According to Monſ. Desfontaines, the leaves are five-nerved. Scape pubeſcent, ſtriated, ſlender. Spike ſhort, ovate, cloſe, ſilky with very ſoft hoary villoſe hairs; when mature cylindrical.

Native of the South of France, Spain, Portugal and Algiers.—Cultivated in 1683, by Mr. James Sutherland. It flowers in june and july [c].

11. Stem ſimple, villoſe. Leaves like thoſe of the preceding, acute, toothletted or quite entire, running down into the petiole, which is ſheathing at the baſe. Peduncles round, not ſtriated, villoſe, twice or thrice as long as the leaf. Spike cloſe. Bractes ovate, concave, elliptic, ſcarioſe at the edge, longer than the calyx. Segments of the corolla ovate. It is allied to *P. amplexicaulis* of Cavanilles, *n.* 137. *t.* 125. but differs in having the leaves ciliate only, not hirſute all over. Perhaps it may be only a variety. Native of the ſands about Tozzer [d].

12. Leaves upright, wider than in *P. media*. Scapes longer than the leaves, ſomewhat hiſpid, five-grooved. Spike like that of *P. Lagopus*, but oblong, with ſhort hirſute bractes. Corolla white, with a yelloviſh ſtreak. Stamens white. Style elongated, pubeſcent, white [e].

According to Desfontaines, the leaves are oval-oblong, nerved, toothletted, running down into a ſhort petiole, tomentoſe at the baſe, and attenuated both ways. Scape ſtriated, ſmooth, except at top where it is a little villoſe, with hairs preſſed cloſe. Spike ovate-cylindrical, covered with a ſoft down.

Native of Spain; and near La Calle, in Barbary.—Introduced in 1781, by P. M. A. Brouſſonet, M. D. It flowers in july and auguſt [f].

13. This is very nearly allied to the next ſpecies, but the leaves are narrower, more linear and nerveleſs. It is an annual plant; and native of Champion river in Patagonia [g].

14. Leaves narrow-lanceolate, decurrent into the petiole, three-nerved or five-nerved, quite entire or very ſeldom toothletted, villoſe with white very crowded hairs, preſſed cloſe. Scape pubeſcent, ſcarcely ſtriated, erect. Spike when mature a little interrupted. Rachis villoſe. Bractes concave, ovate, membranaceous at the edge, the length of the calyx. Segments of the corolla ovoid, ſharpiſh, ruſeſcent. Anthers thick, yellow. Style ſtanding out, filiform, pubeſcent [h].

Native of the South of France, Spain and Barbary.—Introduced in 1770, by Monſ. Richard. It flowers from june to ſeptember, and is perennial [i].

Willdenow is of opinion, that *P. minuta* of Pallas (*it.* 2. *t.* E. *f.* 1.) ſcarcely differs from this, except in ſize.

15. Leaves ſilky with villoſe hairs preſſed cloſe, very ſharp, and attenuated at the baſe. Scape round, pubeſcent, ſlender, a little longer than the leaves. Spike when young ovate, but when the fruit is ripe cylindrical, very cloſe. Bractes ovate, acute, membranaceous at the edge, ſhorter than the flower. Corolla pale ruſeſcent, with the ſegments ovoid and ſmooth. It is allied to *P. albicans*, but has a ſhorter ſpike, round, with the flowers very much crowded, not interrupted when the fruit is ripe. Native of the ſands near Caſſa in Barbary [k].

16. Native of the Cape of Good Hope, where it was found by Thunberg [l].

17. Root perennial, oblique, branched, creeping a little, often as it were bitten off. Leaves nerved, two, three, or four lines in width, dark-coloured, ſmooth, thick and a little fleſhy. Spike very ſhort, round, compoſed of from eighteen or twenty to thirty flowers, which are much larger and more detached than in *P. lanceolata*. According to Krocker, before the flowers open it hangs down; and after flowering it becomes long and cylindrical. The bractes are as long again as the calyx; the corollas are blackiſh; according to Haller, they are whitiſh. The capſules are ſmooth and diſtinct [m].

Native of the mountains of Switzerland, Auſtria and Siberia.—Introduced in 1774, by William Pitcairn, M. D. [n]

18. This is a ſmall annual plant, often ſcarcely an inch, ſometimes an inch and half in height. Several of the leaves are an inch and half long, others are ſmaller; all are linear-lanceolate and acute, attenuated at bottom, obſcurely three-nerved. Scape upright, ſhorter than the larger leaves, ſordidly ſhaggy. Spike ovate or ovate-oblong, hirſute, the length of half the ſcape. Bractes lanceolate, attenuated, the length of the calyx. Segments of the corolla lanceolate [o].

Desfontaines has adopted Lamarck's name of *P. Holoſtea*; and remarks that it differs from *P. albicans*,

[r] Young's Annals, vol. 6. p. 30. printed 1786.
[s] Ibid. p. 47.
[t] Ibid. p. 47 and 53.
[u] Ibid. p. 51.
[x] Eſſays, vol. 2. 253.
[y] Marſhall's rur. econ. of Yorkſhire, vol. 2. p. 91.
[z] Rur. econ. of Norfolk, vol. 1. p. 302. note.
[a] Prodr. cap.
[b] Linn. ſpec.
[c] Hort. kew.
[d] Desfontaines.
[e] Linn. ſpec.
[f] Hort. kew.
[g] Willdenow.
[h] Desfontaines.
[i] Prodr. cap.
[k] Hort. kew.
[l] Vahl.
[m] Hort. kew.
[n] Desfontaines.
[o] Villars.

to which it is allied, in having the hairs ſpreading not preſſed cloſe, the ſpike ſhorter and denſer, the bractes awl-ſhaped, and the ſegments of the corolla very ſmall. He adds, that the leaves are quite entire and three or five-nerved; the ſcape round not ſtriated, a little longer than the leaves; the bractes awl-ſhaped, the lower ones longer than the flower; the calyx villoſe.

Native of Spain, Italy and Tunis.

19. This is an annual plant; when cultivated having the leaves longer and not ſo cloſely woolly, and upon the whole putting on a very different appearance from the wild plant [f].—Native of Crete.

20. Native of Terra del Fuego, where it was found by Forſter.

21. This puts up ſeveral very ſhort ſtems from the ſame head. Leaves quite entire, ſilky with hairs preſſed cloſe, ſharp, attenuated below. Scapes villoſe, round not ſtriated, ſhorter than the leaves or a little longer. Bractes ovate, concave, pubeſcent, membranaceous at the edge, ciliate at the tip, the length of the calyx; which is villoſe, and has elliptic ſegments. Corolla of a pale ruſous colour.

Native of the ſandy deſert near Caſſa and Elhammah. Annual [a].

22. Root perennial, woody, inverſely conical at the crown. Stalk five or ſix inches high. Spike from an inch to an inch and half in length, bent at a right angle before flowering. Leaves convex on the lower, channelled on the upper ſurface, generally entire, but ſometimes with a few minute irregular teeth. Bractes keeled. Tube of the corolla woolly. Anthers yellow [f].

No plant varies more in ſize than this: its leaves being ſometimes ſcarcely an inch, at other times more than a foot in length. The height of the ſtalk is more conſtant, but the number of flowers in the ſpike varies extremely. It loves a muddy ſoil, but is as various in its place of growth as in ſize, being found, like Statice Armeria, on the higheſt mountains as well as on the ſea ſhore. Hence it has been taken for *P. alpina*, which is a very different plant, with ſhort oval ſpikes, and lanceolate flat leaves. Still leſs reſemblance has our Sea Plantain, (though it has ſometimes toothed leaves, eſpecially on the coaſt,) to *P. Loeflingii*; that having flat leaves, and very ſhort roundiſh pale ſpikes, much like thoſe of *P. Pſyllium*.

Our *P. maritima* may be known by its very fleſhy and ſmooth leaves, channelled above and concave (convex) below, with a tuft of wool at their baſe, and the ſpike, however ſhort, always cylindrical [a].

It is common on the ſea coaſt and in ſalt marſhes, in many parts of Europe, Barbary, and North America, flowering rather late in the ſummer. It alſo grows in the fiſſures of rocks on mountains remote from the ſea. Mr. Robſon found it near Bernard Caſtle, thirty-five miles from the Sea; and Mr. Lightfoot on the ſummits of the higheſt mountains in Scotland.

Dr. Withering notices two varieties. One *narrow-leaved*, with filiform leaves, a much ſmaller plant than the common ſort, and flowering earlier. He found it in the Iſle of Wight, going out of flower the beginning of June. Leaves about two inches long. Stalk cylindrical, ſlender, not ſcored, four inches high. Spike an inch long, cylindrical, not cloſely crowded with florets.

The other *flat leaved*, with flat ribbed leaves very ſparingly toothed. Leaves five inches long, flat, five-ribbed. Stalk about five inches high, cylindrical. Spike two inches long, cylindrical, bent at a right angle before flowering. Bractes with a mid-rib, but not keeled. Obſerved near the Briſtol channel, by Mr. Swayne; and at Yarmouth, by Mr. Woodward.

23. Leaves cluſtered, filiform, acute, flat above, convex underneath, rugged about the edge with ſcarcely conſpicuous prickles; woolly at the root. Scape round, longer than the leaves, by no means ſmooth. Spike ovate-oblong, not villoſe [b].

[a] Willdenow. [b] Desfontaines. [f] Withering.
[f] Engl. bot. [b] Linn. ſpec.

Leaves, according to Desfontaines, awl-ſhaped, ſtriated, quite entire, ſtiffiſh, many from the ſame tuft, very much crowded together. Scape filiform, not ſtriated, much longer than the leaves. Spike ſlender, cloſe.

Native of the South of Europe, eſpecially on the ſandy ſhores of the Mediterranean; growing in thick tufts; alſo about Tlemſen, in Barbary.—Introduced in 1773, by John Earl of Bute [f].

24. Leaves ſmooth, with a ruſeſcent down at the baſe. Spike ſlender not interrupted.—Native of Barbary near la Calle [b].

25. Plant ſtemleſs. Leaves radical, acute, ſomewhat pubeſcent underneath, ſcarcely toothletted. Scapes filiform, round, not ſtriated, erect, ſhorter than the leaves. Corolla ſcarioſe. Stamens ſcarcely longer than the tube of the corolla. Piſtil longer. It is allied to *P. fabulata*: and perhaps may be the ſame cultivated in a garden. It is an annual plant, native of the South of Europe and the Levant [f].

26. Leaves radical, ſpreading like a roſe, narrowing very much towards the baſe, thick, hirſute on both ſides, mucronate; teeth ovate, three or five on each ſide, imbricate, mucronate, thickened at the edge. Scape aſcending, a hand or more in height, covered cloſely with hairs preſſed to it. Spike cylindrical hirſute, two inches and more in length. Bractes ovate, acuminate, ſpreading at top, purpliſh on the back, membranaceous at the edge, hirſute on the outſide. The two outer ſegments of the calyx hirſute; the inner convex, ciliate [w].

Desfontaines deſcribes it under the name of *P. crithmoides*, as a low tufted plant, hirſute, branched, decumbent at the baſe. Root thick, twiſted, ſomewhat woody. Leaves crowded, running down into the petiole, hirſute, deeply toothed: teeth acute, ſomewhat remote. Petioles tomentoſe at the baſe, ſheathing. Scape extremely villoſe, erect, longer than the leaves. Spike very cloſe, villoſe. Bractes awl-ſhaped, a little longer than the flower, ſetaceous at the top. Corolla ruſeſcent, with ſmall, ovate, acute ſegments.

Native of Sicily and Barbary. Found by Poiret in the plains of Mazoule, by Vahl at way-ſides about Tunis, by Desfontaines in the fiſſures of rocks on the coaſt.

27. Leaves ſtriated, ſubpubeſcent, ſubpetioled, ſerrated with ſharp teeth. Scape pubeſcent [a].

Desfontaines deſcribes the leaves as almoſt like thoſe of *P. lanceolata*, villoſe, ſerrated with awl-ſhaped, longiſh, remote, ſpreading teeth. Scape not ſtriated, longer than the leaves, villoſe with hairs preſſed cloſe. Spike cloſe ſlender. Segments of the corolla ſmall, acute.

Native of Sileſia, Apulia and Barbary. Krocker ſays he found it on the banks of the Oder and other rivers, in a clayey ſoil. Desfontaines in Algiers. Poiret informs us that this handſome ſpecies grows, with ſome varieties, in ſhady moiſt places.

28. Root annual. Leaves pinnatifid (ſometimes bipinnatifid) hairy, with very unequal ſegments, lying on the ground in form of a Star, whence the fanciful names of *Herba Stella* and *Star of the Earth*. Scapes aſcending, from four to ſeven inches high. Spike cylindrical, from an inch or an inch and half to two inches in length; in ſandy ground few-flowered, and ſo ſhort as to be almoſt headed. Segments of the calyx lapping over each other, deeply divided, and fringed at the outer edge. Anthers terminated by a ſmall lanceolate tranſparent membrane; which is conſtant, however the plant may vary in the ſize and cleſts of the leaves, height of the ſtalk, or length of the ſpike [a]. Capſule ovate-conical. Seeds in each cell four, ſmall, angular, ruſeſcent, with a white, ventral navel. Embryo ſtraight, yellow. Cotyledons very long, linear [f].

Native of moſt parts of Europe, Barbary, &c. in ſandy and gravelly ſoils, and on the ſea coaſt; flowering all the ſummer.

[f] Hort. kew. [b] Desfontaines. [f] Linn. mant.
[w] Vahl. [a] Linn. ſpec. [a] Withering. Smith.
[f] Gaertner.

Many varieties of this ſpecies are mentioned by different authors. But the ſpecies of this genus are much ſubject to variation. Linnæus remarks, that the tenth, twelfth, fourteenth, nineteenth, twentieth, and twenty-ſecond ſpecies are ſo nearly allied, that we may conjecture their difference to be owing to change of place, or the mixture of pollen.

P. Loeflingii, which has been confounded both with this ſpecies, and *P. maritima*, is very diſtinct from both, as may appear from the deſcription that follows.

29. This differs from *P. Coronopus* in being ſmaller and earlier, in having an ovate ſpike, with the flowers more thinly imbricate; the bractes ſmooth and boat-ſhaped, whereas in that they are awl-ſhaped, very narrow, and pubeſcent. The ſtamens are ſhorter; the leaflets of the calyx more acute; the corolla of a browner colour. The leaves are linear, not lanceolate, and ſparingly toothed. The ſcape is hairy. It is an annual plant; native of Spain, on hills and the borders of fields[a].

30. Root fuſiform, a finger in thickneſs, whitiſh. Leaves numerous, ſpread out in a circle, acute, with ſoft hairs ſcattered over the ſurface and along the edge, half a foot in length: rib channelled: pinnas ſeſſile, irregularly placed, linear, quite entire, or ſometimes but ſeldom gaſhed. Scapes very many, aſcending, cloſely villoſe, rugged, the length of the leaves. Spike linear, three inches long, round, leafleſs, upright, ſlender. Bractes ovate-acuminate, concave, equalling the calyx; the leaflets of which are lanceolate, equal, keeled, acuminate, hiſpidly ciliate. Corolla whitiſh; tube the length of the calyx, ſegments ovate, acuminate[b].

It is very nearly allied to *P. Coronopus*, but is more ſmooth, with the ſegments of the leaves unequal, and a very long ſtyle[c].

Its place of growth is unknown. Jacquin received the ſeeds from Gouan, under the name of *Pl. Cornuti*.

31. The plant of this exactly reſembles *Pl. lanceolata*, but the ſtem is about the length of the little finger (whereas that has no ſtem) and upright. Leaves ſomewhat fleſhy, narrowed at the baſe and embracing, beſet with ſcattered hairs. Peduncles long, in the axils of the leaves. Heads ſubovate[d]. It is an annual plant, native of Spain.

32. Stems diffuſed, villoſe. Lower leaves oppoſite; upper leaves in threes or fours, linear, recurved, toothed, villoſe-viſcid. Peduncles longer than the leaf. Heads leafleſs, with the bractes and calycine leaflets linear[e].

Root ſlender, annual, fuſiform. Stem ſtiffiſh, upright, jointed, round, tinged here and there with purple. Lower leaves obſcurely toothed; upper ones quite entire. Peduncles axillary, villoſe rigid. Spikes oval, ſhort, ſurrounded only with lanceolate bractes. Corollas ſharply four-cleft, of a whitiſh bay colour. Seeds ſmall, brown, oblong, ſhining, convex on one ſide, concave on the other[f].

Native of the South of Europe, Barbary, and the Canary iſlands.—Cultivated here in 1562, as appears from Turner's herbal. It flowers in july[g].

33. This, according to Jacquin, flowers in the ſtove, from june to auguſt, after which it ripens its ſeed. From a white annual root proceeds a weak ſtem, incurvated at the baſe, and from thence ſoon after its origin, oppoſitely branched, round, villoſe, and half a foot high; ſometimes it grows extremely branchy. Leaves ſublinear, quite entire, acute, oppoſite, ſeſſile, villoſe, roughiſh, tubercinated, from one to four inches long, ſubciliated, and that particularly below. Spikes oblong, terminal, pedunculated, axillary, upright, leafy, and ſubviſcid. Flowers ſolitary in the boſoms of the floral ſpikes, forming a leafy ſpike, exactly anſwering to the Linnean character. Calycine leaves equal, and green, covered with white viſcid hairs. Petal pale. Anthers browniſh: whole ſtyle villoſe and white[h].

Native of Egypt. Introduced in 1787, by Mr. Ziet. It flowers in auguſt and ſeptember[i].

[a] Loefling in Linn. ſpec. [b] Linn. ſpec. [c] Jacquin. [d] Jacquin. [e] Krocker. [f] Jacquin. [g] Hort. kew. [h] Willdenow. [i] Hort. kew.

34. The two lower leaflets of the calyx are ſpatulate, very blunt, and concave within. Corollas tubular, frequently double the length of the calyx[a].

Native of Egypt and India. Gmelin found it about Aſtracan.—Cultivated in 1683, by Mr. James Sutherland. It flowers in july and auguſt[b].

35. This is ſo like the *Plantago Indica* of Linnæus, that at firſt ſight it might paſs for a ſmall variety of it. It is an annual, tender, or weak plant, about a ſpan high. Root ſmall, growing more and more ſlender as it deſcends; and fibrilloſe at the edges. Stem erect, variouſly bent, round, thin, beneath compoſed of branches decuſſating oppoſitely, ſpreading, half a palm's length, and with internodes of about two inches. Leaves ſubulate, channelled, very ſpreading, reflected at the tip, oppoſite, the upper ones ſometimes ternate and quaternate, about a palm's length, pubeſcent on the margins or ciliated. Heads leafy, with ſetaceous hirſute bractes, of which the two lowermoſt are almoſt twice the length of the head, incurved; the reſt ſeated, like chaff among the ſtraighter floſcules. Peduncles ſolitary, filiform, hirſute, terminal and axillary, rather ſhorter than the leaves, ſpreading. Calyx equal to the corolla, and divided almoſt to the very baſe, with ſetaceous upright diſtant leaflets. Corolla with a ventricoſe wrinkled tube. Stamens four, longer than the corolla. Piſtil the length of the corolla. Seed one in each cell, navicular, brown[c].

36. Stem hard, woody, purpliſh, naked. Leaves oppoſite, awl-ſhaped or filiform, channelled and three-cornered, upright, ſubvilloſe. Peduncles axillary, the length of the leaves. The lower ſcales of the head mucronate, patulous, of a middling length. Bractes ovate, concave[d].

It differs from *P. Pſyllium*, in having a perennial fuſiform root; the ſtem not villoſe but naked, ſhrubby, purpliſh, procumbent, then erect, diffuſed; leaves oppoſite, quite entire, erect, ſubvilloſe, whereas thoſe of the other are patulous and villoſe: the peduncles are only equal to or ſhorter than the leaves and ſolitary; the ſpikes are encircled with leaves and ſcales[e].

Native of the South of Europe, Barbary, and Siberia.—Cultivated in 1596, by Gerarde. It flowers from may to auguſt[f].

The ancients made a mucilage of the ſeeds by decoction both from this ſpecies and *Pl. Pſyllium*. It was eſteemed lubricating and pectoral, provided the ſeeds were neither bruiſed nor over boiled, the kernel being acrid[g]. They are now neglected.

37. Stem a foot high, upright, pubeſcent. Leaves ſubvilloſe, ſtriated. Spikes ſeveral at the ends of the branches[h].

Native of Sicily, and Barbary, in the kingdom of Tunis, along the coaſt of the iſland of Tabarque[i].

38. Root long, ſlender, twiſted, deſcending, putting out here and there capillary fibres. Stems herbaceous, ſeveral from one tuft, ſlender, pubeſcent. Leaves often bowed, ſomewhat rigid, thickiſh. Heads of flowers ſmall, ſtiff, ſeſſile or pedunculed. Peduncles ſhorter than the leaf. Bractes linear-awl-ſhaped, very ſmall. Corolla minute: ſegments ovoid, acute, pale ruſeſcent. It is an annual plant; native of Barbary, in the great deſert[k].]

Of this genus, Mr. Miller only ſays, that theſe plants being rarely cultivated in gardens, he ſhall only mention ſuch as grow naturally in England. 1. The common broad-leaved Plantain (P. major) called Waybread. 2. The great hoary Plantain (P. media) or Lamb's-tongue. 3. The narrow-leaved Plantain (P. lanceolata) or Ribwort: with the varieties, called Beſom and Roſe Plantain. They grow common in paſtures, and are frequently very troubleſome weeds.

Of the Coronopus or Buck's-horn Plantain there are two varieties growing in Britain: the common, which is plentiful on heaths; and the narrow-leaved, which is found upon many of the Welſh mountains. The firſt of theſe was formerly cultivated as a ſalad herb in

[a] Linn. ſyſt. [b] Hort. kew. [c] Murray. [d] Linn. ſpec. [e] Krocker. [f] Hort. kew. [g] Villars. [h] Linn. ſpec. [i] Poiret. [k] Desfontaines.

gardens,

gardens, but has been long baniſhed for its rank diſagreeable flavour. *Pl. Pſyllium* or Fleawort has been found in the earth thrown out of the bottom of the canals, which were dug for the Cheſea water-works. They are ſometimes imported from the South of France for medical uſe.

PROPAGATION AND CULTURE.

Theſe plants are ſeldom to be ſeen except in Botanic gardens, having little beauty. [The greater part are hardy enough to bear the open air in our climate. They riſe eaſily from ſeeds, of which they produce great abundance, and require no nicety in the cultivation. Some few, as n. 3. 9. 16. 33. 34. require the protection of the dry ſtove; and ſeveral of them muſt be ſcreened from froſt in ſevere winters.

PLANTAGO. See *Aliſma*, *Limoſella*, *Littorella*.

——— aquatica. See *Aliſma* and *Piſtia*.

PLANTAIN. See *Plantago*.]

PLANTAIN TREE. See [*Heliconia* and] *Muſa*.

[PLANTAIN, WATER. See *Aliſma*.

PLANTATIONS. See *Woods*.]

PLANTING.

Although the method of Planting the various ſorts of trees is fully ſet down under their ſeveral articles, where each kind is mentioned, yet it may not be amiſs to ſay ſomething in general upon that head in this place, which ſhall be treated as briefly as poſſible. And,

Firſt, the firſt thing in Planting trees is to prepare the ground (according to the different ſorts of trees intended to be planted) before the trees are taken out of the earth; for you ſhould ſuffer them to remain as little time out of the ground as poſſible.

In raking up the trees you ſhould carefully dig away the earth round their roots, ſo as to come at their ſeveral parts to cut them off; for if they are torn out of the ground without care, the roots will be broken and bruiſed very much to the great injury of the trees. When they are taken up, the next thing is to prepare them for Planting; in doing which there are two things to be principally regarded; the one is to prepare the roots, and the other to prune their heads, in ſuch a manner as may be moſt ſerviceable in promoting the future growth of the trees.

And firſt as to the roots; all the ſmall fibres are to be cut off as near to the place from whence they are produced as may be (excepting ſuch trees as are to be replanted immediately after they are taken up;) otherwiſe the air will turn all the ſmall roots and fibres black, which, if permitted to remain on when the tree is planted, will grow mouldy and decay, and thereby greatly injure the new fibres which are produced, ſo that many times the trees miſcarry for want of duly obſerving this. After the fibres are cut off, all the bruiſed or broken roots ſhould be cut ſmooth, otherwiſe they are apt to rot and diſtemper the trees; and all irregular roots which croſs each other, and the downright roots, (eſpecially in fruit-trees) muſt be cut off; ſo that when the roots are regularly pruned, they may in ſome meaſure reſemble the fingers of a hand when ſpread open; then the larger roots ſhould be ſhortened in proportion to the age and ſtrength of the tree, as alſo the particular ſorts of trees are to be conſidered; for the Walnut, Mulberry, and ſome other tender-rooted kinds ſhould not be pruned ſo cloſe, as the more hardy ſorts of fruit or foreſt-trees, which in young fruit-trees, ſuch as Pears, Apples, Plums, Peaches, &c. that are one year old from budding or grafting, may be left about eight or nine inches long; but in older trees they muſt be left of a much greater length; but this is to be underſtood of the larger roots only, for the ſmall ones muſt be quite cut out, or pruned very ſhort. Their extreme parts, which are generally very weak, commonly decay after moving, ſo that it is the better way entirely to diſplace them.

The next thing is the pruning of their heads, which muſt be differently performed in different trees, for the deſign of the trees muſt alſo be conſidered; if they are fruit trees, and intended for walls or eſpaliers, it is the better way to plant them with the greateſt part of their heads, which ſhould remain on until the ſpring, juſt before the trees begin to ſhoot, when they muſt be cut down to five or ſix eyes (as is fully inſerted in the ſeveral articles of the various kinds of fruit) being very careful, in doing of this, not to diſturb the new roots.

But if the trees are deſigned for ſtandards, you ſhould prune off the ſmall branches cloſe to the places where they are produced; as alſo irregular branches which croſs each other, and by their motion, when agitated by the wind, rub and bruiſe their bark, ſo as to occaſion many times great wounds in thoſe places; beſides, it makes a diſagreeable appearance, and adds to the cloſeneſs of its head, which ſhould always be avoided in fruit trees, whoſe branches ſhould be preſerved as far diſtant from each other, as they are uſually produced when in a regular way of growth, (which is in all ſorts of trees proportionable to the ſize of their leaves, and magnitude of their fruit) for when their heads are very thick, which is often occaſioned by the unſkilful ſhortening of their branches, the ſun and air cannot freely paſs between the leaves, ſo that the fruit muſt be ſmall and ill-taſted. But to return: after having diſplaced theſe branches, you ſhould alſo cut off all ſuch parts of branches, as have by accident been broken or wounded; for theſe will remain a diſagreeable ſight, and often occaſion a diſeaſe in the tree. But you ſhould by no means cut off the main leading ſhoots, as is by too many practiſed, for thoſe are neceſſary to attract the ſap from the root, and thereby promote the growth of the tree; for from ſeveral experiments which I made in the winter of 1729, by cutting off the branches of ſeveral ſorts of trees, and putting them into phials filled with water, whoſe tops were cloſely covered to prevent the evaporating of the water, I found, that thoſe ſhoots, whoſe leading buds were preſerved, did attract the moiſture in much greater quantities than thoſe ſhoots whoſe tops were cut off; and from ſeveral experiments made by the Rev. Dr. Hales, we find that great quantities of moiſture are imbibed at wounds, where branches are cut off; ſo that by thus ſhortening the branches, the wet, which generally falls in great plenty during the winter ſeaſon, is plentifully imbibed, and for want of leaves to perſpire it off, mixes with the ſap of trees, and thereby diſtending the veſſels, deſtroys their contracting force, which many times kills the tree, or at leaſt weakens it ſo much as not to be recovered again for ſome years, as I have ſeveral times obſerved.

But being willing to try this experiment again in the month of October 1733, I made choice of two ſtandard Almond-trees of equal ſtrength and age; theſe I took up as carefully as poſſible, and having prepared their roots as before directed, I pruned their heads in the following manner, viz. from one of them I only cut off the ſmall branches, and ſuch as were bruiſed or broken, but preſerved all the ſtrong ones entire; of the other, I ſhortened all the ſtrong branches, and pruned off the weak and broken ſhoots, as is the common practice. Theſe two trees I planted in the ſame ſoil and to the ſame ſituation, gave them both equal attendance, and managed them both as nearly alike as poſſible; yet in the ſpring, when theſe trees began to ſhoot, that, whoſe branches were entirely preſerved, came out early, continued to ſhoot ſtronger, and is at preſent much larger, and in better health than the other. And ſince this I have made ſeveral other experiments of the like nature, which have conſtantly ſucceeded in the ſame manner, from whence it is reaſonable to conclude, that the ſhortening of the branches is a great injury to all new-planted trees, but eſpecially to Cherries and Horſe Cheſtnuts, which are frequently killed by ſhortening their large branches when they are removed.

Having thus prepared the trees for Planting, we muſt now proceed to the placing them into the ground; but before this, I would adviſe, if the trees have been long out of the ground, ſo that the roots are dried, to place them in water eight or ten hours before they are planted, obſerving to put them in ſuch manner, that their heads may remain erect, and their roots only immerſed therein, which will ſwell the dried veſſels of the roots, and prepare them to imbibe nouriſhment from

from the earth. In fixing them, great regard ſhould be had to the nature of the ſoil, which if cold and moiſt, the trees ſhould be planted very ſhallow; as alſo, if it be a hard rock or gravel, it will be much the better way to raiſe a hill of earth where each tree is to be planted, than to dig into the rock or gravel, and fill it up with earth (as is too often practiſed), whereby the trees are planted, as it were in a tub, there being but little room for their roots to extend; ſo that after two or three years growth, when their roots have extended to the ſides of the hole, they are ſtopped by the rock or gravel, can get no farther, whereby the trees will decline, and in a few years die; beſides, theſe holes detain the moiſture ſo, that the fibres of the plants are often rotted thereby. But when they are raiſed above the ſurface of the ground, their roots will extend and find nouriſhment, though the earth upon the rock or gravel be not three inches thick, as may be frequently obſerved, where trees are growing upon ſuch ſoils.

The next thing to be obſerved is to place the tree in the hole in ſuch manner, that the roots may be about the ſame depth in the ground, as they were growing before they were taken up; then break the earth fine with a ſpade, and ſcatter it into the hole, ſo that it may fall in between every root, that there may be no hollowneſs in the earth (but you ſhould by no means ſift or ſcreen the mould, for reaſons given in ſome other places); then having filled in the earth, you ſhould gently tread it cloſe with your feet, but do not make it too hard, which is a very great fault, eſpecially if the ground is ſtrong and inclinable to bind.

Having thus planted the trees, you ſhould provide a parcel of ſtakes; one of which ſhould be driven down by the ſide of the trees, and faſtened thereto to ſupport them from being blown down or diſplaced by the wind; then lay ſome mulch upon the ſurface of the ground, about their roots, to prevent the earth from drying.

This is to be underſtood of ſtandard-trees which caſt their leaves; for ſuch as are planted againſt walls, ſhould have their branches faſtened to the wall to prevent the trees from being diſplaced by the wind; but there is no difference in their management, only to preſerve their heads entire, and to place their roots about five inches from the wall, inclining their heads thereto; and the ſpring following, juſt before they ſhoot, their heads ſhould be cut down to five or ſix buds, as is fully directed under the ſeveral articles of the different kinds of fruit.

As to the watering of all new-planted trees, I ſhould adviſe it to be done with great moderation, nothing being more injurious to them than over-watering. Examples enough of this kind may have been ſeen in many parts of England, where plantations have been over-watered, whereby the greateſt part of the trees have failed, or thoſe which have ſurvived, have made little progreſs, occaſioned by the abundance of water given to them, whereby the fibres were rotted off as ſoon as produced. And how can any perſon imagine that a tree ſhould thrive, when the ground, in which it is planted, is continually flooted with water? for by an experiment made by the Rev. Dr. Hales, in placing the roots of a dwarf Pear-tree in water, the quantity of moiſture imbibed decreaſed very much daily, becauſe the ſap-veſſels of the roots, like thoſe of the cut-off boughs in the ſame experiment, were ſo ſaturated and clogged with moiſture, by ſtanding in water, that more of it could not be drawn up. And this experiment was tried upon a tree which was full of leaves, and thereby more capable to diſcharge a large quantity of moiſture than ſuch trees as are entirely deſtitute of leaves; ſo that it is impoſſible ſuch trees can thrive, where the moiſture is too great about their roots.

The ſeaſons for planting are various, according to the different ſorts of trees, or the ſoil in which they are planted; for ſuch trees whoſe leaves fall off in winter, the beſt time is in the middle or end of october, provided the ſoil be dry; but for a very wet ſoil, it is better to defer it until the latter end of february, or the beginning of march; and for many kinds of Evergreens, the beginning of april is by far the beſt ſeaſon, though ſome ſorts may be ſafely removed at midſummer, provided they are not to be carried very far; but you ſhould always make choice of a cloudy ſeaſon, if poſſible, at that time of the year, when they will take freſh root in a few days. And, on the contrary, when theſe trees are removed in winter, during which time they are almoſt in a ſtate of reſt, they do not take root until the ſpring advances, and ſets the ſap in motion; ſo that many times they die, eſpecially if the winter proves ſevere.

As to the preparing the ſoil for Planting, that muſt alſo be done to ſuit the different ſorts of trees, ſome requiring a light ſoil, others a ſtrong one, &c. But this is fully ſet down in the ſeveral articles of trees, under their proper heads, to which the reader is deſired to turn; though for the fruit-trees in general, a freſh ſoil from a paſture ground, which is neither too light and dry, nor over-ſtrong and moiſt, but rather a gentle, ſoft, loamy earth is to be preferred, provided it be expoſed ſome time. And if it be for wall trees, will be the better if the borders are filled with this earth ſix or eight feet wide, but it need not be above two feet and a half deep at moſt; for when the borders are made too deep, the roots of theſe trees are enticed downward, which is of bad conſequence to fruit-trees, as hath been elſewhere obſerved. The ſame alſo muſt be obſerved for ſtandard-trees (where freſh earth is brought to the places in which they are planted), not to make the holes too deep, but rather let them have the ſame quantity of earth in width, which is much to be preferred.

There are ſeveral perſons who direct the placing the ſame ſide of the tree to the ſouth, which before removing had that poſition, as a material circumſtance to be ſtrictly regarded; but from ſeveral trials which I have made, I could not obſerve the leaſt difference in the growth of thoſe trees which were ſo placed, and others which were reverſed; ſo that I conclude, it is not of any conſequence to obſerve this method.

The diſtance which trees ſhould be planted at, muſt alſo be proportioned to their ſeveral kinds, and the ſeveral purpoſes for which they are intended, all which is explained under their ſeveral heads; but fruit-trees, planted either againſt walls, or for eſpaliers, ſhould be allowed the following diſtances: for moſt ſorts of vigorous-ſhooting Pear-trees, from thirty-ſix to forty feet; for Apricots, ſixteen or eighteen feet; Apples, twenty-five or thirty feet; Peaches and Nectarines, twelve feet; Cherries and Plums, twenty-five feet, according to the goodneſs of the ſoil or the height of the wall. But as theſe things are mentioned in the ſeveral articles of fruit trees, it will be needleſs to repeat any more in this place.

What hath been mentioned on this article chiefly relates to fruit-trees and evergreens, for gardens; but I ſhall now proceed to the planting of foreſt and other trees, which are in all large plantations of parks and extenſive gardens the moſt numerous. The modern practice of tranſplanting theſe ſorts of trees, from hedge-rows and woods, of large ſizes, and at a great expenſe, has too generally prevailed in this kingdom, the generality of planters being in too great haſte, and by a miſtaken notion of ſaving time, begin by tranſplanting ſuch large trees as they find on their own eſtates, or that they can procure in their neighbourhood, and pleaſe themſelves with the hopes of having fine plantations ſoon; but if, inſtead of removing theſe trees, they would begin by making a nurſery, and raiſing their trees from ſeeds, they would ſave a great expenſe and much time, and they would have the conſtant pleaſure of ſeeing their trees annually advance in their growth, inſtead of growing worſe, as will always be the caſe where old trees are removed, though many perſons flatter themſelves with the hopes of ſucceſs, when they find their trees ſhoot out the following ſeaſon; and as theſe will often continue to grow for ſome years after, they continue their expectations, till after waiting many years, in which time they might have had ſeedling trees grown up to a fine ſize, if they had been ſown at the time the large trees were planted, they find their trees annually decaying, when they

they moſt expected their increaſe; and of all the plantations which I have yet ſeen of theſe large trees of any ſort, there is ſcarce one which has ever ſucceeded.

In ſome of theſe plantations, all the Elms which could be procured from the neighbouring hedge-rows have been removed, moſt of which having been ſuckers produced from the old ſtumps, have ſcarce any roots: theſe have, at a great expenſe, been planted and watered, and perhaps many of them have made conſiderable ſhoots, the whole length of the ſtem at every knot, and many of them have continued ten or twelve years alive, but have not increaſed in the girt of their ſtems half an inch, and all that time have been decaying at their heart, and growing hollow; ſo that when a ſevere froſt in winter, or a great drought in ſummer, has happened, there has been an almoſt total deſtruction of the trees.

In other places I have ſeen great numbers of tall Oaks tranſplanted, which have appeared to thrive for ſome years when firſt planted; but in five or ſix years after have begun to decay at their top, and have leiſurely died to the ground, than which nothing can be a more diſagreeable ſight to the owner. And the method which is commonly practiſed in tranſplanting theſe trees would deſtroy them, were there a poſſibility of ſuch large trees ſurviving their removal, which is, that of cutting off all their branches; for, were the ſame practiſed on a tree of the ſame age unremoved, it would ſtint the growth ſo much as not to be recovered in ſeveral years, nor would it ever arrive to the ſize of ſuch as have all their branches left on them. But the reaſon given for this practice is, that if the branches were left upon the trees, they could not be ſupported, the winds would throw them out of the ground; and another (which is bad philoſophy) is, that as the roots have been greatly reduced by tranſplanting, ſo the heads of the trees ſhould be reduced in the ſame proportion. As to the firſt, it muſt be allowed, that trees which are removed with great heads, are with great difficulty preſerved in their upright ſituation; for the winds will have ſuch power againſt the branches as to overſet the trees, if they are not very ſtrongly ſupported with ropes. Therefore this may be brought as an objection to the tranſplanting of large trees, rather than in ſupport of a practice which is ſo prejudicial to them: and as to the other reaſon, it has no foundation; for if large amputations are made at the root, there ſhould not be the ſame practiſed on the head, becauſe the wounded part of the head will imbibe the air at every orifice, to the great prejudice of the tree. Beſides this, if we pay any regard to the doctrine of the circulating of the juices in plants, we muſt allow, that the heads of the trees are equally uſeful to nouriſh the roots, as the roots are to the heads; ſo that if there is a waſte of ſap both at the top and bottom of the trees, it muſt weaken them in proportion. For whoever will be at the trouble to try the experiment on two trees of equal age and health, and cut the branches off from one, and leave them upon the other at the time of tranſplanting, if the latter is well ſecured from blowing down, it will be found to ſucceed much better than the other; or if the ſame thing is practiſed upon two trees left ſtanding, the tree whoſe branches are cut off, will not make half the progreſs as the other, nor will the ſtem increaſe in its bulk half ſo faſt. Therefore where trees are tranſplanted young, there will be no neceſſity for uſing this unnatural amputation, and the ſucceſs of theſe plantations will always give pleaſure to the owner. I have ſeen ſome plantations of Oak-trees, which were made fifty years ago, and had thriven beyond expectation moſt part of the time, but are now annually decaying, and ſeem as if they would not continue many years longer, when the trees on the ſame ſoil and in the ſame ſituation, which were left ſtanding, are in perfect health and vigour; and ſome of theſe tranſplanted trees which have been cut down, were found to be of little value, their timber being ſhaken and bad.

It is common to hear perſons remarking that from the preſent ſpirit of Planting, great advantages will accrue to the public by the increaſe of timber; but whoever is the leaſt ſkilled in the growth of timber muſt know, that little is to be expected from moſt of the plantations which have lately been made; for there are few perſons who have had this in their view when they commenced planters, and of thoſe few ſcarce any of them have ſet out right; for there never was any valuable timber produced from trees which were tranſplanted of any conſiderable ſize, nor is any of the timber of the trees which are tranſplanted young, equal in goodneſs to that which has grown from the ſeeds unremoved. Beſides, if we conſider the ſorts of trees which are uſually planted, it will be found, that they are not deſigned for timber; ſo that upon the whole, it is much to be doubted, whether the late method of planting has not rather been prejudicial to the growth and increaſe of timber, than otherwiſe.

Before I quit this ſubject of Planting, I muſt beg leave to obſerve, that moſt people are ſo much in a hurry about Planting, as not to take time to prepare their ground for the reception of trees, but frequently make holes and ſtick in the trees, amongſt all ſorts of rubbiſh which is growing upon the land; and I have frequently obſerved, that there has not been any care afterwards taken to dig the ground, or root out the noxious plants; but the trees have been left to ſtruggle with theſe bad neighbours, who have had long poſſeſſion of the ground, and have eſtabliſhed themſelves ſo ſtrongly, as not to be eaſily overcome; therefore, what can be expected from ſuch plantations? This is to be underſtood of deciduous trees, for the Pines and Firs, if once well rooted in the ground, will ſoon get the better of the plants and deſtroy them.

There are ſome other perſons who begin better than the former, and who will be at the expenſe of preparing the ground and of planting their trees, but afterwards take very little care of them; ſo that it is common to ſee them overgrown with weeds in a year after they are planted, whereby the trees receive ſo much injury as to retard their growth, and many times, if the trees are young, they are totally deſtroyed. Therefore I would adviſe every perſon who propoſes to plant, to prepare the ground well before-hand, by trenching or deep ploughing it, and clearing it from the roots of all bad weeds; for by ſo doing, there will be a foundation laid for the future ſucceſs of the plantation. Alſo I adviſe no perſon to undertake more of this work than he can afterward keep clean, for all plantations of deciduous trees will require this care, at leaſt for ſeven years after they are made. Therefore all ſmall plantations ſhould have the ground annually dug between the trees; and as to thoſe which are large, it ſhould be ploughed between them. This will encourage the roots of the trees, to extend themſelves, whereby they will find a much greater ſhare of nouriſhment, and by looſening the ground, the moiſture and air will more eaſily penetrate to the roots, to the no ſmall advantage of the trees. But beſides this operation, it will be abſolutely neceſſary to hoe the ground three or four times in ſummer, either by hand or the hoe-plough. This I am aware will be objected to by many, on account of the expenſe; but if the firſt hoeing is performed early in the ſpring, before the weeds have gotten ſtrength, a great quantity of ground may be gone over in a ſhort time; and if the ſeaſon is dry when it is performed, the weeds will preſently die after they are cut; and if this is repeated before the weeds come up again to any ſize, it will be found the cheapeſt and very beſt huſbandry; for if the weeds are ſuffered to grow till they are large, it will be a much greater expenſe to root them out, and make the ground clean; beſides, the weeds will rob the trees of great part of their nouriſhment. I have ſometimes been told, that it is neceſſary to let the weeds grow among trees in ſummer, in order to ſhade their roots, and keep the ground moiſt, but this has come from perſons of no ſkill; but as others may have been deceived by ſuch advice, I imagine it may not be improper to give ſome anſwer to this. And here I muſt obſerve, That if weeds are permitted to grow, they will draw away all moiſture from the roots of the trees for their own nouriſhment, ſo that the trees will be thereby deprived

of the kindly dews and the gentle ſhowers of rain, which are of great ſervice to young plantations; and theſe will be entirely drawn away by the weeds, which will prevent their penetrating the ground, ſo that it is only the great rains which can deſcend to the roots of the trees. And whoever has the leaſt doubt of this matter, if they will but try the experiment, by keeping one part of the plantation clean, and ſuffer the weeds to grow on another, they will ſoon be convinced of the truth by the growth of the trees. And though this cleaning is attended with an expenſe, yet the ſucceſs will overpay this, beſide the additional pleaſure of ſeeing the ground always clean.

In the diſpoſition of trees in parks, and of ſhrubs and trees in gardens, there are very few of thoſe who call themſelves deſigners, who have had much regard to this particular; for in moſt of the modern plantations, it is not uncommon to ſee an Oak, an Elm, or ſome other large-growing tree planted where a Roſe-buſh, a Honeyſuckle, or Sweet-briar, might with more propriety occupy the ſpace: ſo that in a few years, if theſe large trees are left growing, the whole plantation muſt make a diſagreeable appearance. See NURSERY and WOODS.

[PLATANARIA. See *Sparganium*.

PLATANI FOLIO. See *Carica*.

PLATONOCEPHALUS. See *Nauclea*.]

PLATANUS (*of Pliny, &c. and* Πλατανος *of Theophraſtus and Dioſcorides; from* πλατυς *wide; the leaves of this tree being very wide: or rather, from its ſpreading branches.*)

Lin. gen. n. 1075. *Reich. n.* 1173. *Schreb. n.* 1451. *Gærtn. t.* 90. *Tournef. t.* 363. *Juſſ.* 410.

Claſſ. 21. 7. Monoecia Polyandria.

Nat. order of *Amentaceæ*.

GENERIC CHARACTER.

* *Male Flowers* compound, forming a globular *Ament*.

CAL. A few very ſmall jags.

COR. ſcarcely apparent.

STAM. *Filaments* oblong, thicker at top, coloured. *Anthers* four-cornered, growing round the filament at the lower part.

* *Female Flowers* forming a globe, numerous, on the ſame tree.

CAL. *Scales* many, very ſmall.

COR. *Petals* many, concave, oblong, club-ſhaped.

PIST. *Germs* many, awl-ſhaped, ending in awl-ſhaped *Styles*; with a recurved *Stigma*.

PER. none. *Fruits* many, collected into a globe.

SEED roundiſh, placed on a briſtle-ſhaped peduncle, and terminated by the awl-ſhaped ſtyle; with a capillary *pappus* adhering to the baſe of the ſeed.

OBS. *The parts of the flowers require a more attentive examination by ſuch as have a ſharp ſight.*

ESSENTIAL CHARACTER.

MALE. *Cal.* Ament globular. *Cor.* ſcarcely apparent. *Anthers* growing round the filament.

FEM. *Cal.* Ament globular. *Cor.* many-petalled. *Stigma* recurved. *Seeds* roundiſh, mucronate with the ſtyle, pappoſe at the baſe.

SPECIES.

1. Platanus orientalis. *Oriental Plane Tree.*
   Lin. ſpec. 1417. *Juſſ.* 859. *Reich.* 4. 170. *hort. cliff.* 447. *Gærtn. fruct.* 2. 57. *Hoffeliqu. itin.* 487. *Gron. orient.* 293. *Pallas roſſ.* 1. 2. *p.* 1. *t.* 51. *Du Roi harbk.* 2. 130. *Medic. in obſ. ſoc. œcon. Lutr.* 1774. *p.* 240. *Ait. kew.* 364. *Hunt. Evel. ſilva.* 2. 53.
   Platanus. *Bauh. pin.* 431. *Cluſ. hiſt.* 1. 9. *Dalech. hiſt.* 92. *Belon. itin.* 9. *Dod. pempt.* 842. *Matth.* 133. *Ger.* 1304. *emac.* 1489.
   P. orientalis vera. *Park. theat.* 1427. *Raii hiſt.* 1706. *Duham. arb.* 2. 171. *n.* 1. *t.* 33.
   α. P. O. elongata. *Common Oriental Plane Tree.*
   Leaves attenuated at the baſe, flat.
   β. P. O. acerifolia. *Spaniſh Plane Tree.*
   Ait. kew. 3. 364.
   P. orientalis Aceris folio. *Tournef. Duham. arb.* 2. *Du Roi harbk.* 133.
   Leaves tranſverſe.
   γ. P. O. undulata. *Wave-leaved Plane Tree.*
   Leaves attenuated at the baſe, waved.
   Leaves ſubpalmate, nerves ſmoothiſh underneath.
2. Platanus occidentalis. *American Plane Tree.*
   Lin. ſpec. 1418. *Juſſ.* 859. *Reich.* 4. 170. *hort. cliff.* 78. *Gron. virg.* 151. *Kalm. itin.* 2. 198. *Engl. edit.* 1762. *Du Roi harbk.* 2. 134. *Medic. in obſ. ſoc. œcon. Lutr.* 1774. *p.* 239. *Coteſb. car.* 1. 156. *t.* 56. *Hunt. Evel. ſilv.* 2. 54. *Ait. kew.* 3. 365.
   P. occ. ſ. virginenſis. *Park. theat.* 1427. *f.* 2. *Raii hiſt.* 1707. *Duham. arb. t.* 25.
   Leaves lobed-angular, nerves tomentoſe underneath.

DESCRIPTIONS, *&c.*

1. The firſt ſort, or Eaſtern Plane-tree, grows naturally in Aſia, where it becomes very large; the ſtem is tall, erect, and covered with a ſmooth bark, which annually falls off; it ſends out many ſide branches, which are generally a little crooked at their joints; the bark of the young branches is of a dark brown, inclining to a purple colour; the leaves are placed alternate, on foot-ſtalks an inch and a half long; the leaves themſelves are ſeven inches long and eight broad, deeply cut into five ſegments, and the two outer are ſlightly cut again into two more; theſe ſegments have many acute indentures on their borders, and have each a ſtrong midrib, with many lateral veins running to the ſides; the upper ſide of the leaves is of a deep green, and the under ſide pale. The flowers come out upon long peduncles hanging downward, each ſuſtaining five or ſix round balls of flowers; the upper, which are the largeſt, are more than four inches in circumference; theſe ſit very cloſe to the peduncle. The flowers are ſo ſmall as ſcarce to be diſtinguiſhed without glaſſes; they come out a little before the leaves, which is the beginning of June; and in warm ſummers the ſeeds will ripen late in autumn, and if left upon the trees will remain till ſpring, when the balls fall to pieces, and the briſtly down which ſurrounds the ſeeds, helps to tranſport them to a great diſtance with the wind.

[Du Roi remarks, that the leaves vary in figure, but are always ſmooth; and that the peduncles are brown. Pallas ſays, that the leaves, when young, are white-tomentoſe; but when old, the petioles only are ſo; that the peduncles are ſmooth; that it differs moſt from the Occidental Plane-tree in having ſcarcely any ſtipules on the adult branches; and that the wood is very hard, reddiſh with browniſh-gray tranſverſe ſtreaks.

Gærtner thus deſcribes the fruit.—Pericarp none, unleſs the ſuberous or corky cruſt of the ſeed be taken for it. Common integument globular, corky, attended on every ſide by the ſeeds heaped together very cloſely, when mature naked, without any viſible ſcale. Seed naked, club-ſhaped, from an awl-ſhaped peduncle, compreſſed a little or ſomewhat angular, thickened into a globular head, and dagger-pointed with the permanent ſtyle or ſtigma; at the baſe crinite with fulvous ſimple ſtraight hairs, not exceeding the head in length. Integument double: outer thick, ſomewhat woody, not opening, but eaſily ſplit from the baſe upwards, ſo that it may be taken for a capſule: inner membranaceous, very thin, pale. Albumen none. Embryo oblong, compreſſed, inverted, yellowiſh, much ſhorter than the ſhell of the ſeed. Cotyledons linear, ſomewhat leafy. Radicle roundiſh, ſuperior.

Native of the Levant, and many other parts of Aſia. On mount Taurus, Athos, Macedonia, Lemnos, Crete, moſtly near water[1]. In Perſia and perhaps Georgia, where there are very handſome trees, four yards in circumference; on mount Caucaſus, where it is very common, it takes the form of a large ſhrub; as the American Plane does, in the gardens at St. Peterſburgh[2].

The Plane Tree has always been much eſteemed in the Eaſtern countries, where it grows naturally, for its beauty, and grateful ſhade. Evelyn, Miller, and Gilpin have related at length, from Ælian, the adoration that was paid by Xerxes, to a tree of this ſort in

[1] Linn. [2] Pallas.

Phrygia.]

Phrygia.] And wherever any ſumptuous buildings were erected in that country, the porticoes, which opened to the air, generally terminated in groves of lines of theſe trees.

[It was no leſs eſteemed in Italy after it was introduced there. Pliny informs us, that it was firſt brought over the Ionian ſea, into the iſland of Diomedes, for a monument to that hero; thence it paſſed into Sicily, and ſo into Italy [s]. It was planted near their houſes, and in rows for walks; and was even irrigated with wine.]

Pliny affirms, that there is no tree whatſoever which ſo well defends us from the heat of the ſun in ſummer, or that admits it more kindly in winter; the branches being produced at a proportional diſtance to the largeneſs of the leaves; (which holds good in all ſorts of trees yet known): ſo that when the leaves are fallen in winter, the branches eaſily admit the rays of the ſun. [Virgil calls the Platanus *ſterilis*, not becauſe it bears no ſeed, but no fruit that is eatable.]

Mr. Miller ſays, it is generally ſuppoſed, that the introduction of this tree in England is owing to the great lord chancellor Bacon, who planted a noble parcel of them at Verulam, which were very flouriſhing ſome years ſince, but have lately been deſtroyed.

[Mr. Evelyn alſo ſays—the introduction of this true Plane among us, is *perhaps* due to the great lord chancellor Bacon, who planted thoſe, ſtill flouriſhing ones (1706) at Verulam. He adds, that he owed a hopeful plant then growing at his own villa to the late Sir George Crook, of Oxfordſhire. He ſpeaks of the true Plane of antiquity, as being very rare in England in his time, and of the American Plane as more common.]

Mr. Miller alſo informs us, that there were very few large Oriental Plane Trees to be ſeen; which he thinks might be owing to the great eſteem perſons of the laſt age had for the Lime Tree, which being much eaſier to propagate, and of quicker growth during the three or four firſt years, became more faſhionable for avenues and ſhady walks near habitations.

[But we had the Oriental Plane-tree in England certainly before the time of Lord Bacon; for it appears from Turner's herbal, that it was cultivated here as early as 1562 [t]: whereas the Chancellor was born only in 1561. The plantations however at Verulam might be the firſt of any note or conſideration.

Mr. Boutcher from Evelyn, and he from Rieciolus, ſays that the Turks uſed to build moſt of their ſhips with this timber; that it was hard, cloſe, takes a fine poliſh, and is valuable for a variety of uſeful purpoſes. Mr. Marſhall, ſeemingly with more reaſon, ranks this wood with that of the Great Maple, vulgarly called Sycamore, and in the North of England Plane Tree.

With us it is conſidered merely as an ornamental tree, and is not ſo common as the American Plane even in ornamental plantations.] Notwithſtanding its backwardneſs in coming out in the ſpring, and the ſudden decay of its leaves in autumn, yet for its goodly appearance, and the great ſize to which it will grow, the Oriental Plane deſerves a place in all large plantations, or ſhady receſſes, eſpecially near the manſion, or on a moiſt ſoil and near ſtreams of water, in which ſituations it will arrive at a prodigious magnitude.

[Lady Craven ſpeaks of ſome which ſhe ſaw in the Turkiſh dominions of a ſize ſo gigantic, that the largeſt trees we have in England, placed near them, would appear only like broomſticks.

Pauſanius tells us of a Plane-tree of extraordinary ſize and beauty in Arcadia, ſuppoſed to be planted by Menelaus; ſo that the age of the tree, when Pauſanias ſaw it, muſt have been about thirteen hundred years [u]. That the tree was large and handſome we may believe, but no tradition can be ſufficient to perſuade us that a Plane-tree ever attained ſuch an age, provided it was found when Pauſanias ſaw it.

Pliny mentions other remarkable Plane-trees: as one in Lycia that had mouldered away into an immenſe cave, eighty feet in circumference. Licinius Mutianus, governor of that province, with eighteen others dined commodiouſly on the benches of pumice placed round the body of it.

Caligula alſo had a tree of this ſort at his villa near Velitræ. The hollow of the trunk held fifteen perſons at dinner, with a proper ſuite of attendants [x].]

That which is called Maple-leaved Plane is certainly a ſeminal variety of the Eaſtern Plane, for the ſeeds which ſcattered from a large tree of this variety in the Chelſea garden have produced plants of the common ſort ſeveral times. The Maple-leaved Plane has not its leaves ſo deeply cut as thoſe of the Eaſtern Plane: they are divided into five ſegments, pretty deep, but are not lobed, like thoſe of the Occidental Plane. The petioles are much longer than in either of the ſpecies, and the upper ſurface of the leaves is rougher, ſo that they might be taken for different ſorts, if we did not know that they roſe from the ſame ſeeds.

The Spaniſh Plane-tree has larger leaves than either of the ſorts; and are more divided than thoſe of the Occidental, but not ſo much as thoſe of the Oriental. Some of the leaves are cut into five, and others into three lobes only; theſe are ſharply indented on the edges, and are of a light green; the foot-ſtalks are ſhort, and covered with a ſhort down. This is by ſome called the middle Plane-tree, from the leaves being of a ſhape between the two ſpecies.

2. The ſecond ſort grows naturally in moſt parts of North America; this tree alſo grows to a large ſize, the ſtem very ſtraight, and of equal girt moſt part of the length; the bark is ſmooth, and annually falls off like that of the other: the branches extend wide on every ſide; the young ones have a browniſh bark, but the old ones have a gray bark; the foot-ſtalks of the leaves are three inches long; the leaves are ſeven inches long, and ten broad; they are cut into three lobes or angles, and have ſeveral acute indentures on their borders, with three longitudinal midribs, and many ſtrong lateral veins. The leaves are of a light green on their upper ſide, and paler on their under. The flowers grow in round balls like the former, but are ſmaller. The leaves and flowers come out at the ſame time with the former, and the ſeeds ripen in autumn.

[Kalm, who calls it the Virginian Maple, ſays that it grows in plenty on the ſhores of the Delaware. The Engliſh Americans call it Button-wood, (from the catkins or aments) or Water Beech, which is more common. It grows moſtly in low places, but eſpecially on the edge of rivers and brooks. It is eaſily tranſplanted to drier places, if the ſoil be good; and as the leaves are large and the foliage thick, it is planted about houſes and in gardens, to afford a pleaſant ſhade in the hot ſeaſon. It likewiſe grows in marſhes and in ſwampy fields, with the Aſh and Red Maple. It is remarkable for its quick growth; and is frequently as tall and thick as the beſt Fir trees. There are ſuch numbers of them on the low meadows between Philadelphia and the ferry at Glouceſter, on both ſides of the road, that in ſummer it is a ſhady walk all the way. In Philadelphia near the Sweediſh church, ſome great Plane-trees ſtand on the ſhore of the river.

It appears from Parkinſon that the American Plane was introduced here before 1640, by Mr. John Tradeſcant, junior [y]. Johnſon, in his additions to Gerarde's herbal, printed in 1633, mentions that there were two young ones at that time growing with Mr. Tradeſcant. He does not ſeem indeed to have known that theſe were of a different ſpecies from thoſe which Gerarde ſays his ſervant William Marſhal (whom he ſent into the Mediterranean ſea as ſurgeon unto the Hercules of London) found growing in Lepanto, hard by the ſea ſide, at the entrance into the town, a port of Morea; and from thence brought one of the rough bottons, being the fruit thereof. Theſe were Oriental Planes; but there is no doubt that the young trees growing with Mr. Tradeſcant were Occidental Planes.

[s] Martyn's Virg. Georg. p. 70. p. 121. [t] Hort. kew.
[u] Gilpin's Forest scenery, vol. 1. p. 50 and 125.
[x] Idem. p. 123 to 125. [y] Hort. kew.

In more than a century and half it has not become very common, although, as Mr. Marſhall ſays, it is particularly refreſhing to the eye, and truly ornamental; the bright colour giving variety to groves and maſſes of wood; and in ſingle trees or groups being ſingularly elegant.

The ſtem of the Occidental Plane, ſays Mr. Gilpin, is very picturesque: it is ſmooth and of a light aſh colour, and has the property of throwing off its bark in ſcales; thus naturally cleanſing itſelf, at leaſt its larger boughs, from moſs and other paraſitical incumbrances.

No tree forms a more pleaſing ſhade. It is full-leaſed, and its leaf is large, ſmooth, of a fine texture, and ſeldom injured by inſects. Its lower branches ſhooting horizontally, ſoon take a direction to the ground; and the ſpray, by twiſting about in various forms, fills up every little vacuity with ſhade. At the ſame time it muſt be owned, the twiſting of its branches is a diſadvantage, when the tree is ſtripped of its leaves, and reduced to a ſkeleton. Nor indeed does its foliage, from the largeneſs of the leaf, and the mode of its growth, make the moſt picturesque appearance in ſummer. The ſummer-leaf alſo both of this and the Oriental Plane, wears ſo light a hue, as to mix ill with the foliage of the Oak, the Elm, and other trees. On the ſkirts of a plantation they ſometimes form, during the ſummer, a diſagreeable ſpot. In autumn, their leaves receive a mellow tint, which harmonizes very well with the waning colour of the wood.

One of the fineſt Occidental Planes, adds Mr. Gilpin, ſtands in my own garden at Vicar's-hill, where its boughs, feathering to the ground, form a canopy of above fifty feet in diameter.

At Shadwell Lodge in Norfolk, the ſeat of John Buxton, Eſq. a Plane Tree was planted in april 1744; it was then eight feet high. In april 1775, the height was ſixty-five feet nine inches; the girt at half a foot from the ground was ſeven feet nine inches; at twenty feet, four feet ſix inches[a].]

PROPAGATION AND CULTURE.

1. The Eaſtern Plane-tree is propagated either from ſeeds, or by layers, the latter of which is generally practiſed in England; though the plants thus raiſed ſeldom make ſo large ſtraight trees, as thoſe which are produced from ſeeds; but it has been generally thought that the ſeeds of this tree were not productive, becauſe they have not been ſown at a proper ſeaſon, nor managed in a right manner; for I have had thouſands of the young plants ſpring up from the ſeeds of a large tree, which ſcattered upon the ground in a moiſt place: and I ſince find, that if theſe ſeeds are ſown ſoon after they are ripe, in a moiſt ſhady ſituation, they will riſe extremely well; and the plants thus obtained, will make a conſiderable progreſs after the ſecond year, being much hardier and leſs liable to loſe their tops in winter, than thoſe which are propagated by layers. And ſince the ſeeds of this tree frequently ripen well in England, they may be propagated in as great plenty as any other foreſt-tree.

2. The Virginian Plane-tree will grow extremely well from cuttings, if they are planted the beginning of october upon a moiſt ſoil; and if they are watered in dry weather, will make a prodigious progreſs; ſo that in a few years from the planting, they will afford noble trees for planting avenues, and other ſhady walks; and their trunks are perfectly ſtraight, growing nearly of the ſame ſize to a conſiderable height, there being the leaſt difference in the girt of this tree, for ſeveral yards upwards, of any ſort of tree whatſoever. The Hon. Paul Dudley, Eſq. in a letter to the Royal Society, mentions one of theſe trees, which he obſerved in New England, whoſe girt was nine yards, and held its bigneſs a great way up, which tree, when cut down, made twenty-two cords of wood. He alſo ſays, in the ſame letter, that he had propagated many of theſe trees by cutting off ſticks of five or ſix feet long, and ſetting them a foot deep into the ground in the ſpring of the year, when the ſeaſon was wet, and that they always thrive beſt in a moiſt ſoil.

[a] Hunter's Evelyn.

Both ſorts are propagated very eaſily by layers, in march every twig of them will take root, if they are but pegged down and covered with earth; theſe layers will be well rooted in one year, when they ſhould be cut off from the old trees or ſtools, and planted in a nurſery, where they may remain two or three years to get ſtrength, after which they may be tranſplanted where they are to remain, for the younger theſe trees are planted the better they will thrive. An experiment of this I made in 1731, when I planted four of theſe trees, in the ſame ſoil and ſituation, at about twenty feet diſtance from each other; one of which, viz. the Spaniſh Plane, whoſe ſtem was eight inches in girt; next to this, one of the Maple-leaved Plane-tree, whoſe girt was not three inches, but the latter is now much larger than the former, and gains more in one year than the other does in three; and the two others which were of a middle ſize, have grown in a mean proportion between them.

[In the winter ſcreen the ſeed-beds with pea-ſtraw, rotten tanner's bark, or ſome other light covering, that can eaſily be removed in mild weather. In the ſpring, before the ſeeds vegetate, rake the beds gently over with a ſhort-toothed rake, ſifting a little freſh rich mould on them, and in dry weather during ſummer let them be watered. The following autumn, the beds having been made quite clean, put a little more good mould about the plants; after which they will require no farther trouble, but keeping them clean, till they have had another ſeaſon's growth, when they may be removed into the nurſery in ſpring[b]: in rows one yard aſunder, and eighteen inches diſtance in the rows.—Though many of the ſeeds will come up the firſt ſpring; yet the general crop muſt not be expected till the ſecond.

Dr. Hunter recommends the cuttings to be taken from ſtrong young wood, and planted early in autumn, in a moiſt good mould. They are generally planted thick, and then removed into the nurſery: but if a large piece of moiſt ground be ready, the cuttings may be placed at ſuch a diſtance, as not to approach too near each other, before they are of a ſufficient ſize to plant where they are to remain, which would ſave the expenſe and trouble of a removal. The Eaſtern Plane will alſo grow from cuttings, but not ſo certainly[c].

Mr. Boutcher recommends cuttings of the Weſtern Plane, to be planted at the beginning of march, in ſhady borders, two feet row from row, and eight or ten inches in the rows: if they are torn aſunder at the joints with a knob of the old wood left, they will grow more readily. Theſe cuttings ſhould be a foot or fourteen inches long, and buried about eight inches deep. In two years they may be removed.

However propagated, after two years they may be planted out, in rows three feet and a half aſunder, and eighteen inches in the rows, there to remain, or be tranſplanted after three years to another nurſery, in rows ſix feet aſunder, and three feet in the rows, where they may ſtand ſix or ſeven years. The ſeaſon for tranſplanting the Planes is march, and they delight in a moiſt deep ground[d], eſpecially the American ſort. Where land is inclined to be dry, the two varieties are to be preferred[e].

PLATYLOBIUM. (*From* πλατυς *broad, and* λοβος, *a pod.*)

Smith in Linn. tranſ. 2. 350. *Nov. Holl. t.* 6.

Cheilococca. *Saliſb.*

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ.*

GENERIC CHARACTER.

Cal. bell-ſhaped, five-toothed: the three lower teeth acute and ſpreading; the two upper very large, obovate, obtuſe, cloſe preſſed to the ſtandard.

Cor. papilionaceous: *ſtandard* twice as long as the calyx, ſpreading, deeply emarginate: *wings* ſhorter than the ſtandard, ſemi-obovate, with a blunt incurved tooth on the upper ſide at their baſe: *keel* of two adhering petals, obtuſe, as long as the wings, with a tooth on

[b] Boutcher. [c] Hunter's Evelyn. [d] Boutcher. [e] Hunter.

each side of the base, embraced by the incurved teeth of the wings.

STAM. *Filaments* in one set, separated only on the upper side, and cloven nearly half their length; divisions equal and curved upwards. *Anthers* ten, nearly orbicular, equal, versatile.

PIST. *Germ* linear, very hairy. *Style* incurved, smooth. *Stigma* simple, sharp.

PER. *Legume* pedicelled, clothed with scattered hairs, somewhat scimeter-shaped, perfectly compressed, obtuse with a small point, one-celled, extending into a flat border along the upper edge, considerably beyond the insertion of the seeds.

SEEDS seven or eight, compressed, each on a curved white pedicel.

OBS. *This genus may be inserted near Crotalaria in the Linnean system.*

ESSENTIAL CHARACTER.

Cal. bell-shaped, five-cleft; the two upper segments very large and obtuse. *Legume* pedicelled, compressed, winged at the back.

SPECIES.

1. Platylobium formosum. *Orange Flat pea.*
Smith in Linn. trans. 2. 350. *nov. holl.* 17. *t.* 6.

DESCRIPTION, *&c.*

Stem shrubby, four feet high. Branches opposite, round, roughish, covered with leaves, and ornamented with numerous flowers. Leaves opposite, on very short hairy foot-stalks, cordate-ovate, entire, revolute, acute with a minute spine at the end, very veiny, rigid, of a beautiful green, glaucous beneath. Stipules in pairs, lanceolate, brown, membranous, striated, smooth. Flowers solitary, from the axils of the uppermost leaves, opposite, on short hairy peduncles. Bractes several, at the base of the peduncle, ovate, concave, hairy; and two at the top, immediately under the flower, somewhat longer. Calyx very hairy. Standard of the corolla orange-coloured, striated almost half way to the edge, with beautifully radiant crimson lines, from a pale-yellow spot at the base: wings deep yellow: keel whitish, tipped with a rich crimson. Pod an inch and half long, and half as broad.

Native of New South Wales, where it blooms all the year through [a]. Introduced about 1792.

PLECTRANTHUS. (*From πλεκτρον, a cock's spur, and ανθος, a flower, the corolla having a spur, which is singular in the order Gymnospermia of the class Didynamia, though common in the other order.* L'Herit.)

Lin. gen. Schreb. n. 987. *L'Herit. stirp.* 85. *t.* 41, 42. Germanica. *Lamarck. Juss. gen.* 116. 449.

Class. 14. 1. Didynamia Gymnospermia.

Nat. order of *Verticillatæ*. *Labiatæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, subcampanulate, short, bilabiate. *Upper lip* ovate, wider, ascending. *Lower lip* four-cleft, acute: the two lowest segments a little longer.

COR. monopetalous, ringent, resupine. *Tube* compressed, longer than the calyx. One lip turned upwards, wider, trifid; the middle segment larger, emarginate, the lateral ones small: the other lip turned down, narrower, entire, ovate, concave.

Nectary a spur or bump from the base of the tube of the corolla, produced upwards.

STAM. *Filaments* four, declined, awl-shaped, of which two are a little shorter. *Anthers* simple.

PIST. *Germ* four-parted. *Style* filiform, the length and situation of the stamens. *Stigma* bifid, acute.

PER. none; but the calyx contains the seeds at bottom.

SEEDS four, roundish.

ESSENTIAL CHARACTER.

Cal. upper segment larger. *Cor.* resupine: gibbous or spurred at the base. *Filam.* simple.

SPECIES.

1. Plectranthus fruticosus. *Shrubby Plectranthus.*
L'Herit. stirp. nov. 85. *t.* 41. *Ait. kew.* 2. 322.
Nectary spurred, racemes compound, peduncles three-parted, stem shrubby levigated.

[a] Smith in Linn. trans.

2. Plectranthus punctatus. *Dotted Plectranthus.*
L'Herit. stirp. nov. 87. *t.* 42. *Ait. kew.* 2. 322.
Ocymum punctatum. *Linn. suppl.* 275.
Nectary gibbous, flowers in spikes, stem herbaceous roughhaired.

3. Plectranthus galeatus. *Helmet-flowered Plectranthus.*
Vahl symb. 1. 43.
Nectary gibbous, pedicels branched, leaves cordate-ovate acuminate serrate.

4. Plectranthus Forskahlæi.
Vahl symb. 1. 44.
Ocymum hadiense. *Forsk. descr.* 109.
Nectary gibbous, racemes leafless, stem equal.

5. Plectranthus crassifolius. *Thick-leaved Plectranthus.*
Vahl symb. 1. 44.
Ocymum Zatarhendi. *Forsk. descr.* 109.
Nectary gibbous, racemes bracted, leaves ovate fleshy.

DESCRIPTIONS, *&c.*

1. This is a handsome fragrant plant, with the habit of a Nettle. Stems several, erect, very much branched, brachiate, pithy, ash-coloured. Branches opposite, spreading, obscurely marked with lines, the thickness of a reed, brittle: tender shoots four-cornered, pubescent, green. Leaves broad-ovate or shaped like a heart, only they are not emarginate but produced at the base, acute or acuminate, doubly serrate, with equal bluntish waved serratures; wrinkled, nerved and veined, with the nerves and veins prominent on the lower surface only; villose, appearing dotted underneath when viewed with a magnifying glass, spreading, fragrant, four or five inches long, and three or four wide. Petioles spreading, longer than half the leaf, having one groove above, pubescent, sometimes pale purple. Racemes terminating, erect, compound or three-parted, four-cornered, villose, from three to six inches in length. Peduncles opposite, horizontal, three-flowered, round, villose. Flowers pedicelled. Corollas blue, five lines in breadth. Bracte under the peduncles, spreading, pressed close, subsessile, ovate, acute, villose. Calyx villose, three lines wide. Seeds brown, fastened to a fleshy subrostrated body, at the bottom of the calyx, as to a receptacle.

Native of the Cape of Good Hope [a]. Found there by Masson. Introduced here in 1774. It flowers from june to september [b].

2. This is an annual plant, a foot high, with a disagreeable smell. Stems a few, branching only at the base, fleshy, round, jointed; the lower joints more gibbous, and sometimes rooting; below they are purple, with very dark purple spots. Leaves ovate, acute, toothed, nerved, very much wrinkled, villose, commonly spotted with brown in the disk, the spot having stiffish brown hairs scattered over it, spreading, reclining, from two to three inches long, from eighteen to twenty-four lines wide, stinking. Petioles short, channelled. Spikes solitary, terminating; and besides this, others short and solitary from the upper axils, erect, compact, bracted, hirsute, two inches long. Flowers on short pedicels, in a sort of whorl, aggregate under each bracte, two or three lines in length. Corollas very pale blue, marked with purple lines on the disk of the upper lip; on the lower more intensely dotted towards the tip. Seeds compressed, of an ash-bay-colour.

The glands which are scattered over the corolla, and especially over the calyx in this species, are not found in *P. fruticosus*. The calyx is not really shaped like that of the Ophrys in this, as it is in that. The nectary of this is a bag not a spur. The upper lip is manifestly trifid in *punctatum*; but in *fruticosum* instead of the lateral segments of the upper lip, there are two toothlets at the side of the throat. Lastly the anthers are ovate in *punctatum*, four-cornered in *fruticosum* [c].

Native of Africa; where it was found by James Bruce, Esq. Introduced here in 1775. It flowers from january to may [d]. Monf. L'Heritier says it flowers in autumn, and marks it as annual. In the Kew catalogue it is marked as biennial.

[a] L'Heriter. [b] Hort. kew. [c] L'Heritier. [d] Hort. kew.

3. Stem villose, grooved. Leaves petioled, broad-ovate, villose, especially the veins underneath. Peduncle terminating: pedicels opposite, branched. Bractes none. Corollas pubescent, with the lower lip galeated. It approaches to Ocimum scutellarioides of Linneus; but that has ovate-lanceolate leaves, smaller flowers, cordate bractes, and a pair of peduncles on each side.—Native of Java.

4. Stem hirsute, not dotted. Leaves ovate, approximating towards the tops of the branches, hairy, very blunt, grosly crenate, transverse at the base, quite entire. Petiole only half the length of the leaf, a little dilated at the base. Racemes half a foot long, erect, composed of whorls having from eight to ten flowers. Pedicels filiform. Fruiting calyxes grooved, gibbous at the base underneath: the lower segments bristle-shaped, ascending. Corolla four times as long as the calyx: tube bent back a little, above the calyx, gibbous upwards.

Native of the mountains of Arabia Felix and Madagascar. The specimens from the latter are more villose and soft.

5. This differs from the preceding in having fleshy leaves, and membranaceous ovate bractes.

Native of Arabia Felix. Probably several species of Ocimum may belong to this genus[a].

PROPAGATION AND CULTURE.

1. This perfects seeds, and may be increased by them; as also freely by cuttings. It must have the protection of the dry stove.

2. This also commonly ripens its seeds, and is propagated only by them. It may be preserved in the dry stove or greenhouse. The other two species have not yet been cultivated in Europe.

PLECTRONIA. (*From* Πλεκτρον.)
Lin. gen. Reich. n. 300. *Schreb. n.* 389. *Juss.* 382.
Class. 5. 1. Pentandria Monogynia.
Nat. order of *Contortæ? Rhamni*, Juss.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, turbinate, obsoletely five-toothed, closed with sinuses or five villose scales; permanent.
Cor. *Petals* five, lanceolate, sessile, inserted into the throat of the calyx.
Stam. *Filaments* five, very short. *Anthers* geminate, roundish, each covered by the calycine scales.
Pist. *Germ* inferior. *Style* filiform, shorter than the calyx. *Stigma* ovate.
Per. *Berry* oblong, two-celled.
Seeds solitary, oblong, compressed.

ESSENTIAL CHARACTER.

Pet. five inserted into the throat of the calyx. *Berry* two-seeded, inferior.

SPECIES.

1. Plectronia ventosa.
Lin. mant. 52. *Syst.* 242. *Reich.* 1. 564. *Willd.* 1152.
P. corymbosa. *Burm. prodr.* 6.
Rhamnus foliis subrotundo-acuminatis, fructu racemoso. *Burm. afr.* 257. *t.* 94.

DESCRIPTION, *&c.*

This is a tree with four-cornered branches. Leaves opposite, petioled, lanceolate-ovate, quite entire, even, longer than the internodes. Corymbs capillary, brachiate, shorter than the leaves.—Native of the Cape of Good Hope[b].

Pliant Mealy Tree. See *Viburnum*.

PLINIA. (*So named by Plumier, in memory of Caius Plinius Secundus, born at Verona under Tiberius; the celebrated author of a compilation of Natural History, under the title of* Historia Mundi.)
Lin. gen. n. 671. *Reich. n.* 676. *Schreb. n.* 851. *Plum.* 11. *Juss.* 342.
Class. 12. 1. Icosandria Monogynia.
Nat. order of *Rosaceæ*, Juss.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, five or four-parted: *segments* acute, flat, small.
Cor. five or four-petalled: *petals* ovate, concave.
Stam. *Filaments* numerous, capillary, the length of the corolla. *Anthers* small.
Pist. *Germ* superior, small. *Style* awl-shaped, longer than the stamens. *Stigma* simple.
Per. *Drupe* very large, globular, grooved.
Seed single, very large, globular, smooth.

ESSENTIAL CHARACTER.

Cal. five or four-parted. *Pet.* five or four. *Drupe* superior, grooved: (inferior in Pl. pedunculata.)

SPECIES.

1. Plinia crocea. *Saffron-fruited Plinia.*
Lin. syst. 464. *Reich.* 2. 490.
P. pinnata. *Lin. spec.* 735.
P. fructu croceo odorato. *Plum. gen.* 9. *ic.* 225.
Flowers five-petalled.
2. Plinia pedunculata. *Red-fruited Plinia.*
Lin. suppl. 253. *syst.* 464.
P. rubra. *Lin. syst. ed.* 13. *p.* 386. *mant.* 243. *Reich.* 2. 490.
Myrtus brasiliana. *Lin. spec.* 674.
Eugenia uniflora. *Lin. spec.* 673.
Ibipitanga. *Marcgr. bras.* 187.
Flowers four-petalled.

DESCRIPTIONS, *&c.*

1. This is a tree, with abruptly pinnate leaves: leaflets about twelve, ovate-lanceolate, quite entire. Flowers sessile, scattered over the older naked branches. Fruit eatable.—Native of America[c].

2. Leaves opposite, petioled, simple, even, like those of Myrtle, ovate. Flowers peduncled, the length of the leaves, subumbelled. Calycine leaflets four, ovate, concave, spreading, coloured, reflex. Petals four or eight, obovate, sessile, twice as long as the calyx. Filaments very many, capillary, the length of the petals, inserted into the receptacle: anthers roundish. Germ inferior, roundish, angular. Style filiform, the length of the stamens. Stigma simple. Berry roundish, the size of a Plum, with eight swellings, one-celled, umbilicated with a four-toothed calyx, very like those of the other species, red and sapid. Seed single, subglobular[d].

Native of Brasil. Cultivated here in 1759, by Mr. Miller. It flowers in january and february. It is commonly cultivated in Madeira and the West Indies[e].

This species is thrice repeated by Linneus, twice in the *Species Plantarum*, under the names of *Eugenia* and *Myrtus*; and again in the thirteenth edition of *Systema Vegetabilium* and *Mantissa Plantarum*, under the name of *Plinia rubra*. See *Eugenia* and *Myrtus* in this Dictionary.

PLOCAMA. (Πλοκαμος, *a lock of hair.*)
Ait. hort. kew. 3. 508. *Lin. gen. Schreb. n.* 1738. *p.* 797.
Class. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

Cal. *Perianth* one-leafed, very small, five-toothed, permanent.
Cor. one-petalled, bell-shaped, five-parted: *segments* oblong.
Stam. *Filaments* five, short, inserted into the tube. *Anthers* linear, from incumbent erect.
Pist. *Germ* inferior, globular. *Style* filiform-subclavate, longer than the stamens. *Stigma* simple, obtuse.
Per. *Berry* subglobular, three-celled.
Seeds solitary, linear-oblong.

ESSENTIAL CHARACTER.

Cal. five-toothed, superior. *Cor.* bell-shaped, five-cleft. *Berry* three-celled: cells one-seeded.

SPECIES.

1. Plocama pendula. *Pendulous Plocama.*
Ait. kew. 1. 292. *Lin. spec. ed. Willd.* 1210.

Native of the Canary Islands; where it was found by Mr. Francis Masson. It was introduced in 1779[f].

Ploughman's Spikenard. See *Baccharis* and *Conyza*.

PLUKENETIA. (*So named by Plumier from Leonard Plukenet, M. D. He published* Phytographia, 1691 *to* 1696, 4°. Almagestum Botanicum, 1696, 4°. Alma-

[a] Vahl. [b] Linn. mant. [c] Linn. spec. [d] Linn. suppl. [e] Hort. kew. [f] Idem.

gesti Botanici Mantissa, 1700, 4°. Amaltheum Botanicum, 1705, 4°. *He was born in* 1642.)

Lin. gen. n. 1080. *Reich. n.* 1178. *Schreb. n.* 1459. *Plum.* 13. *Juss.* 392.

Class. 21. 8. Monoecia Monadelphia.

Nat. order of *Tricoccæ*. *Euphorbiæ*, Juss.

GENERIC CHARACTER.

* *Male Flower.*

CAL. none, unless the corolla be regarded as such.

COR. *Petals* four, ovate, spreading.

STAM. *Filaments* eight, very short, united. *Anthers* erect, simple.

Nectary, four glands, at the base of the stamens, furnished with a beard longer than the stamens.

* *Female Flower* on the same plant with the Males, larger.

CAL. four-leaved, small.

COR. as in the males.

PIST. *Germ* quadrangular. *Style* filiform, very long, declined. *Stigma* peltate, four-cleft; *segments* obtuse, flat, *each* marked with a dot in the middle.

PER. *Capsule* depressed, quadrangular, keeled at the angles, in the middle of which is a thin wart, four-celled: cells two-valved.

SEEDS solitary, roundish, compressed, a little acuminate at one end.

ESSENTIAL CHARACTER.

Cal. none. *Pet.* four.

MALE. *Stam.* eight. *Nect.* four, bearded.

FEM. *Style* very long, with a peltate, four-lobed stigma. *Capf.* four-grained.

SPECIES.

1. Plukenetia volubilis.

Lin. spec. 1423. *Syst.* 862. *Reich.* 4. 181. *Suppl.* 421. *Plum. gen.* 47. *ic.* 226. *Rumph. amb.* 1. 194. *t.* 79. *f.* 2.

DESCRIPTION, *&c.*

Stem twining. Leaves like those of Ivy, cordate, serrate, acute, on loose petioles. Racemes composed of numerous male flowers, and a few female flowers at bottom. Fruit resembling that of *Euonymus margaritifera*, figured by Plukenet, t. 176. f. 4. but four-grained, white above with two-warted angles.—Native of both Indies[1]. Habit of *Tamus* or *Bryonia*[a].

PLUM. See *Prunus*.

———, Maiden. See *Camoeladia*.]

PLUMBAGO. (Macula *plumbea* imposita. *Lin.* A nigro colore quem imprimit. *Allion.* Quia manus volam macula *plumbea* radix inficit. A *plumbeo* foliorum colore. *Raius.*)

Lin. gen. n. 213. *Reich. n.* 227. *Schreb. n.* 281. *Tournef. t.* 58. *Juss.* 92. *Gærtn. t.* 50.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Plumbagines*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ovate-oblong, tubular, five-cornered, rugged, with a five-toothed mouth, permanent.

COR. one-petalled, funnel-form: *tube* cylindrical, narrower at top, longer than the calyx: *border* five-cleft, from erect-spreading, with ovate segments.

Nectary of five very small acuminate valves in the bottom of the corolla, including the germ.

STAM. *Filaments* five, awl-shaped, free within the tube of the corolla, placed on the valves of the nectary. *Anthers* small, oblong, versatile.

PIST. *Germ* ovate, very small. *Style* simple, the length of the tube. *Stigma* five-cleft, slender.

PER. *Capsule* oblong, five-cornered, terminated by the permanent style, one-celled, five-valved, clothed with the calyx.

SEED single, oblong, fastened to a thread, pendulous.

ESSENTIAL CHARACTER.

Cor. funnel-form. *Stam.* inserted into scales including the base of the corolla. *Stigma* five-cleft. *Seed* one, oblong, tunicated.

SPECIES.

1. Plumbago europæa. *European Leadwort.*

Lin. spec. 215. *Syst.* 199. *Reich.* 1. 429. *Willd.* 837. *hort. cliff.* 53. *mat. med.* 59. *mant.* 335. *Saxv. monsp.* 63. *Ger. prov.* 339. *Villars dauph.* 2. 447. *Allion. pedem. n.* 315. *D'Alsso arag. n.* 171. *Desfont. atlant.* 171. *Sabb. hort.* 2. *t.* 39. 40. *Pluenet, ic.* 95. *Regnault, bot. ic. Lamarck, illustr. n.* 2141. *t.* 105.

Plumbago Plinii. *Ger.* 1069. *emac.* 1254. *Raii hist.* 394. *Mor. hist.* 3. 599. *s.* 15. *t.* 1. *f.* 2.

P. quorundam. *Cisalp. hist.* 2. 124. *Tabern. ic.* 858. *Tournef. inst.* 141. *Garid.* 368.

Dentaria vel Dentellaria Roudeletii. *Lob. adv.* 136. *Bauh. hist.*

Lepidium Dentellaria dictum. *Bauh. pin.* 97.

L. monspeliacum Dent. dictum. *Park. theat.* 855. 2.

Tripolium Dioscoridis. *Column. ecphr.* 1. 161.

Leaves embracing lanceolate rugged.

[2. Plumbago lapathifolia. *Dock-leaved Leadwort. Lin. spec. ed. Willd.* 837.

P. orientalis lapathi folio, flore minore albido. *Tournef. cor.* 7.

Leaves embracing lanceolate even, stem divaricating.

3. Plumbago capensis. *Cape Leadwort.*

Lin. spec. ed. Willd. 837. *Toxicb. prodr.* 33.

Leaves petioled oblong entire glaucous underneath, stem erect.]

4. Plumbago zeylanica. *Ceylon Leadwort.*

Lin. spec. 215. *Reich.* 1. 430. *Willd.* 837. *hort. cliff.* 53. *upf.* 43. *fl. zeyl. n.* 73. *Kniph. cent.* 2. *n.* 60.

Lychnis indica, &c. *Comm. hort.* 2. 169. *t.* 85.

Tumba codiveli. *Rheede mal.* 10. 15. *t.* 8. *Raii suppl.* 550.

Leaves petioled ovate smooth, stem filiform.

[5. Plumbago rosea. *Rose-coloured Leadwort.*

Lin. spec. 215. *Reich.* 1. 430. *Willd.* 838. *Curt. magaz.* 230. *Gærtn. fruit.* 1. 234.

P. zeylanica, folio splendente ocymastri, flore rubro. *Burm. zeyl.* 195.

Radix vesicatoria. *Rumph. amb.* 5. 453. *t.* 168.

Schetti codiveli. *Rheed. mal.* 10. 17. *t.* 9. *Raii suppl.* 550.

Leaves petioled ovate smooth somewhat toothletted, stem with gibbous joints.

6. Plumbago scandens. *Climbing Leadwort.*

Lin. spec. 215. *Syst.* 199. *Reich.* 1. 430. *Willd.* 838. *Swartz obs.* 61. *Jacqu. amer. pict.* 18. *t.* 23. *Brown. jam.* 158.

P. americana viticulis longioribus sempervirentibus. *Mor. hist.* 3. 599.

Dentellaria lychnoides sylvatica scandens flore albo. *Sloan. jam.* 1. 211. *t.* 133. *f.* 1.

Caapomonga. *Marcgr. bras.* 28. *Pis. bras.* 200.

Leaves petioled ovate smooth, stem flexuose-scandent.

7. Plumbago auriculata. *Eared Leadwort.*

Lin. spec. ed. Willd. 838. *Lamarck encyc.* 2. 267.

Leaves ovate-oblong petioled scaly-dotted underneath, petioles eared embracing.]

DESCRIPTIONS, *&c.*

1. Root perennial, striking deep into the ground. Stalks many, slender, three feet and a half high, and channelled. Leaves three inches long and two broad, smooth, entire, of a grayish colour. The upper part of the stalks send out many slender side branches, which have small leaves on them. These, and also the principal stalks are terminated by tufts of either blue or white flowers, which are small, and succeeded by rough hairy seeds.

[The calyx has five tubercles at the base on the outside, besides the petioled glands[a].

Height, according to Villars, one foot. Stems hard, numerous, angular. Leaves oblong, very entire, a little rugged, of a blackish green. The calyx has glands on the angular lines that run along it longitudinally. Corolla of a dusky purplish colour.

Stem erect, smooth, angular, with panicled branches. Leaves alternate, smooth, lead-coloured, toothletted at the edge or quite entire, having two appendicles at the base: the lower stem-leaves blunt; the upper branch-leaves sharp. Flowers aggregate, terminating. Calyx round, five-parted: segments linear, approximating; with short hairs, glandular at top, disposed

[1] Linn. spec.

[a] Jacqu.

[a] Linn. syst.

in a double row. Corolla blue-violet, five-petalled; with linear claws, converging at the edge into a tube, twice as long as the calyx; border obovate, quite entire. Stamens shorter than the claws: filaments capillary. Style pubescent at bottom: stigmas five, villose-glandular. Germ superior[a].

Native of the South of Europe, and the kingdom of Tunis in Africa.—Cultivated in 1597, by Gerarde[b].] It seldom flowers in England till towards the end of october, and unless the autumn proves warm, does not flower at all; and never produces ripe seeds.

It is called Dentellaria in Latin, Dentellaire in French, and Toothwort in English, from its property of curing the tooth-ach; being of a hot caustic nature, like Pellitory of Spain.

[Two ounces of the plant boiled in four ounces of Olive oil is recommended to cure the itch; the sediment is tied up in a bag of linen, and the patient is rubbed with it, moistening the bag from time to time with the oil[c]. Allioni says that the leaves are too burning and inflammatory, and therefore prefers an infusion of the root, which he used with success himself. The root bruised is laid on the wrist, to heal the tooth-ach; it leaves a dark lead-coloured mark on the place, very difficult to be wiped off, whence the name of *Plumbago*, and if it remains on long enough, it burns the skin and leaves an ulcer. Some put it behind the ear, when it acts as a blister[d].

The Arabs make an ointment, by rubbing the leaves with salt and oil, for the itch, tetters, &c.[e]

2. This resembles the preceding, but is manifestly different; the stem being higher, the branches longer and divaricated, the leaves much larger and smooth, and the flowers only half the size.—Native of Iberia[f].

3. Native of the Cape of Good Hope[g].]

4. This is a perennial plant, with a strong fibrous root, from which arise many slender stalks, growing near four feet high. Leaves about three inches long, and an inch and half broad near their base, ending in acute points; they are alternate, and on short foot-stalks. The upper part of the stalks divides into small branches, having smaller leaves on them, and terminating in spikes of flowers. Seeds covered with the prickly calyx. The upper part of the stalks, and the calyx of the flowers are very glutinous, sticking to the fingers, and entangling small flies that settle on them.

[Native of the East Indies and of the Society Isles. Cultivated in 1731, by Mr. Miller. It flowers from april to september[h].

5. This is a shrubby plant, which frequently grows to the height of four or five feet, and is perpetually putting forth flowering spikes; these continue a long time, and hence, with proper management, it may be kept in flower during most of the year. The parts of fructification, whether we regard their colour or structure, are highly deserving of notice[i].

The calyx has capitate glutinous hairs scattered over it. The filaments are dilated at the base and arched. Capsule superior, clothed with the permanent calyx, ovate-oblong, ending in the subulate-setaceous style, obscurely five-cornered. Seed oblong, acuminate above, of a dark blood-red or ferruginous colour, suspended by a filiform umbilical chord, springing from the base of the capsule[k].

Native of the East Indies. Introduced into this country in 1777, by the late John Fothergill, M. D.[l]

6. Stem suffrutescent, scandent, sometimes decumbent, loose, flexuose, branched, round, striated, smooth. Leaves alternate, ovate-lanceolate, acuminate, nerved, spreading, entire, smooth on both sides: two smaller leaflets at the base of the middle, and two above it. Petioles very short, compressed, channelled, half embracing, membranaceous at the edge, with a red spot at the base underneath. Flowers terminating, subpanicled, commonly in spikes, sessile, scattered, approximating. Leaflets sessile under the flowers. Calyx inferior, bellying in the middle and towards the base, five-grooved, with glanduliferous hairs. Border of the corolla five-parted: parts roundish, emarginate, with a very short point in the middle. Nectaries roundish, yellow, round the germ, inserted into the bottom of the calyx. Filaments thickened, approximating, awl-shaped. Anthers placed on the top of the filaments, blue. Style the length of the stamens. Seed coated, as it were included in a capsule, and covered with the permanent calyx.

Native of South America, and Jamaica, in dry hedges[m].

The calyx sent by Jacquin proves his plant to be a species distinct from this[n].

Lamarck distinguishes this from *P. zeylanica*, by the segments of the corolla not being mucronate; whereas Swartz says that they have a very short point in the middle[o].

It was introduced here in 1778, by Henry De Ponthieu, Esq. and flowers in july and august[p].

7. Native of the East Indies.]

PROPAGATION AND CULTURE.

1. The stalks decay in the winter, and new ones come up the following spring. It may be increased by parting the roots, which send out heads in plenty. These may be divided at any time when the weather is mild, from the time the stalks decay, till the roots begin to shoot in the spring. It should have a light soil and a warm situation, otherwise it will not flower here. The roots should be allowed room to spread; the stalks require support; and if the plants are kept clean from weeds, and the ground is dug between them every autumn, that is all the culture they require.

4. This is propagated by seeds, sown on a good hot-bed in the spring. The plants will come up in five or six weeks. When these are fit to remove, plant each in a separate small pot filled with light loamy earth, and plunge the pots into a hot-bed of tan, observing to screen them from the sun till they have taken new root. In summer admit a large share of fresh air to them in warm weather, and water them moderately every other day. In winter keep them in a moderate warmth, and water them more sparingly.

[5. Increase this by cuttings, which strike freely. It is one of the most ornamental plants which we keep in our stoves[q].]

PLUMERIA. (*So named by Tournefort, in honour of Charles Plumier, of Marseilles, a Franciscan, traveller into South America, and author of several excellent works: as* Plantæ Americanæ, 1693, *and by Burmann in* 1755. Genera, 1703. Fougeres Americaines, 1705, &c.)

Lin. gen. n. 298. *Reich. n.* 325. *Schreb. n.* 422. *Tournef. t.* 439. *Juss.* 145.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Contortæ*. *Apocineæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, blunt, very small.

COR. one-petalled, funnel-form: *tube* long, widening gradually: *border* five-parted, from erect spreading; *segments* ovate-oblong, obliquе.

STAM. *Filaments* five, awl-shaped, from the middle of the tube. *Anthers* converging.

PIST. *Germ* oblong, bifid. *Styles* scarcely any. *Stigma* double, acuminate.

PER. *Follicles* two, long, acuminate, veatricose, bent downwards, nodding, one-celled, one-valved.

SEEDS numerous, oblong, inserted into a larger ovate membrane at the base, imbricate.

ESSENTIAL CHARACTER.

Contorted. *Follicles* two, reflex. *Seeds* inserted into their proper membrane.

SPECIES.

1. Plumeria rubra. *Red Plumeria.*

Lin. spec. 306. *syst.* 254. *Reich.* 1. 598. *Willd.* 1242. *hort. cliff.* 76. *Jacqu. amer.* 35. *pict.* 23. *Brown. jam.* 181. *n.* 2. *Curt. magaz.* 279.

[a] Desfontaines. [b] Hort. kew. [c] Villars. [d] Allioni. [e] Desfontaines. [f] Willdenow. [g] Thumb. [h] Hort. kew. [i] Cort. magaz. [k] Gærtner. [l] Hort. kew. [m] Swartz. [n] Linn. [o] Willdenow. [p] Hort. kew. [q] Curtis.

P. flore roſeo odoratiſſimo. *Tournef. inſt.* 659. *Cateſb. car.* 2. *t.* 92. *Ehret. pict. t.* 20. *Trew. Ehret. t.* 41.

Nerium arboreum, folio maximo obtuſiore, flore incarnato. *Sloan. jam.* 2. 61. *t.* 185. *f.* 1. & *t.* 186. *f.* 1. *Pluk. phyt. t.* 207. *f.* 2. Swartz.

Jaſminum indicum. *Mer. ſurin. t.* 8.

Clematis arborea americana, &c. *Pluk. mant.* 50. *alm.* 109. *t.* 207. *f.* 2.

Leaves ovate-oblong, petioles biglandular.

2. Plumeria alba. *White Plumeria.*

Lin. ſpec. 306. *ſyſt.* 254. *Reich.* 1. 598. *Willd.* 1242. *Jacqu. amer.* 36. *t.* 174. *f.* 12. *pict.* 23. *t.* 38. *Plum. ſpec.* 20. *ic.* 231. *Comm. hort.* 2. 47. *t.* 24.

Nerium arboreum altiſſimum, folio anguſto, flore albo. *Sloan. jam.* 2. 62. *Raii dendr.* 114. *Herm. parad.* 49.

Leaves lanceolate revolute, peduncles tuberous above.

3. Plumeria obtuſa. *Blunt-leaved Plumeria.*

Lin. ſpec. 307. *Reich.* 1. 599. *Willd.* 1243. *Laur. cochinch.* 117.

P. nivea. *Mill. dict. n.* 4.

P. flore niveo, foliis brevioribus obtuſis. *Cateſb. car.* 2. *t.* 93. *Plum. ic.* 232.

Flos convolutus. *Rumph. amb.* 4. 85. *t.* 38? *Burm. ind.* 68.

Leaves lanceolate petioled blunt.

[4. Plumeria pudica. *Cloſe-flowered Plumeria.*

Lin. ſyſt. 254. *Reich.* 1. 599. *Willd.* 1243. *Jacqu. amer.* 37. *pict.* 24. *t.* 39.

Border of the corolla cloſed.]

DESCRIPTIONS, *&c.*

1. Red Plumeria, called Red Jaſmine in Jamaica, riſes to the height of eighteen or twenty feet. The ſtalks are covered with a dark green bark, having marks where the leaves are fallen off; they are ſucculent, abound with a milky juice, and within are ſomewhat woody. Towards the top they put out a few thick ſucculent branches, with leaves at their ends of a light-green colour, full of milky juice, having a large midrib and many tranſverſe veins. At the ends of the branches alſo come out the flowers in cluſters; ſhaped like thoſe of the Oleander or Roſe-Bay, of a pale red colour, and having an agreeable odour.

[The flowers are ſo ſweet as well as beautiful, that the women in South America adorn their hair with them, and put them among linen to ſcent it, as we do Lavender [a].

They are produced in England in july and auguſt; and the whole plant loſes its foliage from the middle of winter till the beginning of may [b].

According to Linneus it is a native of Surinam. In the Kew catalogue, and by Mr. Curtis, it is ſet down as a native of Jamaica. Browne does not give it as indigeneus of that iſland.] Miller ſays it grows naturally in the Spaniſh Weſt Indies, where it is cultivated in the gardens for ornament. [Jacquin confirms this, ſaying that it ſeems to have been tranſported into the Caribbee iſlands from the American continent. The French there call it *Frangipanier rouge.* It was cultivated in 1690, in the Royal garden at Hampton-court [c].]

Mr. Miller has a variety of this, which he calls *Plumeria incarnata,* (n. 2.) He received it from the iſland of St. Chriſtopher, by the name of Japan-tree, with an account that it had then been lately introduced from the Spaniſh Weſt Indies. The ſtalks do not riſe ſo high as the preceding; the leaves are of a thicker conſiſtence, and the veins larger; the flowers are of a paler colour, and in much larger cluſters; it being common to have upwards of twenty open in one bunch, with a number to ſucceed theſe as they decay; ſo that the cluſters continue in beauty upwards of two months, during which time they make a moſt beautiful appearance in the ſtove, and have a very agreeable odour.

2. [This tree has the habit of Red Plumeria, but is not much branched, and rarely exceeds fifteen feet in height; it abounds like that in a milky juice. The flowers are white with a yellowiſh eye, and diffuſe a very ſweet odour to a conſiderable diſtance [a]: Linneus ſays, it is ambroſiac, and ſo ſtrong as to excite the head-ach; but that all powerfully ſweet ſmells will do in ſome conſtitutions, particularly in a hot day or a warm climate.

Linneus adds, that the flowers are in ſpikes, and that the leaves are rolled back on the ſides.]

Mr. Miller remarks, that this is not near ſo beautiful as the former; the flowers being ſmaller, produced in leſs bunches, and of ſhorter duration; but that for the beauty of the ſtem and leaves it deſerves a place in every curious collection. It grows plentifully at Campeachy, whence the ſeeds were ſent by Dr. Houſtoun, who alſo obſerved ſome plants of it at Jamaica. [Browne conſiders it as a native of that iſland; and Jacquin of Martinico, where the French call it *Frangipanier blanc.*

It was introduced by William Houſtoun, M. D. and cultivated by Mr. Miller before 1733 [b].]

3. This produces ſmall white flowers reſembling thoſe of the ſecond. [The leaves are oval-lanceolate; and the peduncles branched [a].

Loureiro deſcribes it as a thick tree, exceeding the middle ſize, with an aſh-coloured, ſmooth, milky bark, a juicy brittle wood, and ſpreading, thick, twiſted branches. Leaves quite entire, large, flat, ſmooth, ſcattered, with many tranſverſe ribs. Flowers terminating, in compound ſpreading upright racemes. Corollas odorous, white, mixed on the outſide with red, on the inſide with yellow. Calyx tubular, ſhort, deciduous, ſlightly five-cleft; ſegments rounded, erect. Corolla inferior; tube ſmall, curved. Filaments very ſhort, inſerted above the baſe of the tube: anthers oblong, erect. Style none. Stigmas two, conical. Seeds biggiſh, ſcale-form, ending in a membranaceous baſe. Linneus attributes blunt leaves to this tree; but Rumphius and Loureiro met with them always acute. Probably two different ſpecies have been confounded.]

Miller ſays his *Pl. nivea* was diſcovered by Dr. Houſtoun, growing in great plenty near Carthagena in the Spaniſh Weſt Indies, whence he ſent the ſeeds to England.

[Plumier found it in South America, and Cateſby in Carolina. According to the Kew catalogue, it is a native of the Weſt Indies, and was introduced in 1783, by John Greg, Eſq. If ſo, *P. obtuſa* is ſuppoſed to be different from Miller's *nivea.* If Rumphius's *Flos convolutus,* and Loureiro's *P. obtuſa* be the ſame with Linneus's *P. obtuſa,* it is alſo a native of Amboyna, China and Cochinchina, where it is alſo cultivated on account of the beauty and ſweet ſmell of the flowers.

4. This is an upright milky ſhrub, five feet in height, of the ſame habit with the others. Leaves oblong, flat, veined. Flowers numerous, yelloviſh, the border continuing erect and ſhut, even after they drop; being rolled up like the flowers of Hibiſcus or Achania Malvaviſcus: they ſucceed each other continually for two months together; and have an odour much more agreeable than that of the preceding ſpecies, or even of any other known flower. It is highly eſteemed at Curaçao, and is there called *Donzelle* from the property of the flower mentioned above. They cultivate it there in the gardens; but it is not known from what part of South America it was introduced [a].]

PROPAGATION AND CULTURE.

All theſe plants may be propagated by ſeeds procured from the countries where they grow. Sow them in pots filled with light earth; plunge them into a tan-pit, and when the plants are two inches high, tranſplant them ſeparately into ſmall pots filled with light ſandy earth; plunge them into the hot-bed again, ſhading them in the middle of the day, until they have taken root: they muſt not have much water, for being very ſucculent, much moiſture will cauſe them to rot. In hot weather the plants ſhould have a large ſhare of freſh air admitted to them, by raiſing the

[a] Jacquin. [b] Curtis. [c] Hort. kew.

[a] Jacquin. [b] Hort. kew. [a] Linn. [a] Jacquin.

glaſſes of the hot-bed every day, in proportion to the warmth of the ſeaſon, to prevent their drawing up weak. Towards michaelmas, when the nights begin to be cold, the plants ſhould be removed into the ſtove, and plunged into the bark-bed, where they muſt remain during the winter. As theſe plants all caſt their leaves in the middle of winter, and continue deſtitute of them till about the beginning of may, during that time, they ſhould be watered very ſparingly, becauſe they are in more danger of rotting, while they are in a leſs active ſtate, by too much moiſture, than when they are furniſhed with leaves, through which the moiſture is more freely perſpired.

All theſe ſorts are too tender to thrive in the open air of this country in the ſummer ſeaſon, therefore ſhould be conſtantly preſerved in the ſtove, where, in warm weather, they muſt have a large ſhare of free air, but in cold weather they muſt be kept very warm. While they are young, it will be proper to continue them in the bark-bed; but when they have obtained ſtrength, they may be placed in a dry ſtove, where they will thrive well, provided they are kept in a moderate temperature of heat, and have not too much water.

Theſe plants may alſo be propagated by cuttings, which ſhould be taken from the old plants two months before they are planted, during which time they ſhould be laid on the flues in the ſtove, that the part which joined to the old plant may be healed over before they are planted, otherwiſe they will rot. Theſe cuttings ſhould be planted in ſmall pots filled with light ſandy earth, and plunged into a moderate hot-bed of tanner's bark, obſerving to ſhade them in the heat of the day from the ſun, and refreſh them once in a week or ten days with water, but it muſt be given to them ſparingly each time. If the cuttings ſucceed, they will have taken root in about two months, when they ſhould have a larger ſhare of air to harden them by degrees to bear the ſun and air, and afterwards may be treated as the old plants.

The milky juice of theſe plants is very cauſtic, and reckoned poiſonous. In cutting off any of the branches of the plants, if the knife be not immediately cleaned, the juice will corrode it, and turn the blade almoſt black in a very little time, ſo as not to be cleaned off again; and if dropped on linen will cauſe it to waſh in holes, equal to aquafortis.

[PNEUMONANTHE. See *Gentiana*.

POA. (Ποα, *an herb: as where Theophraſtus* (l. 1. c. 5.) *deviſes plants into trees, ſhrubs, underſhrubs, and herbs: a plant in general,* ποα ἐλυμος ἡ: *graſs, as where it is joined with wheat and barley,* (l. 1. c. 9.)

Lin. gen. n. 83. *Reich. n.* 89. *Schreb. n.* 114. *Inſt.* 32.

Claſſ. 3. 2. Triandria Digynia.

Nat. order of *Gramina, Graminea* or *Graſſes*.

GENERIC CHARACTER.

CAL. *Glume* many-flowered, two-valved, awnleſs, collecting the flowers into a diſtich ovate-oblong ſpikelet: *valves* ovate acuminate.

COR. two-valved: *valves* ovate, ſharpiſh, concave, compreſſed, a little longer than the calyx, with a ſcarioſe margin.

Nectary two-leaved: *leaflets* acute or jagged, gibbous at the baſe.

STAM. *Filaments* three, capillary. *Anthers* forked.

PIST. *Germ* roundiſh. *Styles* two, reflex, villoſe. *Stigmas* ſimilar.

PER. none. *Corolla* cleaves to the ſeed and does not open.

SEED ſingle, oblong, acuminate, compreſſed on both ſides, covered.

OBS. *The flowers of* Poa Eragroſtis *have not a ſcarioſe margin. Some ſpecies have a two-flowered, others a three or four-flowered calyx.*

ESSENTIAL CHARACTER.

Cal. two-valved, many-flowered. *Spikelet* ovate: valves ſcarioſe at the edge and ſharpiſh.

SPECIES.

1. Poa aquatica. *Water or Reed Meadow-graſs.*
Lin. ſpec. 98. *Syſt.* 113. *Reich.* 1. 184. *Willd.* 385. *fl. ſuec. n.* 78. *hort. cliff.* 494. *Huſſ. angl.* 38. *Wither. arr. ed.* 3. 140. *Smith angl.* 95. *Relh. cant. n.* 65. *Sibth. oxon. n.* 127. *Abbot, beſſ.* 17. *Curt. lond.* 5. *t.* 12. 330. *Holl. helv. n.* 1454. *Scop. carn. n.* 105. *Leers herborn. n.* 65. *t.* 5. *f.* 5. *Pollich pal. n.* 86. *Hoffm. germ.* 29. *Roth. germ.* 1. 41. 2. 111. *Neck. gallob.* 72. *Gouel. ſib.* 1. 105. *Krock. ſilef. n.* 133. *Villars dauph.* 2. 124. *Fl. dan. t.* 920.

Gramen paluſtre paniculatum altiſſimum. *Baub. pin.* 3. *theat.* 38. *Scheuch. gram.* 191. *t.* 4. *f.* 1.

Gr. aquaticum panic. latifolium. *Baub. pin.* 3. *Mor. hiſt.* 3. 201. *ſ.* 8. *t.* 6. *f.* 25. *Tournef. inſt.* 523.

Gr. aquat. majus. *Baub. hiſt.* 2. 462. *Ger. emac.* 6. 1. *Raii ſyn.* 411.

Gr. arundinaceum aquat. *Park. theat.* 1274. 2. *Raii hiſt.* 1280.

Gr. phalaroides paluſtre, arundinaceum, rad. ampliſſima. *Monti ic.* 38.

Panicle erect branched looſe, ſpikelets ſix-flowered linear, floſcets blunt ſeven-nerved

2. Poa alpina. *Alpine Meadow-graſs.*
Lin. ſpec. 99. *Syſt.* 113. *Reich.* 1. 185. *Willd.* 386. *fl. ſuec, n.* 79. *Wither. arr. ed.* 3. 142. *Smith angl.* 100. *Lightf. ſcot.* 96. *Holl. helv. n.* 1456. *Krock. ſilef. n.* 135. *Villars dauph.* 2. 124.

Gramen paniculatum alpinum majus, panicula ſpecioſa variegata. *Scheuch. gram.* 186. *prodr.* 20. *t.* 3.

β. vivipara. *Lin. ſpec.* 99. *Huſſ. angl.* 39. *Wither.* 142. *var.* 2. *Smith* 100. β. *Scheuch. gram.* 212. *t.* 4. *f.* 14. *itin.* 1. 4. 2. *Fl. dan.* 807.

Panicle diffuſed, ſpikelets four-flowered cordate, glumes ovate ſubfalcate free, lower ſtipules very ſhort.

3. Poa laxa. *Looſe Meadow-graſs.*
Lin. ſpec. ed. Willd. 386. *Haenke ſudet.* 118. *Holl. helv. n.* 1457.

Gramen alpinum paniculatum minus panicula ſpadiceo-viridi elegans. *Scheuch. gram.* 163. *app. t.* 4.

Gr. panic. alp. parvum, panic. ſpicata, &c. *Scheuch. itin.* 6. 457. *t.* 6. *f.* 16.

Panicle contracted ſubracemed, ſpikelets three-flowered pubeſcent at the baſe and on the back.

4. Poa biflora. *Two-flowered Meadow-graſs.*
Lin. ſpec. ed. Willd. 386. *Retz. obſ.* 5. 19.

Panicle denſe, calyxes ſubbiflorous ſmooth, culm aſcending.

5. Poa hirta. *Rough-haired Meadow-graſs.*
Lin. ſyſt. 113. *Willd.* 387. *Thunb. jap.* 49.

Panicle ſpreading rod-like, calyxes ſubtriflorous angular, ſheaths dotted-ciliate.

6. Poa trivialis. *Roughiſh Meadow-graſs.*
Lin. ſpec. 99. *Reich.* 1. 185. *Willd.* 387. *fl. ſuec. n.* 80. *Huſſ. angl.* 39. *Wither. arr. ed.* 3. 143. *Smith angl.* 103. *Curt. lond.* 2. *t.* 6. *prodr. obſ.* 15. *t.* 4. *Relh. cant. n.* 63. *Sibth. oxon. n.* 128. *Neck. gallob.* 55. *Pollich pal. n.* 88. *Scop. carn. ed.* 1. 193. *n.* 2. *ed.* 2. *n.* 99. *Krock. ſilef. n.* 137. *Villars dauph.* 2. 125.

P. pratenſis. *Leyſſ. halens. n.* 91. *Roth. germ.* 1. 42. 2. 113.

P. dubia. *Leers herborn. n.* 69. *t.* 6. *f.* 5.

P. paluſtris. *Hoffm.* 29.

P. ſcabra. *Ehrh. gram.* 72. *Hoffm. germ.* 29.

Gramen pratenſe paniculatum medium. *Baub. pin.* 2. *theat.* 30. *Raii hiſt.* 1285. 6. *ſyn.* 409. *Scheuch. gram.* 180.

β. Poa ſetacea. *Huſſ. angl. ed.* 1. 34.

Panicle diffuſed, ſpikelets three-flowered, glumes lanceolate five-nerved, connected by a villus at the baſe, ſtipule elongated.

7. Poa anguſtifolia. *Narrow-leaved Meadow-graſs.*
Lin. ſpec. 99. *Reich.* 1. 186. *Willd.* 387. *fl. ſuec. n.* 81. *lapp. n.* 52. *Pollich pal. n.* 89. *Leers herborn. n.* 67. *t.* 6. *f.* 3. *Hoffm. germ.* 29. *Roth. germ.* 1. 41. 2. 112. *Leyſſ. halenſ. n.* 90. *Holl. helv. n.* 1460. *Krock. ſilef. n.* 140. *Villars dauph.* 2. 125.

Gramen pratenſe paniculatum majus, anguſtiore folio. *Baub. pin.* 2. *prodr.* 5. *Scheuch. gram.* 178. *Raii hiſt.* 1285. *n.* 5.

β. Poa trivialis. *Leers herborn. n.* 66. *t.* 6. *f.* 2. *Hoffm. germ.* 29. *Roth. germ.* 1. 41. 2. 112.

Paniele diffuſed, ſpikelets four-flowered pubeſcent, culm ereſt round.

8. Poa Gerardi. *Paniced Meadow-graſs.*
Ait. kew. 1. 99. *Ger. prov.* 91. *n.* 11. *t.* 2. *f.* 1. *Allion. pedem. n.* 2201.

Paniele ereſt, ſpikelets three-flowered ſmooth, corollas acuminate twice as long as the calyx.

9. Poa pratenſis. *Smooth-ſtalked or Great Meadow-graſs.*
Lin. ſpec. 99. *Reich.* 1. 186. *Willd.* 388. *fl. ſuec. n.* 82. *lapp. u.* 51. *hort. cliff.* 27. *Hudſ. angl.* 39. *Wither. arr. ed.* 3. 141. *Curt. lond.* 2. *t.* 5. *Relh. cant. n.* 64. *Sibth. oxon. n.* 129. *Stilling.* 6. *Anderſon,* 2. 231. *t.* 7. *Hall. helv. n.* 1465. *potius,* 1462. *Pollich pal. n.* 90. *Leers herborn. n.* 68. *t.* 6. *f.* 4. *Hoffm. germ.* 29. *Krock. ſileſ. n.* 141. *Villars dauph.* 127.

P. trivialis. *Leyſſ. halenſ. n.* 89. *Roth. germ.* 1. 42. 2. 113.

P. ſerotina. *Ehrh. gram.* 82.]

Gramen pratenſe paniculatum majus, latiore folio. *Bauh. pin.* 2. [*Scheuch. gram.* 177. *t.* 3. *f.* 17. A. *Mor. hiſt. ſ.* 8. *t.* 5. *f.* 18. *Raii hiſt.* 1285. *n.* 4. *ſyn.* 409.

Paniele diffuſed, ſpikelets four-flowered, glumes lanceolate five-nerved connected by a villus, ſtipule abbreviated blunt.

10. Poa ſerruginea. *Ruſt-coloured Meadow-graſs.*
Lin. ſyſt. 114. *Willd.* 388. *Townb. jap.* 50.

Paniele ſpreading capillary, ſpikelets five-flowered oblong, glumes ſmooth.

11. Poa cilianenſis.
Lin. ſpec. ed. Willd. 388. *Allion. pedem. n.* 2207. *t.* 91. *f.* 2. *Barr. obſ.* 3. *n.* 1216. *t.* 743.

Paniele elongated branched flexuoſe, ſpikelets four-flowered ſmooth.

12. Poa nervata. *Five-nerved Meadow-graſs.*
Lin. ſpec. ed. Willd. 389.

Paniele ſtrict, ſpikelets ſmooth five-flowered nerved.

13. Poa trinervata. *Three-nerved Meadow-graſs.*
Lin. ſpec. ed. Willd. 389. *Schrad. ſpicil.* 3. *Ehrh. Beit.* 6. 131. *gram.* 36. *Hoffm. germ.* 29. *Fl. dan. t.* 1145.

P. ſylvatica. *Pollich pal. n.* 87. *Krock. ſileſ. n.* 134. *Roth. germ.* 1. 43. 2. 117. *Hoffm. germ.* 30. *Villars dauph.* 2. 128.

Paniele diffuſed, ſpikelets four or five-flowered very ſharp rugged, outer glume of the corolla three-nerved, inner two-nerved.

14. Poa ſudetica.
Lin. ſpec. ed. Willd. 389. *Haenke ſudet.* 120.

P. quadripedalis. *Ehrh. gram.* 135.

Paniele from ereſt ſpreading, ſpikelets three-flowered very ſmooth mucronate, culm ereſt compreſſed, ſheath of the leaves looſe ancipital.

15. Poa rubens. *Red-paniced Meadow-graſs.*
Lin. ſpec. ed. Willd. 389. *Moench. meth.* 187.

Paniele ſpreading, ſpikelets four-flowered or thereabouts, outer glume of the corolla five-nerved, culm ereſt compreſſed.

16. Poa anceps. *Two-edged Meadow-graſs.*
Lin. ſpec. ed. Willd. 390. *Forſt. prodr. n.* 43.

Paniele diffuſed, ſpikelets five-flowered acute pubeſcent at the baſe, culm ancipital.

17. Poa annua. *Annual Meadow-graſs.*
Lin. ſpec. 99. *Reich.* 1. 187. *Willd.* 390. *fl. ſuec. n.* 83. *Hudſ. angl.* 42. *Wither. arr. ed.* 3. 143. *Smith angl.* 105. *Curt. lond.* 1. *t.* 6. *Relh. cant. n.* 66. *Sibth. oxon. n.* 131. *Stillingfl. miſc. t.* 7. *Fl. ruſt. t.* 98. *Hall. helv. n.* 1466. *Leers herborn. n.* 70. *t.* 6. *f.* 1. *Pollich pal. n.* 91. *Hoffm. germ.* 30. *Roth. germ.* 1. 42. 2. 115. *Neck. gallob.* 53. *Scop. carn. ed.* 1. 195. *n.* 8. *ed.* 2. *n.* 102. *Gmel. ſib.* 1. 102. *n.* 34 & 36. *Krock. ſileſ. n.* 142. *Villars dauph.* 2. 127. *Deſfont. atlant.* 72. *Muſ. ruſſ.* 4. 2. 8. *Berg. phyt. t.* 55.

P. humilis. *Ehrh. gram.* 115.

Gramen pratenſe paniculatum minus. *Bauh. pin.* 2. *theat.* 31. *Scheuch. gram.* 189. *t.* 3. *f.* 17.

Gr. prat. minus ſ. vulgatiſſimum. *Raii hiſt.* 1284. *ſyn.* 408.

Gr. prat. minimum album. *Ger.* 3. 2. *emac.* 3. 2. *Park. theat.* 1156. 4. *Mor. hiſt. ſ.* 8. *t.* 5. *f.* 21.

Gr. panic. minus album. *Bauh. hiſt.* 2. 465.

Gr. pratenſe 1. *Dod. pempt.* 560.

β. Gr. prat. panic. minus rubrum. *Tabern. ic.* 207. *Tournef. inſt.* 522. *Vaill. par.* 91. *n.* 61.

Paniele divaricate, ſpikelets ovate, florets ſomewhat remote five-nerved free, culm obliquе compreſſed.

18. Poa flava. *Yellow Meadow-graſs.*
Lin. ſpec. 100. *Reich.* 1. 187. *Willd.* 390. *Gron. virg.* 13.

Gramen pratenſe majus virginianum. *Petiv. muſ.* 239.

Paniele diffuſed, ſpikelets ovate-oblong ſtining.

19. Poa barbata. *Bearded Meadow-graſs.*
Lin. ſyſt. 114. *Willd.* 391. *Thunb. jap.* 50. *t.* 10.

Paniele ſpreading capillary, ſpikelets ſix-flowered oblong, glumes ſmooth keeled.

20. Poa pilofa. *Hairy Meadow-graſs.*
Lin. ſpec. 100. *Reich.* 1. 187. *Willd.* 391. *Scheuch. gram.* 193. *t.* 4. *f.* 3.

Paniele ſpreading ſtrict, primary ramifications hairy.

21. Poa paluſtris. *Marſh Meadow-graſs.*
Lin. ſpec. 98. *ſyſt.* 113. *Reich.* 1. 188. *Willd.* 391. *Hall. helv. n.* 1467. *Fl. dan. t.* 750. *Krock. ſileſ. n.* 136.

Gramen paniculatum aquaticum anguſtifolium, panicula ſpeciosa. *Scheuch. gram.* 184.

Gr. paluſtre panic. ſpecioſa. *Bauh. pin.* 3. *prodr.* 7. *Mor. hiſt.* 3. 201. *ſ.* 8. *t.* 6. *f.* 27.

Paniele diffuſed, ſpikelets ſubtriflorous pubeſcent, leaves rugged underneath.

22. Poa glutinoſa. *Clammy Meadow-graſs.*
Lin. ſpec. ed. Willd. 391. *Swartz prodr.* 26. *deſcr.* 214. *Sloan. jam.* 1. 114. *t.* 71. *f.* 2. *Raii hiſt.* 3. 633.

Paniele ſpreading ſtrict, ſpikelets ſeven to nine-flowered ſomewhat birſute glutinous, culm ſimple, leaves ſomewhat hairy.

23. Poa prolifera. *Proliferous Meadow-graſs.*
Lin. ſpec. ed. Willd. 391. *Swartz prodr.* 27. *deſcr.* 216.

Paniele ſpreading ſtrict, ſpikelets many-flowered, (ſixteen to twenty) culm very much branched knubbed, proliferous at the joints.

24. Poa amabilis. *Indian Meadow-graſs.*
Lin. ſpec. 100. *ſyſt.* 113. *Reich.* 1. 188. *Willd.* 392. *fl. zeyl. n.* 46.

Paniele ſpreading, ſpikelets eighteen-flowered linear.

25. Poa Eragroſtis. *Spreading Meadow-graſs.*
Lin. ſpec. 100. *ſyſt.* 114. *Reich.* 1. 118. *Willd.* 392. *mant.* 325. *Schreb. gram.* 2. 81. *t.* 38. *Hall. helv. n.* 1450. *Hoffm. germ.* 30. *Roth. germ.* 2. 118. *Gmel. ſib.* 1. 106. *n.* 40. *Villars dauph.* 2. 135. *Deſfont. atlant.* 74. *Cavan. hiſp. t.* 92.

Gramen paniculis elegantiſſimis minimum. *Scheuch. gram.* 192. *t.* 4. *f.* 2. *Tourn. inſt.* 522.

Gr. phalaroides, ſparſa Brizæ panicula, minus. *Barr. ic. t.* 44. *f.* 2.

Gr. tremulum minus, locuſta deltoide. *Mor. hiſt. ſ.* 8. *t.* 6. *f.* 47.

β. Gr. panic. elegantiſſ. majus, locuſtis purpuraſcentibus minoribus. *Scheuch. gram.* 193. *t.* 4. *f.* 13.

Paniele ſpreading, pedicels flexuoſe, ſpikelets ſerrate ten-flowered, glumes three-nerved.

26. Poa badenſis. *Baden Meadow-graſs.*
Lin. ſpec. ed. Willd. 392.

Paniele crowded ovate, ſpikelets eleven-flowered diſtich ovate pubeſcent at the baſe.

27. Poa cynoſuroides. *Bipinnate Meadow-graſs.*
Lin. ſpec. ed. Willd. 393. *Retz. obſ.* 4. 20. *Vahl ſymb.* 3. 10.

Uniola bipinnata. *Lin. ſpec.* 104. *Reich.* 1. 195.

Briza bipinnata. *Lin. ſyſt. ed.* 10. 875. *amoen.* 4. 450.

Paniele ſtrict pyramidal, peduncles ſpreading very much, ſpikelets hanging down diſtich.

28. Poa unioloides. *Uniola-like Meadow-graſs.*
Lin. ſpec. ed. Willd. 393. *Retz. obſ.* 5. 19. *n.* 41.

Paniele almoſt ereſt, ſpikelets ten-flowered or thereabouts ovate, lower calyxes many-valved.

29. Poa racemoſa. *Racemed Meadow-graſs.*
Lin. ſpec. ed. Willd. 393. *Thunb. prodr.* 21.

Paniele ſqueezed cloſe, ſpikelets ovate nine-flowered, peduncles very ſhort.

30. Poa cyperoides. *Cyperus-like Meadow-graſs.*
Lin. ſpec. ed. Willd. 393. *Thunb. prodr.* 22.
Panicles ſpike-glomerate, ſpikelets eleven-flowered, culm branched, leaves awl-ſhaped.

31. Poa verticillata. *Whorled Meadow-graſs.*
Lin. ſpec. ed. Willd. 393. *Cavan. ic.* 1. 63. *t.* 93.
Panicle ſpreading capillary flexuoſe, ſpikelets eleven-flowered linear-ſubulate.

32. Poa atrovirens.
Deſfont. atlant. 73.
Smooth; culm erect, leaves ſomewhat rigid, ſheath ſhorter than the internodes, panicle ſpreading, ſpikelets flat linear.

33. Poa abyſſinica. *Smooth upright Meadow-graſs.*
Lin. ſyſt. 114. *ed. Willd.* 394. *Ait. kew.* 1. 100. *Jacqu. ic. rar. t.* 43. *miſc.* 2. 364.
P. Taf. Zuccagni monogr. cum. ic.
Teff. *Bruce itin.* 5. 76. *ic. Ludolf. æthiop. l.* 1. *c.* 9. *n.* 2. *comment.* 137.
Panicle capillary looſe erect, ſpikelets four-flowered even linear-lanceolate, leaves ſmooth ſomewhat convoluted.

34. Poa capillaris. *Hair-panicled Meadow-graſs.*
Lin. ſpec. 100. *Reich.* 1. 189. *Willd.* 394. *Swartz obſ.* 39. *Kalm itin.* 3. 291. *ed. engl.* 3. 66. *Gron. virg.* 136.
Gramen paniculatum virginianum locuſtis minimis. *Mor. hiſt.* 3. 202. *ſ.* 8. *t.* 6. *f.* 33.
Panicle looſe ſpreading very much capillary, leaves hairy, culm very much branched.

35. Poa japonica. *Japoneſe Meadow-graſs.*
Lin. ſpec. ed. Willd. 394. *Thunb. jap.* 51.
Panicle ſpreading capillary, ſpikelets ſeven-flowered and leaves ſmooth, culm branched.

36. Poa malabarica. *Malabar Meadow-graſs.*
Lin. ſpec. 100. *Reich.* 1. 189. *Willd.* 394. *Burm. ind.* 27. *t.* 11. *f.* 2? *Retz. obſ.* 5. 19.
P. latifolia. *Vahl ſymb.* 2. 18? *Forſt. prodr. n.* 44?
Branches of the panicle quite ſimple, flowers ſeſſile, ſeeds diſtant, culm creeping.

37. Poa chinenſis. *Chineſe Meadow-graſs.*
Lin. ſpec. ed. Willd. 395. *Retz. obſ.* 5. 19. *Burm. ind.* 27. *t.* 11. *f.* 3. *Lour. cochinch.* 54.
P. panicea. *Retz. obſ.* 3. 11.
Branches of the panicle quite ſimple, flowers ſeſſile, ſeeds imbricate, culm erect.

38. Poa punctata. *Dotted-flowered Meadow-graſs.*
Lin. ſyſt. 144. *ed. Willd.* 395. *ſuppl.* 109.
Panicle diffuſed, ſpikelets twelve-flowered, flowers diaphanous even, with a brown ſpot within.

39. Poa nutans. *Nodding Meadow-graſs.*
Lin. ſpec. ed. Willd. 395. *Retz. obſ.* 4. 19. *n.* 54.
Panicle contracted nodding at the top, ſpikelets ten-flowered, valves reverſed.

40. Poa tenella. *Small Meadow-graſs.*
Lin. ſpec. 101. *ſyſt.* 114. *Reich.* 1. 189. *Willd.* 395. *Retz. obſ.* 5. 19. *Pluk. phyt. t.* 300. *f.* 2. *Burm. zeyl.* 110. *t.* 47. *f.* 3. *Rumph. amb.* 6. *t.* 4. *f.* 3.
Panicle oblong capillary ſomewhat whorled, flowers ſix together very minute nodding.

41. Poa maritima. *Sea Meadow-graſs.*
Lin. ſpec. ed. Willd. 396. *Ait. kew.* 1. 100. *Huds. angl.* 42. *Wither. arr. ed.* 3. 147. *Smith angl.* 97. *Light. ſcot.* 58. *Relh. cant. n.* 72. *Dickſ. faſc.* 2. 3. *Fl. dan. t.* 251. *Hoffm. germ.* 31. *Roth. germ.* 1. 43. 2. 121. *Pourret in act. toloſ.* 3. 325.
P. uvenaria. *Retz. ſcandin. n.* 120.
P. arundinacea. *Moench. meth.* 186.
P. cynosu. *Gunn. norv.* 780.
Gramen paniculatum maritimum vulgatiſſimum. *Raii hiſt.* 1086. 12. *ſyn.* 409.
β. Gr. caninum marit. panic. *Raii. hiſt.* 1286. 11. *ſyn.* 410. *Huds.* 42.
Panicle branched ſomewhat ſqueezed together, ſpikelets ſeven-flowered, florets blunt ſh roundiſh obſoletely five-nerved, root creeping.

42. Poa procumbens. *Procumbent Sea Meadow-graſs.*
Smith angl. 98. *Engl. bot. t.* 532. *Curt. lond.* 6. *t.* 11. *n.* 72.
P. rupeſtris. *Wither. arr. ed.* 3. 146. *t.* 26.
Panicle lanceolate directed one way ſqueezed cloſe rugged, rachis round, ſpikelets four or five-flowered, flowers bluntiſh nerved.

43. Poa rigida. *Hard Meadow-graſs.*
Lin. ſpec. 101. *ſyſt.* 114. *Reich.* 1. 190. *Willd.* 396. *amoen.* 4. 165. *Huds. angl.* 42. *Wither. arr. ed.* 3. 146. *Smith. angl.* 99. *Curt. lond.* 2. *t.* 4. 142. *Relh. cant. n.* 67. *Sibth. oxon. n.* 132. *Dickſ. fasc.* 6. 1. *Guett. ſtamp.* 62. *Neck. gallob.* 54. *Roth. germ.* 1. 43. 2. 120. *Ger. prov.* 90. *Villars dauph.* 2. 134. *Kroch. ſileſ. n.* 143. *Deſfont. atlant.* 74.
Gramen exile duriuſculum in muris & aridis proveniens. *Raii hiſt.* 1287. 17. *ſyn.* 410.
Gr. loliaceum murorum duriuſculum, ſpica erecta rigida. *Mor. hiſt.* 3. 182. *ſ.* 8. *t.* 2. *f.* 9.
Gr. panicula multiplici. *Bauh. pin.* 3. *prodr.* 6. *theat.* 32. 1. *Scheuch. gram.* 271. *t.* 6. *f.* 2. *Park. theat.* 1157.
Gr. minus duriuſculum. *Ger.* 4. 3. *emac.* 4. 3.
Gr. minus vulgare, panicula rigida. *Tournef. inſt.* 522.
Gr. arvenſe filicina duriore panicula gracilius. *Barrel. ic. t.* 49.
Gr. filiceum rigidiuſculum. *Vaill. bot.* 92. *t.* 18. *f.* 4.
Panicle lanceolate diſtich and pointing one way ſqueezed cloſe ſmooth, rachis margined, ſpikelets ſeven-flowered, flowers round nerveleſs.

44. Poa ſpinoſa. *Thorny Meadow-graſs.*
Lin. ſpec. ed. Willd. 397. *Thunb. prodr.* 22.
Feſtuca ſpinoſa. *Lin ſuppl.* 111.
Branches of the panicle alternate compreſſed ſpinescent, ſpikelets alternate peduncled ten-flowered, culm branched.

45. Poa compreſſa. *Flat-ſtalked Meadow-graſs.*
Lin. ſpec. 101. *ſyſt.* 115. *Reich.* 1. 190. *Willd.* 397. *fl. ſuec. n.* 84. *act. holm.* 1741. *p.* 184. *Huds. angl.* 41. *Wither, arr. ed.* 3. 147. *Smith angl.* 99. *engl. bot. t.* 365. *Relh. cant. n.* 68. *Sibth. oxon. n.* 130. *Dickſ. ſtec.* 6. 1. *Hall. helv. n.* 1455. *Pollich pal. n.* 93. *Leers herborn.* 30. *t.* 5. *f.* 4. *Gunn. norv. n.* 1004. *Fl. dan. t.* 742. *Roth. germ.* 1. 44. 2. 122. *Hoffm. germ.* 31. *Neck. gallob.* 53. *Kroch. ſileſ. n.* 144. *Villars dauph.* 2. 128.
Gramen pratenſe paniculatum medium. *Bauh. pin.* 2. *Raii hiſt.* 1285. *ſyn.* 409.
Gr. panic. radice repente, culmo compreſſo. *Vaill. par.* 91. *t.* 18. *f.* 5.—locuſtis diſtichis pulchellis. *Scheuch. gram.* 198.
Gr. loliaceum procumbens, caul. compreſſis, &c. *Monti ic.* 10.
Panicle ſqueezed cloſe directed one way, culm ſcrambling compreſſed, florets angular connected at the baſe by a complicated villus.

46. Poa ſarmentoſa. *Sarmentoſe Meadow-graſs.*
Lin. ſpec. ed. Willd. 398. *Thunb. prodr.* 21.
Panicle ſqueezed cloſe, ſpikelets lanceolate ten flowered, culm ſarmentoſe.

47. Poa ſtriata. *Striated Meadow-graſs.*
Lin. ſpec. ed. Willd. 398. *Thunb. prodr.* 22.
Panicle ſpreading, ſpikelets ovate ten-flowered or thereabouts, culm creeping.

48. Poa amboinenſis.
Lin. ſyſt. 115. *Willd.* 398. *mant.* 557. *Retz. obſ.* 4. 20.
Phœnix amboinica montana. *Rumph. amb.* 6. 19. *t.* 7. *f.* 3?
Panicle ſqueezed cloſe directed one way, culm round.

49. Poa viſcoſa. *Viſcid Meadow-graſs.*
Lin. ſpec. ed. Willd. 398. *Retz. obſ.* 4. 20.
Panicle oblong ſpreading, lower ſpikelets three-flowered (three to five), upper twelve-flowered, culms rigid finally viſcid.

50. Poa nemoralis. *Wood Meadow-graſs.*
Lin. ſpec. 102. *ſyſt.* 115. *Reich.* 1. 191. *Willd.* 399. *fl. ſuec. n.* 85. *Wither. arr. ed.* 3. 146. *Smith angl.* 106. *Relh. cant. n.* 69. *Sibth. oxon. n.* 134. *Hall. helv. n.* 1469. *Neck. gallob.* 52. *Scop. carn. n.* 108. *Leers herborn. n.* 72. 125. *f.* 3. *Pollich pal. n.* 94. *Fl. dan. t.* 749. *Hoffm. germ.* 30. *Roth. germ.* 1. 42. 2. 115. *Kroch. ſileſ. n.* 145. *Villars dauph.* 2. 129.

P. anguſtifolia

P. anguſtifolia β. *Huſſ. angl.* 41.

Gramen paniculatum anguſtifolium alpinum, locuſtis rarioribus & anguſtioribus non ariſtatis. *Scheuch. gram.* 164. *t.* 2. *prodr.* 18. 2. *itin.* 2. 18. 3.

Gr. loliaceum alpinum, paniculis ex rarioribus & exiguis locuſtis compoſitum. *Monti ic.* 12.

β. Poa anguſtifolia α. *Huſſ. angl.* 40.

P. pratenſis var. 2. *Wither.* 141.

Gramen paniculatum pratenſe majus, anguſtiore folio. *Mor. hiſt. ſ.* 8. *t.* 5. *f.* 19.

Panicle and leaves attenuated, ſpikelets lanceolate three-flowered or thereabouts, glumes acute obſoletely five-nerved, ſtipule very ſhort crenate.

51. Poa contracta. *Contracted Meadow-graſs.*

Lin. ſpec. ed. Willd. 399. *Retz. obſ.* 3. 11.

Panicle contracted, florets lanceolate three together naked ſeſſile, leaves filiform.

52. Poa filiformis. *Thread-leaved Meadow-graſs.*

Lin. ſpec. ed. Willd. 399. *Thunb. prodr.* 21.

Panicle ſpreading, ſpikelets acute four-flowered, leaves filiform.

53. Poa bulboſa. *Bulbous Meadow-graſs.*

Lin. ſpec. 102. *Reich.* 1. 191. *Willd.* 399. *Huſſ. angl.* 41. *Smith angl.* 102. *Hall. helv. n.* 1461. *Krock. ſilef. n.* 139. *t.* 25. *Villars dauph.* 2. 130. *Hoffm. germ.* 31. *Roth. germ.* 1. 44. 2. 122. *Deſfont. atlant.* 73.

Gramen xerampelinum, miliacea pertenui ramoſaque ſparſa panicula. *Scheuch. gram.* 185.

Gr. vernum, radice Aſcalonitidis. *Vaill. par. t.* 17. *f.* 8.

Panicle ſubflexuoſe, ſpikelets four-flowered, glumes connected by a villus, leaves ſerrulate, culm bulbous at the baſe.

54. Poa diſticha. *Double-rowed Meadow-graſs.*

Lin. ſpec. ed. Willd. 400. *Jacqu. ic. rar.* 1. *t.* 19. *miſc.* 2. 74. *Hall. helv. n.* 1447. (Feſteria.)

P. feſterioides. *Allion. pedem. n.* 2308. *t.* 91. *f.* 1.

Spikelets compreſſed four-flowered ſeſſile diſtich-ſpiked.

55. Poa bifaria. *Recurve-ſpiked Meadow-graſs.*

Lin. ſpec. ed. Willd. 400. *Vahl. ſymb.* 2. 19.

Spikelets ſeſſile diſtich, lower remote erect, upper approximating recurved.

56. Poa bromoides. *Brome-like Meadow-graſs.*

Lin. ſpec. ed. Willd. 401. *Vahl. ſymb.* 3. 10.

Subſpiked, ſpikelets lanceolate twenty five-flowered, lower on ſhort pedicels, upper ſeſſile, leaves bifarious involuted.

57. Poa ſpicata. *Spike-panicled Meadow-graſs.*

Lin. ſyſt. 115. *Reich.* 1. 192. *Willd.* 401. *mant.* 32.

Panicle-ſpiked, flowers awl-ſhaped, florets remote.

58. Poa diſtans. *Reflexed Meadow-graſs.*

Lin. ſyſt. 115. *Reich.* 1. 192. *Willd.* 401. *mant.* 32. *Withet. arr. ed.* 3. 141. *t.* 25. *Smith angl.* 96.

P. retroflexa. *Curt. lond.* 6. *t.* 1.

P. ſalina. *Pollich pal. n.* 92. *Hoffm. germ.* 30. *Roth. germ.* 1. 43. 2. 119. *Krock. ſilef. n.* 138.

Aira aquatica β. *Huſſ. angl.* 34. *Lin. ſyſt. ed.* 12. *v.* 2. 91. (Smith.)

Panicle branched effuſed, branches finally reflexed, ſpikelets five-flowered, florets very blunt, obſoletely five-nerved ſhining.

59. Poa divaricata. *Spreading Meadow-graſs.*

Lin. ſpec. ed. Willd. 402. *Gouan. illuſtr.* 4. *t.* 2. *f.* 1. *Deſfont. atlant.* 75.

Branches of the panicle corymbed, peduncles club-ſhaped, ſpikelets four-flowered, leaves filiform.

60. Poa criſtata. *Creſted Meadow-graſs.*

Lin. ſyſt. 115. *Reich.* 1. 193. *Willd.* 402. *Withet. arr. ed.* 3. 145. *Relh. cant. n.* 70. *Sibth. oxon. n.* 133. *Pollich pal. n.* 96. *Lœrs herborn. n.* 73. *t.* 5. *f.* 6. *Hoffm. germ.* 30. *Roth. germ.* 1. 43. 2. 119. *Krock. ſilef. n.* 132. *t.* 26. *Deſfont. atlant.* 76.

Aira criſtata. *Lin. ſpec.* 94. *Huſſ. angl.* 33. *Smith angl.* 83. *Gmel. ſib.* 1. 93. *n.* 24. *Hall. helv. n.* 1444. (Feſtuca.)

Gramen ſpica criſtata, ſubhirſutum. *Bauh. pin.* 13. *prodr.* 8. *Mor. hiſt.* 3. 194. *ſ.* 8. *t.* 4. *f.* 7. *Scheuch. gram.* 166. *Pluk. phyt. t.* 33. *f.* 7.

Panicle ſpiked, calyxes ſomewhat hairy four-flowered or thereabouts longer than the peduncle, petals awned.

61. Poa peruviana. *Peruvian Meadow-graſs.*

Lin. ſpec. ed. Willd. 402. *Jacqu. ic. rar.* 1. *t.* 18. *collect.* 1. 107.

Panicle ſpiked, ſpikelets five-flowered ovate, leaves and culms procumbent hirſute.

62. Poa glomerata. *Glomerate-panicled Meadow-graſs.*

Lin. ſpec. ed. Willd. 402. *Thunb. prodr.* 22.

Panicle ſpiked glomerate, ſpikelets four-flowered, corollas ciliate.

63. Poa ciliaris. *Ciliated Meadow-graſs.*

Lin. ſpec. 102. *ſyſt.* 115. *Reich.* 1. 193. *Willd.* 402. *amoen.* 5. 392. *Swartz obſ.* 39. *Jacqu. collect.* 2. 338. *Brown. jam.* 135. (Briza.) *Sloan. jam.* 1. 114. *t.* 73. *f.* 1. *Pluk. phyt. t.* 150. *f.* 5.

Panicle contracted, inner valves of the glumes hairy-ciliate.

64. Poa plumoſa.

Lin. ſpec. ed. Willd. 403. *Retz. obſ.* 4. 20.

Panicle diffuſed, calyxes ſix-flowered, inner valves of the corollas linear recurved ciliated at the back.

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65. Poa flexuoſa. *Zigzag Meadow-graſs.*

Smith angl. 101.

Panicle flexuoſe, ſpikelets three-flowered, glumes ovate connected by villus at the baſe, all the ſtipules lanceolate.

66. Poa exſia. *Sea-green Meadow-graſs.*

Smith angl. 103.

P. glauca. *Withet. arr. ed.* 3. 148?

Panicle diffuſed, ſpikelets ovate five-flowered, glumes lanceolate ſomewhat ſilky free, ſtipules very ſhort blunt.

67. Poa cinerea. *Aſh-coloured Meadow-graſs.*

Villars dauph. 2. 126.

Stem-leaves ereſt involuted, ſpikelets three-flowered, ciliate at the baſe acute.

68. Poa brizaides. *Briza-like Meadow-graſs.*

Villars dauph. 2. 126.

Panicle contracted, ſpikelets round four flowered awnleſs.

69. Poa divaricata. *Straddling-ſpiked Meadow-graſs.*

Villars dauph. 2. 127.

Leaves plane ſtriated, ſpikelets ſix-flowered acuminate, paniele divaricate.

70. Poa montana. *Mountain Meadow-graſs.*

Allion. pedem. n. 2199. *Hall. helv. n.* 1468.

Gramen paniculatum anguſtifolium *montanum, panicula denſa*, locuſtis parvis muticis. *Scheuch. gram.* 186.

Panicle ſtrict, ſpikelets two-flowered, glumes villoſe at the baſe.

71. Poa ſabauda. *Savoy Meadow-graſs.*

Allion. pedem. n. 2200. *Hall. helv. n.* 1470.

Panicle looſe, ſpikelets two-flowered, flowers twice as long as the calyx very ſmooth.

DESCRIPTIONS, &c.

1. Root perennial, creeping. Culms from three to ſix feet high, upright, leafy, the thickneſs of a reed ſtraw, two-edged, ſtriated, ſmooth, the joints yellowiſh, the lower joints rooting all round. Leaves enſiform, from half an inch to almoſt an inch in breadth, acute, ſtraight, ſmooth on both ſides except that the keel and edges are rugged, very finely ſtriated, the baſe of the leaf on each ſide marked with a yellow triangular ſpot; ſheath ſmooth and ſtriated, the keel prominent, the membrane ſhort and obtuſe. Panicle very large, from ſix inches to a foot in length, very much branched: branches in half whorls, rugged; branchlets alternate, flexuoſe. Florets from five or ſix to eight, ſeldom more, ſubcylindric, remote, purple on the outſide, rugged. Calyx nearly equal, whitiſh, ſhining. Outer corolline glumes ſeven-nerved, inner emarginate. Styles from a little below the top of the germ. Nectary, a ſmall truncated ſcale at the baſe of it. Seed of a pale brown colour*.

Water Meadow-graſs is one of the largeſt of our Graſſes. In the fens of Cambridgeſhire, Lincolnſhire, &c. immenſe tracts that uſed to be overflowed and produce uſeleſs aquatic plants, and ſtill retain much moiſture, though drained by mills, are covered with

* Curtis, Smith.

this graſs, which not only affords rich paſturage in ſummer, but forms the chief part of their winter fodder.

It has a powerfully creeping root, and bears frequent mowing well. It is ſometimes cut thrice in one ſeaſon, near the Thames. It grows not only in very moiſt ground, but in the water itſelf; and with Cat's-tail, Burr-reed, &c. ſoon fills up ditches, and occaſions them to require frequent cleanſing. In this reſpect it is a formidable plant, even in ſlow rivers. In the Iſle of Ely they cleanſe theſe by an inſtrument called a Bear; which is an iron roller, with a number of pieces of iron, like ſmall ſpades, fixed in it; this is drawn up and down the river by horſes walking along the bank, and tears up the plants by the roots, which float, and are carried down the ſtream[f].

Poa aquatica is native of moſt parts of Europe, and flowers from july to ſeptember. Like ſeveral other ſpecies of Poa, it varies with viviparous flowers.

2. Root perennial, with ſimple, elongated, ſmooth fibres. Root-leaves very many, ſpreading, flat, widiſh, nerved, ſmoothiſh eſpecially underneath, bluntiſh at the end with a little dagger point, rugged at the edge; with ſhort erect compreſſed ſheaths, and a ſhort blunt ſtipule; ſtem-leaves two, very ſhort, with very long ſheaths, and lanceolate acute ſtipules. Culm a foot high, aſcending, having two joints, naked at top, round, purple, ſhining. Panicle ſhort, roundiſh or ovate, branches in pairs alternately ſubdivided, angular, ſmoothiſh, ſometimes rugged. Spikelets cordate or broad-ovate, compreſſed, ſhining with purple and bay-colour, three or four-flowered, in gardens ſix-flowered. Calycine glumes almoſt equal, ovate, acute, ſomewhat ſickle-ſhaped, obſoletely nerved, rugged on the edge. Florets ovate, ſharpiſh, ſcarioſe on the edge and commonly ſilky, briſtly at the baſe, but free and not connected by complicated hairs; the inner valves emarginate and ciliate[g].

Villars alſo remarks that the glumes of the corolla have ſome ciliæ at the edge; and that the culm is often compreſſed.

β. This ſpecies, in common with many alpine graſſes, which live almoſt conſtantly in a moiſt vapour, is frequently viviparous. Linnæus ſays, it is often found in this ſtate in the Lapland alps, and that it continues ſo in gardens; and that it is not the calyx or petals growing out into leaves; but the rudiment of the germ, like Lycopodium Selago, leafing, falling, and growing[h].

Dr. Smith's account is, that the glumes change into leaves, and at length the fructification into a bud.

Mr. Lightfoot informs us, that the ſpecimen he ſaw in Scotland was viviparous: the leaves ſmooth, compreſſed, and a little recurved; the ſtalk five inches high, ſlender, and purple; the panicle open and thinly ſet with flowers; the calyxes of a purple colour; and the germs viviparous.

Alpine Meadow-graſs grows wild in Lapland, Switzerland, Sileſia, Dauphiné, the highlands of Scotland, and Wales. It flowers in june and july.

3. Panicle ſmall, with the branches preſſed cloſe, two-flowered or three-flowered. Spikelets three-flowered or four-flowered. Calycine glumes mucronate. Glumes of the corolla acute, of a duſky violet colour, with a membranaceous white margin.

Native of the mountains of Switzerland, Bohemia and Sileſia[i].

4. Culm a foot high, aſcending, leafy. Upper leaves ſcarcely ſhorter than the culm, naked, linear, acute. Panicle elongated, narrowed; pedunckes ſhort, ſpreading, half whorled. Flowers numerous, minute. Calyxes ſmooth, pellucid, ovate, compreſſed, of the ſame ſize with the glumes of the corolla, two-flowered, more ſeldom three-flowered.

Native of the Eaſt Indies, whence it was ſent by Koenig[k].

5. Culm round, ſimple, upright, ſmooth, three feet high. Leaves enſiform, entire, ſtriated, ſlotted-ciliate, as is the whole of the ſheath, which is very long. Panicle a foot long. Pedunckes angular, ciliate-rugged at the angles. Pedicels very ſhort, preſſed cloſe. Calyxes having the keel very finely ſerrulate.—Native of Japan[l].

6. Root fibrous. Culms decumbent at the baſe and rooting, then erect, a foot and half high, ſimple, round, ſtriated, ſomewhat rugged, leafy, frequently purple. Leaves almoſt erect, flaccid, ſharpiſh, keeled, rugged, eſpecially underneath and round the edge. Sheaths almoſt the length of the leaves, ſomewhat compreſſed, ſtriated, a little rugged. Stipule lanceolate, acute. Panicle elongated, upright, very much branched, rugged; branches alternately decompounded, when in flower ſpreading horizontally. Spikelets ovate, generally three-flowered, purple and green. Calycine glumes rugged at the back, equal in length: outer linear-lanceolate, acuminate: inner dilated at the edge, three-nerved. Florets bluntiſh, five-nerved, ſcarioſe at the tip, ſomewhat ſilky at the edge and on the back: inner valves have a thickened, green and ſcarcely pubeſcent margin[m].

Culm from one to two feet high, creeping at bottom, whence this graſs becomes perennial. Spikelets ſmall, containing two or three, ſometimes four flowers. Glumes of the calyx unequal. If the glumes of the corolla are drawn out of them, a woolly ſubſtance is obſervable, as in P. pratenſis: theſe are nearly equal and pointed. Anthers yellow or purpliſh, finally becoming forked at each end. Germ very ſmall, ovate: ſtyles feathered almoſt to the bottom. Nectary, two little tender glumes, at the bottom of the germ. Seed oblong, pointed, having a woolly ſubſtance at bottom[n].

Dr. Withering remarks that the root is creeping; the whole plant rough; the height from one foot and a half to two feet or more; the panicle ſix or eight inches long, and three or four broad when fully expanded; the florets moſtly three or four in each ſpikelet, but generally three. Its creeping root, and the great roughneſs of the culm and leaves, ſufficiently diſtinguiſh this from P. pratenſis, to which it has otherwiſe ſome reſemblance.

Willdenow ſays it is ſufficiently diſtinguiſhed by its very branching diffuſed panicle, and eſpecially by the great length of the ligule or ſtipule, which character Curtis firſt pointed out. See *P. pratenſis*.

P. trivialis is certainly one of our beſt graſſes, both for hay and paſturage; indeed a good meadow can ſcarcely be formed without it. Its chief qualities are, that it produces a large quantity of ſweet tender leaves, preferred by cattle to moſt others, and convertible into exceeding fine hay. It is an early graſs, flowering about the beginning of june. It does not bear froſt ſo well, nor does it ſhoot ſo early in the ſpring as the Poa pratenſis; but when the weather becomes warm enough to make Graſſes in general ſhoot, this grows faſter, and produces a greater crop of bottom leaves than moſt others. Whilſt that is found chiefly in dry paſtures, this principally occurs in moiſt meadows, or on the edges of wet ditches: it loves moiſture, and a ſheltered ſituation. In very wet ground it grows very tall; but in poor dry paſtures it is diminutive[o].

So long ago as the year 1785, Mr. Boys of Betſhanger in Kent, a farmer of the higheſt reputation, raiſed at much expenſe, and ſeveral years attention, from twenty to thirty buſhel of the Poa trivialis, which he then offered for ſale at three ſhillings a pound. He ſays that it makes a very fine thick turf, and will produce a great quantity of very excellent graſs, from moiſt rich ſoils, and that horſes, cattle and ſheep, are all very fond of it: that the firſt ſeed he had was given him by William Boys, Eſq. of Sandwich, who collected it to the quantity of about an ounce. He uſed the ſtraw after the ſeed was thraſhed, inſtead of hay, for his riding horſes, and they preferred it to his beſt meadow hay. The ſeed being very ſmall, he thinks that ſeven pounds will ſow an acre; but to have the land covered thick the firſt year, a little more ſhould be ſown. Sifting the ſeed is a work of time, as it

[f] Curtis. [g] Smith. [h] Fl. ſuec. [i] Willdenow. [k] Retz. [l] Thunberg. [m] Smith. [n] Idem. [o] Curtis.

hangs

hangs together in lumps, and muſt be rubbed by hand though a ſieve fifteen wires to an inch[a].

It is no ſmall recommendation, ſays Mr. Curtis, to this Graſs, that it is a principal ingredient in that uncommonly productive meadow near Saliſbury, mentioned by Stillingfleet, and deſcribed in the firſt volume of the Memoirs of the Bath Agricultural Society, &c. See our article MEADOW.

Mr. Curtis had five turfs ſent him from this famous meadow, which he planted in his garden at Lambeth marſh. Poa trivialis appeared in all the ſix. Agroſtis paluſtris in three. Alopecurus pratenſis in two. Triticum repens in four. Avena elatior in one. Hence he concludes, that the extraordinary fertility of this meadow aroſe not from any new graſs peculiar to it, but from ſeveral unuſual circumſtances concurring and favouring in an uncommon degree the growth of certain well-known Graſſes, eſpecially Poa trivialis and Agroſtis paluſtris.

This long graſs was noticed long ſince by Merret and Ray, under the name of *Gramen caninum ſupinum longiſſimum*; and the place of growth aſſigned is Maddington, two miles from Saliſbury. Ray adds, that it is twenty-four feet long; that they fat hogs with it; and that it grows in ſome parts of Wales. The greateſt part of the meadow in which Mr. Swayne found this graſs is in the pariſh of Maddington; and that is divided from Orcheſton St. Mary only by a ſmall ſtream. The following account from that ingenious gentleman will at length clear up the obſcurities which have ſo long hung over this celebrated graſs.

A friend of Mr. Swaynes' in Somerſetſhire had been to ſee the Orcheſton graſs, and being on the ſpot at the time the meadow was mowing, was directed to the *real long graſs* by the farmer and labourers, and brought back with him living plants and ſpecimens of the flowers. The latter were the Alopecurus pratenſis of very large growth. Mr. Swayne carried home one of the plants and ſet it in his garden. The ſpring following it produced a very fine tuft of ſpikes of Alopecurus pratenſis. The year following, Mr. Swayne viſited Orcheſton the firſt week in june. The greateſt part of the meadow, or meadows, for there are ſeveral partitions, though the whole is not more than two or three acres, was then mown, and the graſs was lying in ſmall cocks. The ſtanding part, which was one corner, about a quarter of an acre had one uniform appearance, and preſented a thick and beautiful aſſemblage of the flowering panicles of what he took to be *Poa trivialis paluſtris* of Hudſon. It is not however the Poa paluſtris of Linneus, but only a trailing variety of Poa trivialis, taking root at the joints: as Dr. Withering determined from the ſpecimen ſent him by Mr. Swayne.

The graſs which had not been cut was lodged or lying on the ground, and had put forth roots at the knots, and began to be erect only at the laſt knot or two. Theſe meadows are mown twice, at the end of may or beginning of june, and at the end of july or beginning of auguſt.

Mr. Swayne remarks very judiciouſly that no graſſes but thoſe that flower early could be in bloom at the firſt mowing, and that whatever graſſes are in bloſſom at the laſt mowing muſt be of the late-flowering kinds. Mr. Davies ſays, in his Wiltſhire report, that Mr. Sole has determined the Orcheſton graſs to be the *Agroſtis ſtoloniſera*, and probably that graſs may be predominant, perhaps the only graſs in flower, at the time of the laſt mowing[b].

β. Dr. Smith regards the *Poa fetacea* of Hudſon's firſt edition as a variety of this; for it cannot be referred to P. pratenſis on account of its lanceolate acute ſtipule. The lower leaves are involute-ſetaceous.

7. Panicle oblong, crowded, ſo as to ſeem almoſt imbricate, with four-flowered florets, when ripe often villoſe, wandering, cohering. Anthers yellow[c]. Linneus ſpeaks of it as growing every where with the preceding in Sweden and Lapland. Dr. Smith regards it as a variety of P. pratenſis; which ſee.—For *P. anguſtifolia* of Hudſon, &c. ſee *P. nemoralis*, *n.* 50.—and *P. capillaris*, *n.* 34.

8. Culm round, ſmooth, ſtraight, a foot high and more. Leaves few, in long ſheaths. Panicle naked, looſe: pedunckes erect, angular, ſolitary or in pairs, divaricate. Spikelets ſubſeſſile, lateral and terminating, compreſſed. Valves of the calyx almoſt equal, keeled, of a reddiſh bay colour, with pellucid margins. Corollas keeled, equal in length, of an elegant bay colour, large, one wider than the other. Filaments very ſhort: anthers longer, purple, incloſed. Styles alſo very ſhort[d].

Native of the mountains of France, Italy and Switzerland. Introduced in 1775, by Drs. Pitcairn and Fothergill. It flowers in april and may[e].

9. Root perennial, creeping by runners, eaſily penetrating into the earth and crevices of walls. Culms upright, ſmooth, ſcarce perceptibly ſtriated, a foot or eighteen inches in height. Leaves ſmooth, of a dark green colour, ſometimes glaucous or blueiſh, keeled, bluntiſh, ſpreading. Sheaths the length of the leaves, ſtriated, ſmooth. Stipules ſhort, blunt. Panicle as in trivialis, but leſs rugged. Spikelets ovate, four-flowered, often five-flowered, ſometimes only two-flowered, flattened on each ſide, green or ſometimes purple. Calycine glumes ſharp, rugged on the back, a little unequal, three-nerved. Florets bluntiſh, five-nerved, ſcariole at the tip, rugged on the back, connected at the baſe by numerous very long complicated villoſe hairs; the inner valves ſomewhat pubeſcent at the edge. Filaments longer than the glumes: anthers forked at each end. Styles branched to the bottom. Nectary, two little glumes at the baſe of the germ. Seed angular, pointed[f].

Dr. Withering remarks, *that it* is from one to two feet high; that the leaves, though much leſs rough than in *P. trivialis*, are not always ſmooth; that the panicle is heavy when in ſeed, not greatly diverging, from two to four inches in length, and more than half as broad.

The late Mr. Curtis, whoſe attention to Graſſes is well known, firſt accurately diſtinguiſhed *P. trivialis* and *pratenſis*, which are ſo alike in their general appearance, as hardly to be diſtinguiſhed without nice examination. The *pratenſis* however is in every part ſmooth; whilſt in *trivialis* the ſtalk, leaves with their ſheaths, and the branches of the panicle, all feel rough, if the plant be drawn downward betwixt the thumb and finger: in the *trivialis* the ſheath of the leaf is flatter and more deeply fluted: the root of the *trivialis* is ſimply fibrous; that of the *pratenſis* is creeping, and ſends out many white ſhoots; but what diſtinguiſhes them moſt fully is, that the membrane at the bottom of the leaf where the ſheath begins, (ligula ſ. ſtipula) in the *pratenſis* is very ſhort and blunt, in the *trivialis* long and pointed: this diſtinction is obvious to the moſt common obſerver, and never fails, let the graſs vary ever ſo much in ſize, &c. Theſe two graſſes differ alſo in the ſize of the ſpikelets, and the number of flowers contained in each; in the *trivialis* they are biflorous or triflorous, in the *pratenſis* moſt commonly *quinqueflorous*. The *pratenſis* grows generally on walls, or on dry banks, but often in meadows: the *trivialis* is ſcarce ever found on walls, ſeldom on dry banks, but moſt frequently in moiſt meadows or by the ſides of ditches: the former flowers about the third week in may, the latter the firſt week in june; after the *pratenſis* has once flowered, it ſhows no diſpoſition to do ſo again; whilſt the *trivialis* is found in bloom, though not generally, during the whole of the ſummer. Laſtly, there is a firmneſs in the ſtalk of the *pratenſis* not perceivable in the *trivialis*. As to the pubeſcence, or filamentoſe appearance, which ſeems to connect the florets and calyx together, and adheres to the ſeeds ſo as to cauſe them to hang together as if there were cobwebs among them, it takes place nearly in an equal degree in both ſpecies[g].

The foliage of Poa pratenſis begins to ſhoot, and to

[a] Young's annals, 5. 415. [b] Wither. arr. 144. [c] Linn. ſuec. [d] Gerard prov. [e] Hort. kew. [f] Curtis, Smith. [g] Flora lond.

aſſume

aſſume a beautiful verdure very early in the ſpring, but its flowering ſtems are not produced ſo ſoon, by a week at leaſt, as thoſe of *Alopecurus pratenſis* or Meadow Foxtail-graſs. Where early paſturage is deſired, it cannot better be obtained than by a combination of theſe two with *Anthoxanthum odoratum* or ſweet-ſcented Vernal-graſs. If crop be an object, the Foxtail ſhould predominate.

This graſs preferring a dry ſituation, keeps its verdure in a continued drought better than moſt others: but it has a root like Quich or Couch-graſs, (Triticum repens) and ought therefore to be cautiouſly introduced, where the meadow is not intended to be permanent. From its not throwing up any ſtems or bents but once in the ſeaſon, together with its hardineſs and verdure, it ſeems to be a good graſs for lawns.

In dry ſoils, the crop from this graſs yearly diminiſhes in quantity, ſo as at laſt to be very trifling; in moiſt meadows this effect has not been ſo obſervable. Upon the whole, this graſs has rather ſunk than riſen in Mr. Curtis's eſtimation [k].

Dr. Withering relates that this graſs conſtitutes a conſiderable part of the herbage on the rich meadows in the flat parts of Somerſetſhire.

Mr. Swayne obſerves, that in meadows which have been flooded the whole winter, it flouriſhes ſo as nearly to exclude every other graſs.

β. Dr. Smith conſiders *Poa anguſtifolia* of Linneus as a variety of this graſs; and informs us that it differs from it in having the lower leaves very narrow, and ſtiffiſh, the panicle ſmaller, and the lower ſheaths ſomewhat rugged.

Dr. Withering makes *P. fetacea* of Hudſon a variety of this ſpecies. According to Dr. Smith, it is a variety of *P. trivialis*.]

Mr. Miller celebrates the perennial Meadow-graſſes as the beſt ſpecies for paſtures, and ſuggeſts that if the ſeeds of theſe were carefully collected, and ſown ſeparately without any other mixture of Graſs-ſeeds, they would not only afford a greater quantity of feed on the ſame ſpace of land, but the graſs would alſo be better, the hay ſweeter, and the verdure more laſting than of any other ſorts.

[10. Leaves convoluted, ſtriated, erect, ſmooth, a little longer than the culm. Sheaths bearded at the opening. Culm ſimple, erect, a foot high. Panicle rod-like, a ſpan long. Peduncles and pedicels capillary, flexuoſe. Calyxes four-flowered and five-flowered, acute, ſmooth, duſky-ruſt-colour. It has the appearance of *P. Eragroſtis*, but the ſpikelets are ſhorter and few-flowered.—Native of Japan [l].

11. A foot high and more. Culms grooved, ſmooth, brown at the knots. Leaves dark green, ſmooth, ciliate about the ſheath, two or three lines wide. The leaf almoſt under the panicle, equals or exceeds the whole panicle; which has three or four branches from the ſame point, ſeldom one only. Branches flexuoſe, the firſt branched again. They all put forth diſtich ovate-oblong ſpikelets, diſpoſed in a ſort of thin ſpike, for the moſt part alternate, peduncled. Peduncles moſtly one-flowered, ſometimes two-flowered. Spikelets ſometimes three-flowered, commonly four-flowered, ſometimes five-flowered. Calycine valves acute, with a prominent greeniſh nerve. Corolline glumes ovate, having alſo a nerve. It is an annual graſs, native of Italy, where it was found by Bellardi [m].

12. Panicle almoſt half a foot long, with capillaceous branches, preſſed cloſe and ſubdivided. Spikelets ſmall, green. Corollas ſmooth, having five raiſed nerves on each valve. Native of North America [n].

13. Root perennial. Culms many, upright, from two to three feet, and often a little more in height, round, ſmooth, blueiſh green; having four purpliſh joints. Leaves flat, mucronate, bright or reddiſh green, ſmooth above but ſomewhat rugged underneath, with a whitiſh nerve. Ligule or ſtipule jagged, two lines in length. Sheaths ſmooth, ſtriated, ſomewhat rugged when drawn backwards. Panicle green and white; branches two from the ſame point, conſiſting of cloſely crowded branchlets, eſpecially towards the top. Spikelets ſmall, ovate-oblong, compreſſed, from four to ſix-flowered, whitiſh green, mixed ſometimes with a little purple. Glumes of the calyx narrow, lanceolate, keeled, mucronate, the larger little more than a line and half, the ſmaller more than a line in length. Glumes of the corolla lanceolate, narrow, ending in a very acute point, two lines in length.

This ſpecies differs evidently from all the other ſpecies, except the *alpina*, and from that it may be diſtinguiſhed, by its longer culm, much wider leaves, ſmaller ſpikelets, and by its narrow very acute glumes [o].

Native of Germany. It was firſt obſerved by Pollich in the Palatinate, flowering in june and july. The *ſylvatica* of Kroecker ſeems to be the ſame with this; but whether that of Villars be ſo is very doubtful.

14. Height four feet. Leaves wide. Habit like that of the preceding, but ſufficiently diſtinct. Culm two-edged. Spikelets bright green, much ſmaller than the preceding, with the florets acuminate.

Native of the mountains of Sileſia, and of the marſhes of Hanover and Magdebourg [p].

15. This is a middle ſpecies between the *trinervata* and *judaica*: it differs from the former, to which it approaches the neareſt, in having ſhorter broader leaves, a longer ligule, a ſhorter panicle of a red colour and leſs divaricate, the ſpikelets more crowded and rugged, the outer valve of the corolla five-nerved. It is a perennial graſs, native of the lower Heſſe [q].

16. Native of New Zealand [r].

17. Root annual, remarkably full of fibres. Culms numerous, forming a thick tuft, ſemiprocumbent, but in meadows among other plants nearly upright, ſlender, leafy, ſmooth and even, at the baſe rooting and branched, about half a foot high, or varying in different ſituations from leſs than three inches to near a foot. Leaves very numerous, linear, bluntiſh, flat or ſometimes tranſverſely wrinkled, flaccid, ſmooth, bright green, rugged or finely ſerrate on the edge. Sheaths elongated, flat, ſmooth, ſtriated, paliſh. Stipule ſhort, ſubdeltoid, eroſe. Panicle triangular, flattiſh, erect, ſmooth: branches or peduncles at the bottom generally in pairs, one ſhorter than the other, in the middle often in threes, and at top ſingle: it is thinly ſet, near two inches long and almoſt as broad. Spikelets ovate-oblong, flattiſh and ſharp on both ſides, three, four, or ſometimes five-flowered, ſhining, green and white variegated, ſmooth. Calycine glumes lanceolate acute, keeled, unequal. Florets rather remote, ovate-lanceolate, blunt, five-nerved, membranaceous at the edge, ſomewhat ſilky at the back, but entirely free at the baſe, not connected by hairs. Styles exceedingly branched and pellucid. Seed ovate, covered by the corolla, which adheres to it, and ſlightly villoſe at bottom [s].

Poa annua is diſtinguiſhed from *P. trivialis* by its general habit, its ſpreading panicle, its reclining culms, its ſmoothneſs and greater ſoftneſs and delicacy: from *P. pratenſis* by having the branches or peduncles in pairs, its panicle more thinly ſet, and its ſpikelets larger: from both, by its inferior ſize, compreſſed culms, annual root, property of throwing out new ſhoots, and having the florets and ſeeds ſeparate, not hanging together by cobweb-like hairs.

If *Gramen* be ſo named, ſays Ray, *a gradiendo* or *progrediendo*, no ſpecies better merits the name than Annual Meadow-graſs. Mr. Curtis, to whoſe accounts of Graſſes it is difficult to add any thing new, remarks, that it differs very conſiderably from all other annual graſſes, in continually throwing out new ſhoots, and producing new flowers and ſeeds, inſomuch that if the ground be moiſt, a ſingle plant will grow in this manner throughout the year, ſo that we generally find on the ſame plant young ſhoots and ripe ſeeds. It imitates therefore the tropical plants in this circumſtance, and is perhaps the only vegetable we have that does ſo.

[k] Pract. obſ. ed. 3. p. 12, &c. [l] Thunberg. [m] Allioni. [n] Willdenow. [o] Pollich. [p] Willdenow. [q] Idem. [r] Forſter. [s] Curtis, Smith.

No

No graſs is better entitled to the accurate Ray's epithet of *vulgatiſſimum*, for it is common to every quarter of the globe, and occurs almoſt every where in meadows, gardens, by the ſides of paths, and on walls; flowering all the ſummer, and even in the winter, if the weather be mild. In open fields the panicle frequently acquires a reddiſh tinge.

It appears to be one of the firſt general coverings which nature has provided for earth made bare from any cauſe; hence it is frequent on the edges of paths, where its ſeeds being ſcattered quickly vegetate, and the plants not being overpowered by more luxuriant herbage, continue to flouriſh; this gave occaſion to Mr. Stillingfleet to ſuppoſe that this graſs thrived the more for being trodden on, but this ſuppoſition is void of foundation.

In walks, pavements and pitching it is one of our moſt troubleſome weeds; in ſuch ſituations the moſt expeditious way of deſtroying it, would be by pouring boiling water on it.

Mr. Stillingfleet ſays that it makes the fineſt of turfs; that it is called in ſome parts Suffolk Graſs, there being whole fields of it in High Suffolk, without any mixture of other graſſes, and that it is likely to be the beſt graſs for the dairy.

Its foliage is tender and grateful to cattle, but it never acquires any great height: it is alſo liable to be killed by winter's froſt and ſummer's drought.

May or june is the beſt time to gather the ſeed in greateſt abundance; but as a ſingle tuft of this graſs may be divided into a vaſt number of plants, and as they grow with wonderful facility, an experiment, on a ſmall ſcale at leaſt, might be tried with it by tranſplanting it in moiſt weather [1].

This ſpecies becomes viviparous in alpine ſituations [2].

18. Native of Virginia [3].

19. Root annual, in bundles of fibres. Culm ſimple, upright, round, ſmooth, a ſpan in height. Leaves narrow, linear, attenuated at the tip, ſetaceous, convoluted, entire, ſmooth, longer than the culm. Joints bearded. Peduncles bifid or branched, with alternate, flexuoſe, ſmooth pedicels. Spikelets five, ſix or ſeven-flowered, oblong, often ferruginous, ſmooth, ſerrate from patulous florets. Native of Japan [4].

20. Height fourteen and ſixteen inches. Leaves on the culm three or four inches long, ending in a ſharp point, ſmooth except at the edges, where they feel rough if drawn between the finger and thumb. Panicle very thin, looſe and ſcattered, from a hand to half a foot in length. Branchlets or peduncles very ſlender, moſtly ſingle and at unequal diſtances, except the loweſt, which come out every way in a ſort of whorl. Spikelets ſmall and delicate, of various ſizes: the loweſt on ſhorter peduncles, only a line in length or ſhorter, three-flowered; others a line and half in length and four-flowered; others two lines in length, having five, ſix or ſeven florets, placed alternately. Calycine glumes narrow, acuminate, unequal, the larger ſcarcely half a line in length. The lower glume of the corolla a line and half long, the upper one a little ſhorter. The lower branchlets of the panicle are villoſe with longiſh hairs at the baſe; and the other branchlets (or peduncles) up to the middle of the panicle have a very fine ſlender hair or two, about two lines in length at their baſes. Native of Italy about Bologna [5].

21. Root perennial, creeping. Culm from a foot to two feet in height, ſometimes but ſeldom three feet, at firſt decumbent, then erect, weak, round, rooting at the four or five lower joints by white capillary fibres, between the joints involved in green white or brownish ſheaths, putting out at almoſt every rooting joint a lateral ſhoot, rendering the culm as it were dichotomous; the joints are very cloſe near the baſe, but very remote in the upper part of the culm. Leaves ſcarcely two lines wide, acuminate. Ligule or ſtipule ſubdiaphanous. Panicle half a foot or more in length, pyramidal, the lower branches being very long and decreaſing gradually till the uppermoſt are very ſhort: pedicels ſlender, unequal, alternate, ſeveral together from the ſame point, branched, criſped as it were with various flexures. Spikelets variegated with green and white, ovate, compreſſed, acuminate. Calyx two or three-flowered; one glume narrower, both blackiſh on the outſide, acuminate. Glumes of the corolla narrower, green, acuminate, browniſh at the tip, covered with a very fine pubeſcence or villus at the baſe [6].

Krocker could not obſerve that the ſpikelets were pubeſcent; he has ſeen them with four flowers. He remarks that the rachis at the riſe of the pedicels is divided by little white knobs, as in moſt of the other ſpecies.

He diſtinguiſhes it from *P. trivialis* by its creeping, dichotomous culm; its creeping root; its thinner, longer and more diffuſed panicle; and its wider, longer, rugged leaves: from *anguſtifolia* alſo by its culm and leaves; its longer, wider panicle, and larger ſpikelets. It is known, ſays Seguier, when the rice-fields are hoed, during its tender ſtate, by its glaucous leaves; when farther advanced, by the ſpinules of the leaves [7].

Haller informs us, that Bauhin's name does not appertain to this ſpecies, but yet that Moriſon's figure does repreſent it.

Native of Denmark, Switzerland, Italy, and Germany.

22. Culm one or two feet high, ſuberect, very ſlender, ſtrict, round, ſmooth, jointed below. Leaves ſhort, linear, acute, concave, ſpreading, hairy or ſomewhat hirſute; the hairineſs thin and clammy. Sheaths hirſute. Panicle two inches long, ſomewhat hirſute: branches alternate, diſtant, ſimple, few-flowered. Spikelets diſtinct, three to ſix on a branchlet, purple, pedicelled. Calycine valves acute, keeled, minute. Corolline glumes a little larger, ovate, acute, keeled, flatted a little; the inner ciliate, when examined by a magnifier; with that advantage, the keel alſo appears ſerrulate. Filaments very ſhort. Anthers dark-purple. Stigmas hairy, whitiſh. Seed roundiſh, very minute.—It is diſtinct from *P. piloſa* in not having the loweſt branchlets of the panicle whorled and hairy: —from *P. amabilis* in having fewer florets, not linear: —from *P. Eragroſtis* in the rigidity of the panicle, the diſtance and clammineſs of the branchlets, &c.—from *P. capillaris* as in the preceding, and alſo in having an upright ſimple culm.

It is an annual graſs, native of Jamaica, in dry ſand.

23. Culm a fathom high and more, upright. Branches ſubdivided, round, ſtriated, ſmooth. Joints knobbed, leafy, proliferous as it were with the origins of a younger plant. Leaves in bundles, linear, ſetaceous, commonly convoluted, ſheathing, erect, even. Panicles a ſpan and more in length, branched, erect: branchlets ſubdivided, capillary, ſtrict, flexuoſe. Spikelets pedicelled, lanceolate, compreſſed. Calycine valves equal. Corolline valves ovate, acuminate, keeled. Filaments two or three. Anthers pale. Stigmas villoſe.

Native of the Caribee iſlands; St. Lucia, Guadeloupe [8].

24. This is very nearly allied to the next ſpecies, with purple flowers, and three-nerved glumes, the lower of which gradually fall. Native of the Eaſt Indies [9].

25. This is an annual graſs. The outer glumes keeled, hyaline, with green nerves on both ſides, by which it is eaſily diſtinguiſhed. Flowers ovate, ſharpiſh, ſix to nine-flowered without a ſcarioſe margin. Panicle waved [10].

Though annual, this graſs throws out ſeveral inclined culms on a fibrous root, thus forming a dark-green turf. They are from ſix to ten inches in height, and divide by furniſhing ſeveral lateral branches, which bear panicles at their lower part. Leaves open, flat, dark green, having a pencil of hairs at their baſe on each ſide. Terminating panicle oval, upright, two or

[1] Curtis. [2] Davies in Smith. angl. [3] Gronovius. [4] Thunb. [5] Scheuchzer. [6] Krocker. [7] Veron. 1. 351. [8] Linn. ſpec. [9] Swartz. [10] Lin. ſpec. [11] Linn. mant.

three inches long, compoſed of a great number of filiform ſtraight branches, and an infinity of ſpikelets, which are linear, reddiſh, very narrow, almoſt cylindrical, each compoſed of from eight to ten flowers. Glumes ſmooth, reddiſh or brown, with a whitiſh margin.

When the ſpikelets of the upper panicle are ripe, the ſeeds fall immediately, and ſucceſſively thoſe of the middle and baſe of the culm. This quick falling of the ſeeds, is the reaſon why we may often obſerve the young flowers withering at the baſe, whilſt thoſe in the middle are in the ſtate of full expanſion, and the upper ones falling preſent ripe ſeeds, of an uncommon fineneſs, though accompanied by the inner glume, and often by both.

In Dauphiné the panicle is not ſpreading, the peduncles are ſcarcely flexuoſe, and the glumes have not any ſenſible nerves. Theſe characters are found in *Briza Eragroſtis*, which a little reſembles this: but the wide flatted ſpikelets of that are three times as big, and three times leſs in number; beſides the three nerves are ſo ſtrongly marked, that the middle one forms a keel, and renders the ſpikelets diſtich and flatted, whilſt the two lateral nerves leave between them and it a curved deep ſpace. The ſpikelets of *P. Eragroſtis* on the contrary are almoſt cylindrical, becauſe they are very narrow, and have no nerve[a].

Lamarck and Cavanilles inſiſt that *Poa* and *Briza Eragroſtis* are one and the ſame plant.

According to Deſfontaines, the culms are ſlender, procumbent at the baſe, often knee-jointed. Leaves wide, ſomewhat villoſe. Sheath crowned with little briſtles. Panicle elongated, narrow. Pedunckes capillary, flexuoſe. Spikelets compreſſed, linear-ſubulate, duſky purple, cloſely imbricate in a double row. Outer calyx from eight to fifteen-flowered. Outer glumes of the calyxes keeled, bluntiſh.

Native of Switzerland, Dauphiné, Spain, Italy, on walls; alſo of Barbary and Siberia.—Introduced in 1776, by Mr. Thouin[b].

26. This graſs forms a turf. Root-leaves two inches long, linear, ſmooth; culm-leaves only half an inch in length. Ligule large, truncate. Culm quite ſimple. Panicle ſqueezed cloſe. Corollas nerveleſs, acute, pubeſcent at the baſe, of a duſky violet colour, with a membranaceous margin.

Native of Baden on the rocks by the hot baths in lower Auſtria and Mansfield. Perennial[c].

27. This is an extremely handſome Graſs. Culms of the ſame ſize with thoſe of Wheat, ſimple. Raceme ſimple, a foot long, compoſed of alternate, quite ſimple, equal pedunckes, longitudinally pinnate on both ſides from the baſe to the tip. Flowers ſeſſile, approximating, compreſſed, equal, flatted as in Cyperus. Glumes compreſſed, keeled, ſharpiſh, ovate[d].

Culms two feet high, ſolitary, round, erect, with diſtich reflex leaves at the baſe, and two or three convoluted leaves on the culm. Panicle often longer than the culm, remarkable for its blood-red colour in flowering-time. Pedunckes whorled in threes, horizontal, gradually ſhorter upwards. Spikelets crowded, numerous, many or about ten-flowered. Calycine valves unequal. Corolline valves acute, keeled[e].

Native of Egypt and the Eaſt Indies.

28. Spikelets ſhort, like thoſe of Briza; but the valves acute and keeled. Calyx of the lower flowers of the panicle four-valved, of the upper two-valved. The lower flowers four-flowered, the upper eight, ten or twelve-flowered. This is a middle graſs between Poa, Briza and Uniola. It was found in the Eaſt Indies by Koenig[f].

29. 30. Theſe were found at the Cape of Good Hope by Thunberg.

31. Branches of the panicle in whorls, branched, much longer than in Poa (Briza) Eragroſtis. Spikelets very numerous and narrow: the calyx and lower glumes often falling. Culms proſtrate and more than a foot in length. This graſs reſembles Poa (Briza) Eragroſtis, in every thing except the panicle and ſpikelets. It is annual, and native of Spain, flowering there in july[g].

32. Culm baked at top, firm. Leaves acute. Sheath without any membranaceous crown. Flowers looſely panicled. Pedunckes long, capillary, angular, flexuoſe, rough, branched, ſolitary in twos or threes. Rachis flexuoſe, angular, rough. Spikelets pedicelled, blunt, greeniſh-brown. Outer calyx eight to ten-flowered; glumes unequal, ſharpiſh. The outer glume of the inner calyxes keeled, larger, incloſing the other. Anthers very ſmall. Seed very ſmall, oblong. It is allied to P. verticillata, but the ſpikelets are twice as wide, the culms are erect, and the ſheaths have no ligule or ſtipule. Root perennial.

Native of Barbary, near La Calle[h].

33. Root annual. Culm ſlender, a little compreſſed, branched, procumbent at bottom, bent in at the knots. Leaves ſublinear, acuminate, ſheathing, roughiſh at the edges with very minute toothlets. Panicle on capillary compreſſed ſpreading rachiſes. Spikelets oblong, blunt, from four to ſix-flowered. Calycine valves lanceolate, acuminate, erect, concave, compreſſed, whitiſh with a green back, appearing obſolerely toothletted when magnified; one longer than the other. Corolline valves like the others. Florets alternate on the rachis, which is flexuoſe arch-wiſe. Stigmas purple. The whole plant is very ſmooth[i].

It is from the grain of this plant that the common bread in Abyſſinia is prepared; that made from wheat being uſed only by the ſuperior ranks. The flour of the beſt kind of Teff is, according to Mr. Bruce, as white as that of wheat, and is very light and eaſily digeſted; other kinds are of a browner and coarſer quality: that which grows on light ground is accounted the beſt. The manner of making the Teff bread is by taking a broad earthen jar, and having made the flour into a lump with water, they put it into the jar, and let it ſtand at ſome diſtance from the fire till it begins to ferment or turn ſour, and then bake it into cakes of a circular form, and about two feet in diameter: it is of a ſpongy ſoft quality, and a hot diſagreeable ſouriſh taſte. From the ſame bread, by being well toaſted, and infuſed in water for ſome days, is prepared the common beer of that country, which is called by the name of bouza[k].

Cultivated in Abyſſinia. Introduced here in 1775, by James Bruce, Eſq. It flowers in auguſt and ſeptember[l].

34. Culm from ſix inches to two feet in length, decumbent at the baſe, proſtrate, filiform. Leaves long, very narrow, erect, with the ſheaths ſomewhat hairy. Panicle with very long diffuſed branches. Florets diſtant, pedunceled, patulous, minute. Calyxes four or five-flowered: glumes awnleſs, acute. Corolline glumes more diſtant, oblong, acute. Anthers purple. Stigmas villoſe, purpliſh. Seed roundiſh, ſhining. Common in the Weſt Indies[m], Virginia and Canada. Introduced, according to the Kew catalogue, by Monſ. Thouin, in 1781.

The graſs in the meadows round Montreal, ſays Kalm, is chiefly the *Poa capillaris*. It is very ſlender, grows very cloſe, and ſucceeds even on the drieſt hills. It is however not rich in foliage, and the ſlender ſtalk is chiefly uſeful for hay. Many ſorts of graſs in Sweden make infinitely finer meadows than this.

Kalm informs us, in another paſſage[n], that the high meadows in Canada are excellent, and far preferable to thoſe round Philadelphia. The farther he advanced northward, the finer he found them, and the turf upon them better and cloſer. Almoſt all the crop was *Poa anguſtifolia*, or narrow-leaved Meadow-graſs and *Trifolium repens*, white or Dutch Clover. The ſpikelets of the former contained three or four flowers, ſo exceedingly ſmall, that the plant might eaſily be taken for an *Agroſtis*, and the ſeeds have ſmall downy hairs at the bottom, as in *trivialis* and *pratenſis*. It is pretty tall, but has very thin ſtalks; the ground however is

[a] Villars. [b] Hort. kew. [c] Willdenow. [d] Linn. ſpec. [e] Retz. [f] Idem. [g] Deſfontaines. [h] Jacqu. miſc. [i] Bruce. [k] Hort. kew [l] Travels, 3. 136. [m] Swartz. [n] Kalm.

quite

quite covered with the Clover, and both together make very fine meadows.

35. Culm sheathed with leaves, round, striated, smooth, upright, two feet high and more. Branches alternate, simple. Leaves ensiform, narrow, striated, shorter than the culm, a span in length. Sheaths long, without any hairs. Panicle from erect spreading, very much branched, a foot long. Rachis angular, striated, smooth. Pedicels capillary, branched, flexuose. Spikelets erect, from five to nine-flowered, subpellucid.—It differs from *P. capillaris* in the number of flowers, all smooth, in the smoothness of the leaves, not hairy even at the base, and in the uprightness and superior height of the culm. Native of Japan, in Kosido and near Nagasaki[1].

36. Flowers by no means sessile, but pedicelled, and more remote and elongated than in the *chinensis*. Calyx four-flowered, shorter than the flowers, with the keel ciliate. Rachis rough. Leaves and sheaths naked[2]. Native of the East Indies, in sandy ground.

37. Leaves hairy; especially at the sheaths. Rachis not rough. Flowers pedicelled, not sessile, almost pressed close to the rachis and imbricate. It varies with two, three and four-flowered calyxes, no less than in height[3].

Culm two feet high, slender, round, almost upright. Leaves lanceolate, smooth. Panicle oblong, with the branches quite simple and spreading. Calyxes six-flowered. Florets imbricate[4]. Native of India, China and Cochinchina.

38. Culms a foot and half high, ascending, even, the thickness of a pigeon's quill, with very swelling joints, often three in number. Leaves somewhat rugged, even underneath, longer than the internodes, rugged on the edge, and having a few erect hairs towards the base. Sheaths even. No ligule or stipule at the opening. Panicle spreading like that of *Milium effusum*. Peduncles, when the flowering is part contracted into a raceme. Spikelets lanceolate, twelve or fourteen-flowered. Florets diaphanous, with a dot (from an anther) within of a dusky colour, and a green streak on each side. Corolline glumes ovate, sharpish, even, much resembling those of the calyx. Native of Malabar[5].

36. Culms from two to three feet high, round, erect, simple. Leaves narrow, short. Branches of the panicle in half whorls. Spikelets reddish or whitish green, linear, containing about ten florets. The outer valve of the corolla is bent down at the tip and has the margins reverfed.

Native of the East Indies. Koenig fent it from Tranquebar, where it is frequent on the borders of fields, and in Paddy-grounds that are not over wet[6].

40. Root annual. Culms even, proftrate, branched at bottom. Leaves even, with a rugged edge, and a hairy opening. Panicle fpreading very much. Flowers oblong, blunt, purplifh, with a green line on each fide; the margin appearing to be ciliate, when examined with a magnifier[7].

It is obferved by Retzius, that not only the leaves are hairy at the throat or opening, but that the whole panicle at the bafe of the peduncles has bundles of long white hairs, from three to fixteen in number.

Native of the Eaft Indies. Introduced in 1781, by Monf. Thouin. It flowers in july and auguft[8].

41. Root perennial, creeping. Culms decumbent at the bafe, from fix inches to a foot in height, very fmooth, round, ftriated, leafy. Leaves rolled in, fo as to refemble thofe of rufhes, glaucous, acute, with long fheaths. Stipule blunt, but fometimes fharpifh. Panicle upright, ftrict, or little fpreading; branches commonly in pairs, angular, rugged, a little flexuofe, racemed, fpreading when in flower, and afterwards erect, fometimes divaricating, as in *P. diffans*, to which it is very nearly allied; differing however in having the root creeping, the florets longer, fharper, and by no means retufe. Spikelets linear, fmooth, purplifh, five-flowered or thereabouts (three to feven or eight. *Hudf.*). Calycine glumes unequal, ovate, fharpifh, keeled; outer three-nerved. Florets fomewhat remote, oblong, fubcylindrical, bluntifh but not retufe, fcarce apparently five-nerved, lefs fcarioſe at the tip; inner glumes rugged at the edge, emarginate at the tip[9]. Inner valve of the corolla very minutely ferrulated.

Mr. Lightfoot remarks, that it is nearly related to *Feſtuca* (*Poa*) *fluitans*, and that perhaps the fea-water may occafion the difference. But this opinion is not probable; for the outer and larger valve of the corolla in this plant wants the ribs, which are fo ſtrongly marked in *F. fluitans*; the inner valve wants the open cleft at the end; and *F. fluitans*, examined whilſt growing in the falt marſhes at Lymington, was found to vary but little from that growing in inland places[10].

It is obferved by Willdenow, that in the wild plant, the panicle is fqueezed clofe, narrow, and directed one way, with fpikelets having from four to eight flowers; but in a garden, the panicle is divaricate, and the fpikelets have from five to twelve flowers.

Native of Denmark, Britain, Germany and France, on fandy coafts, and in falt marſhes. About Yarmouth; between Briſtol and the Hot-wells; near the canal from Droitwich to the Severn, meadows near Wifbeech, &c. &c. In Scotland, in the iſland of Oranſa, in Skye, at Loch-Broom in Roſſſhire, &c. It flowers in july.

42. Root fibrous, forming a turf. Herb glaucous. Culms feveral, more or leſs proſtrate, about a ſpan long, leafy, ſmooth, bent at the joints. Leaves widiſh, acute, flat, nerved, ſomewhat rugged, with very long ſheaths. Stipule ſharpiſh, torn. Panicle rigid, leaning to one ſide (ſecunda,) ſemicylindrical, its main and partial ſtalks (rachis ramuliquæ) nearly round, rugged. Spikelets two-ranked (diſtichæ,) ſeſſile, lanceolate, four or five-flowered, glaucous, ſmooth. Calyx-valves blunt, very unequal, keeled; the outermoſt having five ribs. Florets bluntiſh, five-nerved, membranous and torn at their apex; their inner valves ciliated[11].

Dr. Smith affirms that this graſs has an annual root. On the contrary, Mr. Curtis ſays, "from the ſame root, which is clearly *perennial*, we have, as in *Poa annua*, young ſhoots and ripe ſeeds. However *P. procumbens* ſeems to be no more perennial than that.

We may add, from Mr. Curtis's deſcription, that the ſtems are from four to ſix inches or more in length, having two or three joints, flattened towards the panicle. Leaves ſhort, two lines broad, the edges very minutely ferrulate. Stipule ſhort, embracing, ſomewhat pointed, white. Sheath glofly on the inſide; the outer ſurface the ſame as that of the leaves. Panicle about two inches long, ſomewhat ovate, now and then bent a little backwards: the branches in pairs, unequal, the outer one largeſt: in the lower branches a ſingle ſpikelet is moſt commonly placed in the middle betwixt them; in impoveriſhed ſpecimens, a ſpikelet often holds the place of a branch. Common pedunceles round, naked, crooked, marked at the baſe on the upper ſide with a glandular ſubſtance. Rachis round, ſmooth, with two grooves on the inſide. Spikelets in the larger branches about ſix, in the ſmaller four, ſomewhat linear, roundiſh, ſlightly flattened, equidiſtant. Florets obtuſe, hairy at the baſe. Calyx-valves green edged with white, ſomewhat blunt. Corolla-valves almoſt equal; the outer rather larger and five-ribbed; the inner narrower and two-ribbed; the ribs edged with hairs. Germ obovate, pale green. Styles ſpreading and ramified quite to the baſe. Nectary, two ſmall tranſparent glumes, tumid and fleſhy at the baſe, a little longer than the germ. Seed oblong, ſmooth, incloſed in the glumes.

In general habit it comes near to *P. annua*; it bears an affinity alſo to *P. rigida*; but from thoſe and all the other ſpecies it is ſufficiently diſtinct. The ſtalks are for the moſt part procumbent; but this procumbence does not appear to originate in the uſual way, from the weakneſs of the ſtalk, but from its being bent downward at a joint near its baſe; as every ſtem

[1] Thunberg. [2] Retz. [3] Idem. [4] Loureiro. [5] Linn. ſuppl. [6] Retz. [7] Linn. [8] Hort. kew. [9] Smith. [10] Withering. [11] Smith.

is not thus acted on, ſome are frequently found nearly upright: the foliage is of a glaucous hue, and if examined with a magnifier, is found to be covered with numerous rough ſilvery particles; the panicle has a greater degree of rigidity than that of *P. annua*; the ſpikelets are much longer, leſs flat, and more regularly diſtant from each other; and each floret is ciliated at its baſe.

This new graſs is deſcribed and figured in the laſt number of the *Flora Londinenſis* that Mr. Curtis publiſhed.

Dr. Withering remarks, that this has not the bordered fruit-ſtalk of *P. rigida*. He has figured it under the name of *P. rupeſtris*; and deſcribes it as four or five inches high; the culm knee-bent in the upper joint, ſheathed up to the panicle; leaves ſhort, broad, ribbed; panicle an inch and half long, nearly one inch broad; calyx three or four-flowered, with the outer valve three-ribbed; valves of the corolla blunt.

Dr. Smith obſerves, that *Cynoſurus durus*, which is undoubtedly a *Poa*, is very nearly allied to this; ſcarcely differing from it except in its more rigid habit, more ſimple panicle, its flexuoſe flatted ſmooth unſtreaked rachis, and the outer calycine glumes nine-nerved.

He informs us that Dr. Goodenough ſuſpects Mr. Hudſon's full deſcription under his *P. maritima* may belong to this plant.

He obſerves farther, that *P. procumbens*, with *maritima*, *diſtans*, *Feſtuca fluitans*, and *Cynoſurus durus*, form a very natural tribe of *Poa*, with blunt florets, whoſe valves are ribbed, and whoſe ſpikelets are ſcarcely ſo truly ovate as the character of this genus requires. They are joined to the other ſpecies by means of *P. rigida* and *compreſſa*, and, no doubt, form a natural genus with them.

Mr. Curtis firſt diſcovered this graſs in the autumn of 1793, at the foot of St. Vincent's rocks, on the edge of the river. Sir Thomas Frankland found it growing in ſome plenty in the inundated parts of the waſte ground weſt of the wet dock, below Cliſton; and afterwards abundantly on the pier at Scarborough, within the ſpray of the ſea. Mr. Curtis was informed, that it had alſo been found on the Eſſex coaſt. He ſays, that culture produces little alteration in its appearance.

43. Root annual, furniſhed with few fibres. Culms ſeveral, about four inches high, (or from four to eight) almoſt upright, but in maritime ſituations often proſtrate, rigid, round, purpliſh, very ſmooth and ſhining, leafy at the baſe, with two knots or joints. Leaves acute, often involute-ſetaceous, nerved, very ſmooth underneath, rugged above, the length of the ſheath, nearly upright. Sheath ſmooth and very finely grooved. Stipule ſhort, obtuſe, jagged at the end. Panicle rigid, lanceolate, an inch and half to near three inches long, directed one way in a double row, with a flexuoſe winged rachis, and rugged angles. Spikelets linear, pedicelled, ſmooth, from four to eight or ten-flowered. Calycine glumes nearly equal, keeled, acute, appearing roughiſh when viewed with a magnifier. Florets bluntiſh, cylindrical, ſcarcely keeled, altogether nerveleſs, rugged towards the tip; inner glumes ciliate. Filaments the length of the corolla, anthers very minute and ſhort. Nectary, two ſmall glumes, ovate-acute, the length of the germ, viſible only by the help of a microſcope. Germ turbinate; ſtyles branched to the bottom. Seed ovate-acute, convex on one ſide, concave on the other [a].

In *Syſtema Vegetabilium* theſe marks of diſcrimination are given.—Culm rigid, very ſhort. Panicle lanceolate, rigid, decompounded: branches alternate, alternately ſpikeletted; pedicels rigid, ſhorter than the ſpike. Spikelets linear, acute, with eight flowers or thereabouts. Florets ſharpiſh, ſomewhat ſcarioſe at the tip. Calyx keeled.

Dr. Withering remarks, that this may be diſtinguiſhed from all the other ſpecies by the principal or main fruit ſtalk (rachis) being broad on the ſide oppoſite to the direction of the branches, convex, and edged with a paler green border.

Mr. Curtis obſerves, that in dry and barren ſituations, the ſtalks ſometimes are found ſimple, the panicle alſo not branched, and the ſpikelets, inſtead of containing about eight flowers, have no more than three or four. In this ſtate Scheuchzer makes another ſpecies of it. This alteration, from an exceſs or ſcantineſs of nouriſhment, is what moſt plants are ſubject to; and to form ſpecies from ſuch a cauſe, is to multiply plants without end. A complete knowledge of a plant, (particularly of a graſs,) is only to be attained, by obſerving it at the different periods of its growth, in all the various ſituations in which it occurs.

Native of England, Holland, France, Italy and Germany; alſo in Barbary; in dry ſandy or ſtony places, on walls and roofs; flowering from may to auguſt.

44. See the deſcription of this graſs under *Feſtuca ſpinoſa*.

45. Root perennial, creeping, conſiſting of downy fibres, thrown out from the loweſt part of the ſtem, which is decumbent at the baſe, then riſes obliquely, and is upright at top; where it is naked; at bottom it is leafy; the firſt or lower joints are bent, the uppermoſt very long; it is ſtriated, ſmooth and about a foot high, and is very much compreſſed. Leaves flat, acute, of a glaucous green, ſmooth and even. Sheaths the length of the leaves, ancipital, ſtriated, a little ventricoſe. Stipule ſhort, bluntiſh. Panicle glaucous, upright, directed one way, bluntiſh, condenſed, two inches long; with the rachis from roundiſh-flatted; and all the branchlets at firſt cloſe and erect, acutely angular and rough, a little zigzag; as they flower they ſpread conſiderably, but immediately after the diſcharge of the pollen they become again cloſe-preſſed to the main branch, ſo that the upper part of the panicle looks as if it expanded firſt. By this mark the graſs may be known at a diſtance. Spikelets ſubſeſſile, ovate or ovate-lanceolate, much larger than thoſe of *P. pratenſis*. Calycine glumes almoſt equal, ovate, nerved. Florets from three to nine (moſtly three or four, Linneus ſays ſix,) cloſely imbricate, ovate, angular, three-nerved, bluntiſh, purple below the tip, which is ſilvery and ſcarioſe, at the baſe connected by very fine, complicated, ſhorter villoſe hairs [c]. Dr. Withering ſays they are rarely woolly at the baſe.

Native of moſt parts of Europe, in dry paſtures, on the tops of walls that are a little covered with earth, on houſe-tops, and in other very dry places; where it may be found in flower from june to ſeptember, and may be eaſily diſtinguiſhed by its compreſſed ſtem [d].—It is alſo found in North America, where it has uſually three florets in a calyx; the European has commonly more, but the habit and ſtructure is the ſame in both [e].

This Graſs can ſcarcely be put to any agricultural uſe, though all cattle eat it; for it does not thrive in moiſt or manured ground, and there are many better graſſes for dry ſituations [f].

46. 47. Found by Thunberg at the Cape of Good Hope.

48. Culm evidently compreſſed. Panicle ſhort, contracted, ſpike-ſhaped. Inner valve of the corollas linear, curved, ciliate, like *P. ciliaris*; from which it differs in having the cilias many times ſmaller, the culms depreſſed, and the leaves ſhort, ſcarcely an inch in length [g].

According to Linneus, this graſs reſembles *P. compreſſa* very much, but the culm is round; the flowers are panicled, whorled, five-flowered; the anthers red, and the piſtils white.

Native of the Eaſt Indies, where it was obſerved by Koenig.—Retzius remarks, that Phœnix amboinica of Rumphius is very different from this, as appears both from his figure and deſcription.

49. Roots articulate, ſtoloniferous, producing bundles of leafy culms, a ſpan high, and round. Leaves filiform, convoluted, diſtich, ſhort, ſomewhat rigid.

[a] Curtis and Smith.
[b] Smith and Withering. [c] Smith. [d] Linn. [e] Engl. bot. [f] Retzius.

Panicle ovate-oblong, with ſhort ſpreading and very branching peduncles. Spikelets linear-lanceolate. One glume of the calyx longer than the other, which is very near the corolline glume: theſe latter are like thoſe of the preceding: that is, the inner valve is linear and recurved towards the outer valve, and a little ciliate on the back. The colour of the panicle is commonly greeniſh, ſometimes hoary, and not unfrequently blood-red.—The culms, peduncles, pedicels and calyxes are all ſo clammy, as to beſmear the feet and legs of thoſe who walk among this graſs, and cover them with the glumes. It fills the air with an odour of turpentine that is not unpleaſant, eſpecially in the evening. Found in the dry gravelly ſoils of Malabar by Koenig[1].

50. Root creeping a little. Culms ſeveral, upright, a foot and half high, ſlender, ſlightly compreſſed, ſtriated, ſmooth. Leaves almoſt all on the ſtem, narrow, attenuate-briſtle-ſhaped, acute, ſtriated, the upper ones rough on both ſides and at the edge, the lower ones ſmooth underneath. Sheaths ſcarcely the length of the leaves, compreſſed, ſmoothiſh. Stipule very ſhort, crenate. Panicle almoſt upright, diffuſed; branches ſlender, half whorled, angular, rugged, often flexuoſe, more or leſs branched. Spikelets ſharp, ſhining a little, ſmooth. Calycine glumes almoſt equal, a little ſhorter than the ſpikelet, lanceolate, acuminate, three-nerved, rugged on the keel towards the tip. Florets two to four, approximating, lanceolate, acute, ſcarce apparently five-nerved, membranaceous on the edge and at the tip, more or leſs ſilky on the back, ſomewhat hairy at the baſe, but free, and not connected by bundles of villoſe hairs that admit of being drawn out, as in *pratenſis* and *trivialis*: inner valves acute, keeled within, ſubpubeſcent on the margin.

This is the *Poa anguſtifolia nemoralis* of Hudſon.

β. Has a firmer habit, the ſtem and leaves leſs attenuated, the panicle denſer, the florets commonly more numerous. It has the appearance of *P. pratenſis* or *trivialis*; but it is diſtinguiſhed by the florets being unconnected, though hairy at the baſe, more acute, and leſs nerved; and by the ſtipule being very ſhort, ſubcrenate or ciliate: inſomuch that it cannot by any means be aſſociated with them.

This is *P. anguſtifolia* α. of Hudſon; the ſecond variety of *pratenſis* in Withering; and ſeems to be *P. trivialis* of Leers[m].

Native of many parts of Europe, in woods and ſhady places: with us it is more common in the northern parts of the iſland. It flowers in june.

51. This is a very ſmooth graſs, two feet high and more, with a thick culm. The panicle ſcarcely iſſues from the ſheath of the upper leaf. Peduncles long, ſtrict. Calyxes acute, three-flowered, naked, ſhorter than the flowers, alternate, ſeſſile. Obſerved by Koenig in the Eaſt Indies[n].

52. Found by Thunberg at the Cape of Good Hope.

53. Root perennial, fibrous, whitiſh, from which ariſe in cluſters a ſort of bulbs, involved in ſeveral whitiſh or whitiſh brown coats, which are the ſheaths of the leaves, ſtretched out almoſt an inch in length, and produce bundles of leaves, or elſe the culms. Culm a foot high, ſlender, ſmooth, erect, leafy. Leaves ſhort, linear, channelled, bluciſh: ſtem-leaves very ſhort, with long ſtriated ſheaths. Stipule ſhort, bluntiſh. Panicle ovate. Spikelets broad ovate, compreſſed, glaucous, variegated with the colour of dried vine leaves, commonly four-flowered. Calycine glumes ovate, three-nerved, with the keel rugged at the tip, ſilky at the edge, whitiſh. Florets lanceolate, ſilky towards the edge, connected by complicated villoſe hairs at the baſe[o].

Native of Sweden, Germany, Switzerland, France, Spain, Barbary and the Levant. Hudſon found it near Clapham in Surrey, and on his authority it reſts, that it is a native of England. The above deſcription is from the ſpecimen in the Linnean herbarium.

Deſfontaines ſays, that the panicle is looſiſh and purple; that there are ſeveral unequal capillary peduncles from the ſame point; that the ſpikelets are three or four-flowered; that the outer valve of the corolla is mucronate; and that the flowers are often bulbiferous.

54. This graſs is a middle ſpecies between *Poa*, *Cynoſurus* and *Triticum*; on account of the form of the ſpikelets (which are from three to ſix-flowered) it belongs to this genus, although it is different from the other Poas in its habit[p].

Native of Carinthia, Switzerland and Italy, on the tops of the mountains.

55. The whole of this graſs is ſmooth. Culm filiform. Spikelets lanceolate, compreſſed; lower eleven-flowered; loweſt ſometimes three-flowered; upper ones nineteen-flowered. Rachis flat on one ſide, convex on the other. Outer valve of the corolla ovate, keeled, bluntiſh, one-nerved on both ſides. This ſpecies is eaſily diſtinguiſhed from the reſt by its ſimple ſpike a long ſpan in length, with the upper ſpikelets recurved. Native of the Eaſt Indies[q].

56. Culms infracted, ſmooth, covered with the ſheaths of the leaves. Leaves alternate, two inches long, ſtriated, glaucous-green. Sheaths ſtriated, with the mouth bearded, ſhorter than the leaves. Spike an inch and half long, diſtich, almoſt ſimple. Spikelets compreſſed, ſmooth, an inch in length, twenty-five-flowered and more; lower ones with two-flowered pedicels. Valves of the corolla ſcarcely ciliate at the edge[r].

Vahl had it from the Paris garden; and it is ſuppoſed to be a native of Lima.

57. Culms ſeveral, aſcending from the baſe, a hand in height, covered on every ſide with the ſheaths of the leaves. Leaves linear, narrow, even, with thicker ſheaths. Raceme contracted into a ſpike, almoſt the length of the culm, unequal. Outer valve of the calyx ſhort, ovate; inner double the length. Florets diſtant, with the outer valve oblong, acuminate. Anthers yellow, cloven at both ends. Styles feathered, white. It has the habit of a Feſtuca.

Native of Portugal; where it was obſerved by Vandelli[s].

58. Root perennial, fibrous. Culms ſeveral, decumbent at the baſe, about a foot high, (a ſpan, a foot, or a foot and half, *Curtis*: from nine to twelve inches or more, *With.*) round, leafy, ſtriated, ſmooth. Leaves with long ſheaths, ſharpiſh, even, glaucous, flat; the root-leaves a little rolled in. Stipule obtuſe, emarginate. Panicle erect, with the branches in half whorls, angular, rugged, ſomewhat flexuoſe, ſpiked or branched, of various lengths, finally very much bent back. Spikelets linear, ſmooth, from four to ſeven-flowered (five-flowered more or leſs, *Curtis*: five or ſix-flowered, *With.*) variegated with white or purple. Calyx unequal, keeled, ſmall, blunt, membranous at the edge, the outer glume obſoletely three-nerved. Florets remote, almoſt as in *P. aquatica*, ſubcylindrical, very blunt, retuſe, five-nerved, ſcarioſe at the tip; with the inner glumes emarginate[t].

Culms bent at the lower joint. Root-leaves ſhort, ſtiffiſh, ſlender, ſmooth. Stem-leaves ſheathing, rough at the edges near the end. Stipule ſhort, broad. Panicle about three inches long, and two inches wide: branches in diſtant whorls, four or three in a whorl, greatly ſpreading, when ripe more ſo. Calyx ſmooth, one valve twice as large as the other. Corolla ſmooth, ſhining at the edge and the point, not woolly at the baſe, unequal, blunt[u].

Culms oblique, ſlightly elbowed below. Stem-leaves from upright ſpreading, with a ſmooth ſheath. Panicle a hand's breadth or half a foot in length; the lowermoſt branches about five in number. Valves of the calyx ovate, concave. Valves of the corolla nearly equal, but the outer a little larger, concave, bluntiſh; the inner uſually bifid, and, when magnified, appearing to be edged on each ſide with hairs. Germ obovate. Styles ſpreading, branched to the bottom. Nectary, compoſed of two ſmall glumes, ovate and pointed, at the baſe of the germ.

[1] Retzius. [m] Smith. [n] Retzius. [o] Smith. [p] Willdenow. [q] Vahl. [r] Idem. [s] Linn. mant. [t] Smith. [u] Withering.

Though at firſt ſight this graſs bears a near reſemblance to *P. annua*, and no doubt is often miſtaken for it; yet it is conſiderably taller, its leaves narrower in proportion and much more glaucous, its ſpikelets alſo are much narrower as well as longer, and of courſe contain many more florets, which are for the moſt part prettily variegated with pale green and purple; but the chief character which diſtinguiſhes this from *P. annua* and all the other ſpecies, is to be drawn from the branches of the panicle; theſe, as the plant goes out of bloom, are reflected or ſtretched out backwards, ſo as ſometimes to touch the culm: this is effected by little tubercles at the baſe of the branches on their upper ſides only, which increaſing in ſize as the plant advances in its flowering, forces them backwards[s].

Linneus remarks, that the florets are ſo diſtant, that it might eaſily be taken for a ſpecies of *Agroſtis*, if the calyx were not examined.

According to Vahl, *P. divaricata* of Gouan is the ſame ſpecies with this; but the ſpecimens ſent by Jacquin agree exactly with *P. ſulina*, which is certainly very different from *P. divaricata*[t].

Native of the Palatinate, Sileſia, Auſtria and England. Found by Hudſon in Devonſhire, Kent, Yorkſhire and Lancaſhire, on a ſandy ſoil. Mr. Curtis ſays it is common in paſtures and by road ſides, on our ſea coaſts; but that, like *Plantago maritima*, and ſome other plants, it is not confined to maritime ſituations, for he found it, in july 1786, among the graſſy herbage, on the right hand of the horſe-road, leading up the hill to Hampſtead, in tolerable plenty.

Mr. Curtis farther informs us, that ſix years culture made no alteration in the appearance of this graſs, that it flowers from june to ſeptember, and that there does not appear to be ſufficient merit in it to recommend it for agricultural purpoſes.

59. Culms ſeveral, a hand in height, with one or two leaves on them, white or reddiſh. Leaves two or three inches long, with wide ſheaths. Panicle ſubdichotomous, conſiſting of ſix or ſeven branches in pairs, ſpreading out at right angles. Lower branches trichotomous, upper twice trifid. Pedicels more ſwelling at the tip, very ſhort. Calycine glumes hardly to be diſtinguiſhed by the naked eye, unleſs when the florets fall off, and then the pedicels appear forked with the permanent calyxes. Florets acuminate, in threes or fours, a third of a line in length, membranaceous and whitiſh at the tip, little diſtant from each other[u].

It is an annual graſs, native of Montpelier. Desfontaines found this elegant graſs flowering early in the ſpring, in cultivated fields near Maſcar, in Barbary.

He deſcribes the culms as filiform, erect, ſmooth; the leaves awl-ſhaped and ſmooth; the panicle very much branched, the branches capillary, ſolitary in twos or threes, unequal, ſpreading, divaricate, branched at the tip, ſubtrichotomous, branchlets unequal. Pedicels gradually thickening upwards. Spikelets oblong, ſmall, looſiſh, greeniſh white, diſpoſed in looſe bundles. Outer calyx very ſmall; glumes unequal, membranaceous. Inner calyxes of the ſame ſhape. The florets fall off when the ſeed is ripe, leaving the outer calyx on.

60. Root ceſpitoſe, compoſed of ſimple tomentoſe fibres. Culms ſolitary, ſimple, erect, a ſpan high, even, leafy eſpecially at the baſe. Leaves linear, ſmooth, ſomewhat rigid, with long ſheaths and a ſhort ſtipule. Panicle erect, denſe, green and ſilvery, with pubeſcent branched peduncles, and very ſhort erect pedicels. Flowers ovate-lanceolate. Calyx two-flowered, ſeldom three-flowered, never four-flowered, (ſeldom four-flowered, *Leers*) obſoletely pubeſcent, compoſed of two unequal, acute, keeled glumes, nerved on both ſides, ſcarioſe on the edge, green on the back. Outer petals ſimilar to the calyx; inner much more ſlender and narrow, but a little ſhorter.—From the habit, this graſs ſhould be conſidered as an *Aira*, rather than a *Poa*; nor does the number of florets much ſtand in the way, there being for the moſt part only two: the point of the glumes is ſometimes extended into a ſhort awn[x].

Dr. Smith ſuſpects, that Linneus, in his *Syſtema Vegetabilium*, confounded ſome other graſs with this; and hence removed it to this genus; whereas in his *Species Plantarum* it ſtood among the *Airas*. I follow Willdenow, Pollich, Leers, Krocker, Desfontaines, and moſt of our own writers in continuing it here. Krocker approves of Linneus's alteration, on account of the ſpikelets being two or three-flowered, flat, acuminate, imbricate, like the *Poas*.

Native of Germany, Switzerland, France, England, Barbary, in dry paſtures, by way and wood ſides, in barren land, and ſometimes on walls; flowering from june to auguſt.

61. This ſpecies was raiſed from ſeed by Profeſſor Jacquin, and is an annual ſpecies, flowering all ſummer in the open air, but muſt be put into the ſtove in the winter. The ſtems are about a foot and half high; ſcarcely branched, generally proſtrate: the leaves have long ſheaths, and meaſure, excluſive of the ſheath, about ſix inches: the ſheath is hairy and roughiſh: the panicle terminal, contracted, unequally cylindric, and about an inch long, compoſed of lateral ramules thickly placed and preſſed to the general ſpike. The glumes contain from five to eight flowers, and are rather acute; the one ſomewhat ſhorter than the other, which is rather whitiſh and chaffy. The valves of the corolla are ſharp, aculeated on the back, and often purpliſh above. It is an annual graſs; native of Peru[y].

62. Found at the Cape of Good Hope by Thunberg.

63. Culm from two inches to half a foot in height, ſimple, ſlender, erect, ſmooth. Leaves linear, ſhort, even. Panicle or compound ſpike contracted, with ſhort branchlets preſſed cloſe. Florets ovate, of a cinereous ruſt colour, minute, ſhining, villoſe. Calycine glume from two to four-valved, from ſix to eight-flowered: valves equal, ovate, acute, keeled, awnleſs, beardleſs. Upper valve of the corolla ovate, obtuſe, not keeled, ciliate at the edge: lower valve keeled, entire at the edge, the keel appearing ſerrate when magnified, incloſing the upper one at the baſe. Anthers purple. Stigmas villoſe, pale. Seed oblong.

This is a middle ſpecies between *Briza* and *Poa*[z].

Linneus remarks, that the panicle is red, and the cilias of the glumes white[a].

Browne ſays, this little plant ſeldom riſes above ſix or ſeven inches, and is ſuſtained by a very ſlender weakly ſtalk; it is eaſily diſtinguiſhed by its delicate branches, fine leaves and downy head.

Native of Jamaica, (and other iſlands of the Weſt Indies, in dry ſandy grounds). Introduced in 1776, by Monſ. Thouin. It flowers in july and auguſt, and is annual[b].

64. Culms ſeveral, crowded, from ſix inches to a foot in height, filiform, leafy. Leaves from one to two inches long, linear, even, the opening of the ſheaths terminating in long white hairs. Peduncles branched, flexuoſe. Flowers numerous minute. Calyx almoſt equal, acute, keeled; outer valve appearing with a magnifying glaſs very minutely ciliate at the back, five or ſix-flowered. Outer glume of the corolla like the outer calycine valve, but a little larger: inner narrow, recurved, ciliate at the back, but with the cilias ſmaller than in *P. ciliaris*.

The flowers and ſeeds, in a magnifier, appear pellucid. This graſs differs from *P. ciliaris* in the form of the panicle; and the flowers as well as the cilias are ſmaller.

Native of the Eaſt Indies. Koenig ſent it from Tranquebar[c].

65. Culms ſeveral, a ſpan high, aſcending, kneejointed, with about three knots, leafy, ſomewhat angular at top, ſtriated, glaucoſcent. Leaves from erect ſpreading, flat, narrow, acute, rugged above, with all the ſheaths elongated, looſe, a little compreſſed, ſtriated, ſmooth; all the ſtipules lanceolate, acute, thoſe of the ſtem-leaves commonly jagged. Panicle ovate,

[s] Curtis. [t] Willdenow. [u] Gouan. [x] Smith. [y] Jacquin. [z] Swartz. [a] Syſt. veg. [b] Hort. kew. [c] Retzius.

abbreviated,

abbreviated, ſomewhat condenſed; branches in pairs, alternately branched, more or leſs flexuoſe at the baſe, angular above and rugged. Spikelets broad-ovate, compreſſed, glaucous, variegated with whitiſh and purple. Calycine glumes a little unequal, lanceolate-ovate, acute, ſcarcely ſickle-ſhaped, rugged along the keel. Florets lanceolate, ſharpiſh, naked at the edge, rugged along the keel, connected at the baſe by very fine complicated hairs: inner valves ſcarcely ciliate.

This is diſtinct from *P. alpina* in its glaucous colour, more leafy culm, narrower ſharper leaves, rugged above, with longer ſheaths, all the ſtipules of the ſame ſhape, the peduncles flexuoſe, the glumes narrower and connected, and the keel and edge not briſtly and ſilky.

Native of the Highlands of Scotland. Mr. Mackay found it on Ben Nevis. It is a perennial graſs, and flowers in july.

66. Root ſubceſpitoſe, perennial. Herb glaucous. Culm a foot high, erect, round, ſtriated, ſmoothiſh, towards the baſe leafy and having two knots; above ſimple, ſtraight, naked. Leaves lanceolate, bluntiſh, flat, levigated on the back next the baſe, but in other parts rugged. Sheaths the length of the leaves, ſtriated, ſomewhat rugged. Stipules very variable, ſometimes extremely ſhort, incloſed in the ſheath, ſometimes elongated, lanceolate, jagged, eſpecially on the ſtem-leaves. Panicle erect, very much branched, little elongated; branches half-whorled, angular, rugged; branchlets in pairs. Spikelets erect, variegated with blueiſh, whitiſh and purple. Calycine glumes almoſt equal, lanceolate, acute, keeled, obſoletely three-nerved, rugged towards the tip. Florets ſomewhat remote, lanceolate, obtuſe, ſcarioſe at the tip, torn, woolly at the back, ſcarioſe at the edge, ſilky, free at the baſe; inner valves rugged at the edge; rachis flexuoſe, villoſe.

It ſeems to be very different from *P. glauca* of Vahl in the *Flora Danica*; that approaches nearer to *P. nemoralis*[e].

It is probaby *P. glauca* of Withering, though he refers to Vahl. He deſcribes it as ten inches high, the ſtem ſmoothiſh, the leaves rough at the edges, the panicle two inches long, hardly one broad, few-flowered, but little branched, three or four florets in each ſpikelet.

Mr. Fairbairn had it from Scotland. Mr. Mackay found it in the mountains of Bredalbane. It flowers in june and july[b].

67. Height of *P. anguſtifolia*; the leaves much longer, but involuted, ſtriated and aſh-coloured within; panicle of a pleaſant purple colour; corolla lanceolate, ciliate at the baſe; ſpikelets compreſſed. Perennial. Perhaps a variety of *P. anguſtifolia*.

68. Height about a foot. Leaves narrow, often dry at the time of fructification; panicles whitiſh and purple mixed, compoſed of ſpikes which grow in pairs, on waved or flexuoſe peduncles, one ſhorter than the other and nearer to the axis. Spikelets oblong, almoſt cylindrical. Glumes obtuſe, concave. Corollas purple at the baſe. The ſpikelets, in ſhape, reſemble thoſe of *Feſtuca fluitans*. It is perennial.

69. Height two feet. The leaves are not involuted and are wider. The panicles are more branched and open; the ſpikelets oblong, ſmooth but a little rugged. It is perennial, and is found in Dauphiné, with the two preceding, in ſtony places, with Rhododendron and other alpine plants[f].

70. Culms ſtraight, hard, with black knots. Leaves ſtraight, not more than a line wide. Panicle thin, not much diffuſed, violet-colour mixed with green, and of a golden colour on the upper glume. Calycine glumes unequal, mucronate. All parts of this graſs are hard. The ſpikelets are four times ſmaller than thoſe of *alpina*. Native of Switzerland and Piedmont.

71. Culm three feet high, erect. Leaves ſmooth, not more than three lines wide, rough from drawn through the fingers. Panicle a foot long, not much ſcattered, very thin; on looſely branched peduncles, naked for a long ſpace. Calycine valves unequal, mucronate. Florets ſeſſile and petioled. Glumes equal, long, ſlender, marked with lines, and having a white point. Styles large, feathered. All parts are green and ſmooth. The ſpikelets are much larger than in the other Poas, and this graſs has the appearance of an *Avena*, but there are no awns. Found by Monſ. de Sauſſure in Savoy, between Salenche and Chamouny[b].

PROPAGATION AND CULTURE.

See GRASS, MEADOW and PASTURE. Alſo *n.* 6. and *n.* 9. of this genus.

POA. See *Agroſtis*, *Aira*, *Briza*, *Bromus*, *Daſtylis*, *Feſtuca*, *Holcus*, *Melica*, *Triticum*.

Poa decumbens. See *Feſtuca decumbens*.

—— dulcis. See *Aira aquatica*.

—— dura. See *Cynoſurus durus*.

—— fluitans. See *Feſtuca fluitans*.

—— multiflora is *Briza Eragroſtis*.

—— ſicula. See *Triticum unioloides*.

POCELLARIA. See *Agaricus*.

POCKWOOD. See *Guaiacum*.

PODAGRARIA. See *Ægopodium*.]

PODOPHYLLUM. (*From* πους, ποδος, *a foot, and* φυλλον, *a leaf. The leaf reſembling the webbed foot of water-fowl.*)

Lin. gen. n. 646. *Reich. n.* 702. *Schreb. n.* 879. *Juſſ.* 235. Anapodophyllum. *Tournef. t.* 122.

Claſſ. 13. 1. Polyandria Monogynia.

Nat. order of *Rhoeadeæ*. *Ranunculaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* three-leaved, large, coloured, concave-erect: *leaflets* ovate, concave, deciduous.

COR. *Petals* nine orbicular, concave, plaited at the edge.

STAM. *Filaments* very many, very ſhort. *Anthers* oblong, large, erect.

PIST. *Germ* roundiſh. *Style* none. *Stigma* blunt, plaited.

PER. *Berry* ovate, crowned with the ſtigma, one-celled.

SEEDS very many, roundiſh. *Receptacle* free.

ESSENTIAL CHARACTER.

Cal. three-leaved. *Cor.* nine-petalled. *Berry* one-celled, crowned with the ſtigma.

SPECIES.

1. Podophyllum peltatum. *Duck's-foot* or *May-apple*.
Lin. ſpec. 723. *ſyſt.* 489. *Reich.* 2. 568. *hort. cliff.* 202. *upſ.* 137. *Gron. virg.* 57. *Trew. Ehret. t.* 29.
Anapodophyllum canadenſe. *Cateſb. car.* 1. *t.* 24.
Aconitifolia humilis, flore albo unico campanulato, fructu cynoſbati. *Mentz. pug. t.* 11.
Leaves peltate lobate.

[2. Podophyllum diphyllum.
Lin. ſpec. 723. *ſyſt.* 489. *Reich.* 2. 569.
Leaves binate ſemicordate.]

DESCRIPTIONS, &c.

1. This plant grows naturally in many parts of North America. The root is compoſed of many thick tubers which are faſtened together by fleſhy fibres, which ſpread, and propagate greatly under ground, ſending out many ſmaller fibres which ſtrike downward. In the ſpring ariſe ſeveral foot-ſtalks about ſix inches high, which divide into two ſmaller, each ſuſtaining one leaf, compoſed of five, ſix, or ſeven lobes, the five middle being deeply indented at the top; theſe join together at their baſe, where the foot-ſtalk meets, which is faſtened to the under ſide of the leaf like the handle of a target; the leaves are ſmooth, and of a light green. At the diviſion of the foot-ſtalk comes out the flower, with a large calyx covering it like a ſheath; the flower has nine pretty large white petals, which are roundiſh at the top, and plaited on their borders. The flowers appear in may, and when they fall off, the germ ſwells to a fruit of the ſize and ſhape of the common Hip or fruit of the wild Roſe. This is at firſt green, but when ripe changes to a yellow colour.

[It appears from Evelyn's Kalendar that it was cultivated here in 1664[i].

[a] Smith. [b] Idem. [c] Villars. [d] Haller. [e] Hort. kew.

2. This was ſent to Linnæus from Peter Collinſon, as a ſpecies of *Podophyllum*. He had it from Virginia. Linnæus doubts whether it may not be rather a ſpecies of *Sanguinaria*; ſince it has a ſingle binate leaf, a leafleſs radical ſcape, and an oblong capſule.]

PROPAGATION AND CULTURE.

1. This plant propagates ſo faſt by its creeping roots, that few perſons are at the trouble of ſowing the ſeeds. Every part of the roots will grow, ſo they may be annually parted, either in autumn when their leaves decay, or in the ſpring juſt before the roots begin to ſhoot; they require no other culture but to keep them clean from weeds. It loves a light loamy ſoil and a ſhady ſituation, and is ſo hardy as ſeldom to be injured by the froſt.

[POENOE. See *Valeria*.

POERINSH. See *Sapindus*.

POET'S CASIA. See *Oſyris*.

POHLIA.

Lin. gen. Schreb. n. 1649. *Hedw. muſc.* 1. *96.*

Claſſ. 24. 3. Cryptogamia Muſci.

GENERIC CHARACTER.

CAPS. ovate-oblong, placed on an obconical, narrower apophyſis. *Periſtome* double; *outer* with ſixteen broadiſh teeth; *inner* with a ſixteen-parted membrane.

MALES gemmaceous, on a diſtinct plant.

OBS. *This genus is included in Bryum of Linnæus.* Pohlia elongata of *Hedwig is* Bryum elongatum *of Withering, p.* 832.]

POINCIANA. (*So named by Tournefort, from De Poinci, governor of the Antilles.* Ab illuſtriſſimo viro D. de Poinci, inſularum Antillarum præfecto. *Tournef.*— *He is placed by Linnæus among the* Promotores.)

Swartz has united it with *Cæſalpinia*, which ſee.

[POISON-ASH. See *Rhus*.

POISON-NUT. See *Strychnos*.

POISON-OAK. See *Rhus*.]

POKE, Virginian. See *Phytolacca*.

POLEMONIUM. (Πολεμωνιον *of Dioſcorides: from* πολεμος, *war.*)

Lin. gen. n. 217. *Reich. n.* 233. *Schreb. n.* 289. *Tournef. t.* 61. *Juſſ.* 136. *Gærtn. t.* 62.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Campanaceæ*. *Polemonia*. Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, half-five-cleft, inferior, gobleted-ſhaped, acute, permanent.

COR. one-petalled, wheel-ſhaped. *Tube* ſhorter than the calyx, cloſed by five valves placed at the top. *Border* five-parted, wide, flat: *ſegments* roundiſh, blunt.

STAM. *Filaments* five inſerted into the valves of the tube, filiform, ſhorter than the corolla, inclining. *Anthers* roundiſh, incumbent.

PIST. *Germ* ovate, acute, ſuperior. *Style* filiform, the length of the corolla. *Stigma* trifid, revolute.

PER. *Capſule* three-cornered, ovate, three-celled, three-valved, opening three ways at top, covered. *Partitions* contrary to the valves.

SEEDS very many, irregular, ſharpiſh.

ESSENTIAL CHARACTER.

Cor. five-parted, the bottom cloſed by valves bearing the ſtamens. *Stigma* trifid. *Capſ.* three-celled, ſuperior.

SPECIES.

1. Polemonium cœruleum. *Common Polemonium.*

Lin. ſpec. 230. *ſyſt.* 205. *Reich.* 1. 453. *Willd.* 886. *fl. lapp. n.* 86. *ſuec. n.* 175. *hort. cliff.* 163. *Gærtn. fruct.* 1. 299. *Huſſ. angl.* 89. *Wither. acr. ed.* 3. 241. *Smith angl.* 234. *Engl. bot. t.* 14. *Fl. dan. t.* 255. *Hall. helv. n.* 665. *Hoffm. germ.* 70. *Roth. germ.* 1. 94. 2. 242. *Krock. ſileſ. n.* 309. *Sabb. hort.* 2. *t.* 82. *Kniph. cent.* 5. *n.* 68.

α. P. vulgare cœruleum. *Tournef. inſt.* 146. *Raii ſyn.* 288. *Blue-flowered Polemonium, Greek Valerian, Jacob's-ladder*, or *Ladder to Heaven.*

Valeriana cœrulea. *Bauh. pin.* 164.

V. græca. *Dod. pempt.* 352. 1. *Ger.* 918. 5. *emac.* 1076. 5. *Park. theat.* 123. 12. *Raii hiſt.* 1102. — quorundam flore cæruleo. *Bauh. hiſt.* 3. 212. 2. *Beſl. eyſt. eſtiv.* 9. *t.* 11. *f.* 2.

β. Flore albo. *White-flowered Polemonium* or *Greek Valerian. Bauh. hiſt.* 3. 212. *Beſl. eyſt. f.* 3. *Kniph. cent.* 5. *n.* 69. *&c.*

γ. P. calycibus lanatis. *Lin. upſ.* 40. *Gmel. ſib.* 4. 103. *t.* 50.

Leaves pinnate, flowers erect, calyxes longer than the tube of the corolla.

2. Polemonium reptans. *Creeping Polemonium* or *Greek Valerian.*

Lin. ſpec. 230. *ſyſt.* 205. *Reich.* 1. 453. *Willd.* 886. *Gron. virg.* 22. *Mill. fig.* 140. *t.* 209.

Leaves pinnate with ſeven leaflets, flowers terminating nodding.

[3. Polemonium dubium. *Doubtful Polemonium.*

Lin. ſpec. 231. *ſyſt.* 205. *Reich.* 1. 453. *Willd.* 887. *Gron. virg.* 142.

Lower leaves haſtate, upper lanceolate.

4. Polemonium Roelloides. *Roella-like Polemonium.*

Lin. ſyſt. 205. *Willd.* 887. *ſuppl.* 139. *Thunb. prodr.* 35.

Erect, ſtem filiform, leaves lanceolate ciliate, panicle few-flowered peduncled naked.

5. Polemonium Campanuloides. *Campanula-like Polemonium.*

Lin. ſyſt. 206. *Willd.* 887. *ſuppl.* 139. *Thunb. prodr.* 35.

Erect ſmooth, leaves linear-lanceolate entire erect, flowers terminating ſolitary.

DESCRIPTIONS, *&c.*

1. Root perennial, fibrous. Herb ſmooth. Stems upright, riſing to the height of eighteen or twenty inches, ſeldom more, leafy, panicled. Leaves alternate, unequally pinnate, many-paired; leaflets ellipticlanceolate, quite entire. Corolla between bell-ſhaped and wheel-ſhaped, blue. Calyx bell-ſhaped, half-five-cleft[a]: Gærtner ſays, five-toothed. Filaments dilated at the baſe and membranaceous. Capſule clothed with the calyx, ovate-globular, obſoletely three-grooved, thin, ſubpellucid. Seeds fix in each cell, in a double row, faſtened to the inner angle of the cell, variouſly angular, eroded on the ſurface, of a dark ruſt colour. Umbilicus on the middle of the belly[b].]

Mr. Miller remarks, that the lower leaves have eleven or twelve pairs of leaflets, beſides the odd one, that they are broadeſt at the baſe, end in points, and are ſeſſile; that the ſtem-leaves are of the ſame form, but decreaſe upwards in ſize; that the ſtalks are hollow, channelled, and terminated by bunches of flowers which ſit very cloſe, and are of a beautiful blue colour.

Beſides the variety with white flowers, which is very common, and frequently riſes from the ſeeds of the blue; (Linnæus ſays from the ſame root) he mentions another with variegated flowers; and a third with variegated leaves.

The flowers appear at the end of may, and the ſeeds ripen in auguſt.

[Native of Aſia, and of the north of Europe, in Germany, Switzerland, Sweden, Lapland, Denmark. Though very common with us in gardens, it is one of the plants moſt rarely found wild in this country. In the laſt century it was found in Yorkſhire, about Malham Cove, by Dr. Liſter, Mr. Ray and Dr. Richardſon; it has occurred there ſince to Mr. Wood and others; Mr. Gough gathered it in Gordale. In 1764, I found it near Matlock in Derbyſhire; it has ſince been found in the ſame county, near Bakewell by Mr. Whalely, and at the Lover's-leap, Buxton, by Mr. Wood.

Caſpar Bauhin remarks, that this plant has nothing in common with the Valerians except ſomething in the ſhape of the leaves.—It has not indeed the leaſt affinity in appearance, character, ſenſible qualities or medical virtues[c].]

2. The North American Polemonium, has creeping roots, by which it multiplies very faſt. The leaves have ſeldom more than three or four pairs of leaflets, which ſtand at a much greater diſtance from each other than

[a] Smith. [b] Gærtner. [c] Engl. bot.

than thoſe of the common ſort, and are of a darker green. The ſtalks riſe nine or ten inches high, ſending out branches their whole length. The flowers are produced in looſe bunches, on pretty long peduncles; they are ſmaller than thoſe of the common ſort, and of a lighter blue colour. [Linneus remarks that the flowers nod a little, having weaker pedicels; and are not ſtiff and upright, like thoſe of the preceding.

3. Style ſemibifid. The appearance is different from that of the Polemoniums, and the genus is doubtful. This, as well as the preceding, is a native of Virginia[r].

4. Found at the Cape of Good Hope by Thunberg.

5. This alſo is a native of the Cape. It very much reſembles Campanula perſicifolia, but the ſtigma is ſimple, which is the only difference of Polemonium, as two ſtigmas are of Roella[s].]

PROPAGATION AND CULTURE.

1. Sow the ſeeds in the ſpring, upon a bed of light earth: when they come up pretty ſtrong, prick them out into another bed of the ſame earth, four or five inches aſunder, ſhading and watering them until they have taken root; keep them clear from weeds until Michaelmas, and then tranſplant them into the borders of the pleaſure garden.

It is not of long duration; but by taking up the plants in autumn and parting them, they may be continued ſome years: but as ſeedling plants flower ſtronger than offſets, few perſons propagate them by ſlips.

The varieties may be continued by parting the roots at Michaelmas. They ſhould have a freſh light ſoil; if it be too rich, the roots will be apt to rot in winter, and the ſtripes on the leaves to go off.

2. The American ſort may be increaſed by ſeeds or offſets like the other, and is equally hardy, but much leſs beautiful.

[POLEMONIUM NYCTELEA. See *Ellisia*.

——— RUBRUM. See *Ipomœa*.

POLEY-MOUNTAIN. See *Teucrium*.]

POLIANTHES. (*From πολις a city, and ανθος a flower.* Flos urbanus.)

Lin. gen. n. 426. *Reich. n.* 460. *Schreb. n.* 576. *Juſſ.* 56.

Claſs. 6. 1. Hexandria Monogynia.

Nat. order of *Coronariæ*. *Narciſſi* Juſſ.

GENERIC CHARACTER.

CAL. none.

COR. one-petalled, funnel-form. *Tube* curved inwards, oblong. *Border* patulous, with ſix ovate ſegments.

STAM. *Filaments* ſix, thick, blunt, at the jaws of the corolla. *Anthers* linear, longer than the filaments.

PIST. *Germ* roundiſh, at the bottom of the corolla. *Style* filiform, moſtly ſhorter than the corolla. *Stigma* trifid, thickiſh, melliferous.

PER. *Capſule* roundiſh, obtuſely three-cornered, at the baſe involved in the corolla, three-celled, three-valved.

SEEDS very many, flat, incumbent in a double row, ſemiorbiculate.

ESSENTIAL CHARACTER.

Cor. funnel-form, curved in, equal. *Filam.* inſerted into the jaws of the corolla. *Germ* at the bottom of the corolla.

SPECIES.

1. Polianthes tuberoſa. *Tuberoſe.*

Lin. ſpec. 453. *ſyſt.* 335. *Reich.* 2. 76. *hort. cliff.* 127. *upſ.* 76. *fl. zeyl n.* 225. *Knipb. cent.* 11. *n.* 76. *Knorr. del.* 1. *t.* T. 12.

Hyacinthus indicus tuberoſus, flore narciſſi. *Baub. pin.* 47. *Rudb. elyſ.* 2. 39. *f.* 4.

H. ind. major, tub. rad. *Park. parad.* 111. *Raii hiſt.* 1164.

β. Hyacinthus indicus tuberoſus. *Ger. emac.* 115. 16. ——flore hyacinthi orientalis. *Baub. pin.* 47. *Rudb. elyſ.* 2. 39. *f.* 2.

H. ind. tuberoſa radice. *Clus. hiſt.* 1. 176. *Mor. hiſt.* 2. 376. *ſ.* 4. *t.* 12. *f.* 22.—minor. *Park. parad.* 111. *Raii hiſt.* 1164.

Amica nocturna. *Rumph. amb.* 5. 285. *t.* 98. *Flowers alternate.*

DESCRIPTION, *&c.*

The varieties of this are the Tuberoſe with a double flower, the ſtriped-leaved Tuberoſe, and the Tuberoſe with a ſmaller flower; the laſt is mentioned by ſeveral authors as a diſtinct ſpecies, but is certainly a variety. This is frequent in the ſouth of France, whence the roots have been often brought to England early in the ſpring, before thoſe roots have arrived from Italy, which are annually imported; the ſtalks of this are weaker, and do not riſe ſo high, and the flowers are ſmaller than thoſe of the common Tuberoſe, but in other reſpects it is the ſame.

The Tuberoſe grows naturally in India, whence it was firſt brought to Europe, where it now thrives in the warmer parts, as well as in its native ſoil. The Genoeſe are the people who cultivate this plant, to furniſh all the other countries where the roots cannot be propagated without great trouble and care, and thence the roots are annually ſent to England, Holland, and Germany. In moſt parts of Italy, Sicily, and Spain, the roots thrive and propagate without care, where they are once planted.

This plant has been long cultivated in the Engliſh gardens for the exceeding beauty and fragrancy of its flowers; as the roots are too tender to thrive in the full ground in England, there are few perſons who care to take the trouble of nurſing up their offſets, till they become blowing roots, becauſe it will be two or three years before they arrive to a proper ſize for producing flowers; and as they muſt be protected from the froſt in winter, the trouble and expenſe of covers is greater than the roots are worth; for they are generally ſold pretty reaſonable, by thoſe who import them from Italy.

The double flowering is a variety of the firſt, which was obtained from the ſeed by Monſ. Le Cour, of Leyden in Holland, who for many years was ſo tenacious of the roots, even after he had propagated them in ſuch plenty as to have more than he could plant, that he cauſed them to be cut in pieces, to have the vanity of boaſting that he was the only perſon in Europe who poſſeſſed this flower; but of late years the roots have been ſpread into many parts.

[It appears from Evelyn's Kalendar, that the Tuberoſe was cultivated here in 1664*. It is ſaid to have been firſt brought from the Eaſt Indies by Father Theophilus Minuti, who went three times into that country: and to have been firſt cultivated at Boiſgencier (in horto Belgenſeriano) near Toulon. Cluſius firſt ſaw it in december 1594: he had it from Bernard Paludanus, a learned phyſician; and two years after he received farther information of it from Simon de Tovar, who gave it to Paludanus.]

PROPAGATION AND CULTURE.

As there is no other method to propagate the double-flowering Tuberoſe but by the offſets, moſt people are careful to increaſe it; which is done by planting the offſets upon a moderate hot-bed early in march, and covering the bed in cold weather with mats or ſtraw, and in ſummer they muſt have plenty of water in dry weather. In this bed the roots may remain till the leaves decay in autumn, but if there ſhould happen any froſt before that time, the bed ſhould be covered becauſe if the froſt enters ſo low as to reach the roots it will kill them; and if the leaves are injured by the froſt, it will weaken the roots. Where there is due care taken to ſcreen them from froſt, and too much wet, it will be the beſt way to let the roots remain in the bed till the end of november or the beginning of december, provided hard froſts do not ſet in ſooner; for the leſs time the roots are out of the ground, the ſtronger they will be, and the ſooner they will flower; when the roots are taken up, they ſhould be cleaned from the earth, and laid up in dry ſand, where they may be ſecure from froſt and wet; here they ſhould remain until the ſeaſon for planting them again; this ſame method ſhould be practiſed by thoſe who are deſirous to cultivate the ſingle ſort in England, and alſo that with ſtriped leaves muſt be propagated the ſame way.

[r] Linn.

[s] Linn. ſuppl.

* Hort. kew.

I ſhall next give directions for the management of theſe roots, which are annually brought from Italy. And firſt, in the choice of the roots, thoſe which are the largeſt and plumpeſt, if they are perfectly firm and ſound, are the beſt; and the fewer offſets they have, the ſtronger they will flower; but the under parts of the roots ſhould be particularly examined, becauſe it is there that they firſt decay; after the roots are choſen, before they are planted, the offſets ſhould be taken off; for if theſe are left upon the roots, they will draw away part of the nouriſhment from the old root, whereby the flower-ſtems will be greatly weakened.

As theſe roots commonly arrive in England in the month of February or march, thoſe who are deſirous to have theſe early in flower, ſhould make a moderate hot-bed ſoon after the roots arrive, which ſhould have good rich earth laid upon the dung, about ſeven or eight inches deep; this bed ſhould be covered with a frame, and when the bed is in a proper temperature for warmth, the roots ſhould be planted at about ſix inches diſtance from each other every way. The upper part of the root ſhould not be buried more than one inch in the ground; when the roots are planted, there ſhould be but little water given them until they ſhoot above ground; for too much wet will rot them, when they are in an inactive ſtate, but afterward they will require plenty of water, eſpecially when the ſeaſon is warm. When the flower-ſtems begin to appear, the bed ſhould have a large ſhare of air given to it, otherwiſe the ſtalks will draw up weak, and produce but few flowers; for the more air theſe plants enjoy in good weather, the ſtronger they will grow, and produce a greater number of flowers; therefore, toward the beginning of may, the frame may be quite taken off the bed, and hoops faſtened over it, to ſupport a covering of mats, which need not be laid over but in the night, or in very cold weather, ſo that by enjoying the free open air their ſtems will be large; and if they are well watered in dry weather, their flowers will be large, and a great number on each ſtem.

This firſt planting will require more care than thoſe which are deſigned to come after them, for in order to have a ſucceſſion of theſe flowers, the roots ſhould be planted at three different times, viz. the firſt the beginning of March, the ſecond the beginning of april, and the third at the end of that month, or the beginning of may; but theſe beds will require a much leſs quantity of dung than the firſt, eſpecially that bed which is the laſt made; for if there is but warmth enough to put the roots in motion, it is as much as will be required, and this laſt bed will need no covering, for many times thoſe roots which are planted in the full ground at this ſeaſon, will produce ſtrong flowers in autumn; but in order to ſecure their flowering, it is always the beſt way to plant them on a gentle hot-bed. As to the ſecond bed, that ſhould be arched over with hoops, and covered with mats every night, and in bad weather, otherwiſe the late froſts which frequently happen in may will pinch them.

Theſe plants may remain in the beds until the flowers are near expanding, at which time they may be carefully taken up, preſerving the earth to their roots, and planted in pots, and then placed in the ſhade for about a week to recover their removal; after which time the pots may be removed into halls or other apartments, where they will continue in beauty a long time, and their fragrant odour will perfume the air of the rooms where they are placed; and by having a ſucceſſion of them, they may be continued from midſummer to the end of october, or middle of november; but as the ſtems of theſe plants advance, there ſhould be ſome ſticks put down by each root, to which the ſtems ſhould be faſtened, to prevent their being broken by the wind.

It is a common practice with many people, to plant theſe roots in pots, and plunge the pots into a hot bed; but there is much more trouble in raiſing them in this method, than in that before directed; for if the roots are not planted in very ſmall pots, there will be a neceſſity of making the beds much larger, in order to contain a quantity of the roots; and if they are firſt planted in ſmall pots, they ſhould be ſhaken out of theſe into pots of a larger ſize, when they begin to ſhoot out their flower-ſtems, otherwiſe the ſtalks will be weak, and produce but few flowers; therefore I preſer the other method, as there is no danger in removing the roots if it is done with care.

When the roots are ſtrong and properly managed, the ſtems will riſe three or four feet high, and each ſtem will produce ten or twelve flowers or more; and in this the great beauty of theſe flowers conſiſts, for when there are but a few flowers upon the ſtalks they will ſoon fade away, ſo their places muſt be frequently renewed; for the flowers are produced in ſpikes coming out alternately upon the ſtalk, the lower flowers opening firſt; and as theſe decay, thoſe above them open, ſo that in proportion to the number of flowers upon each ſtalk, they continue in beauty a longer or ſhorter time.

The ſort with double flowers will require a little more care, in order to have the flowers fair, but this care is chiefly at the time of blowing, for the flowers of this ſort will not open, if they are expoſed to the open air; therefore when the flowers are fully formed and near opening, the pots ſhould be placed in an airy glaſs-caſe, or a ſhelter of glaſſes ſhould be prepared for them, that the dews and rains may not fall upon them, for that will cauſe the flowers to rot away before they open, and the heat of the ſun drawn through the glaſſes will cauſe their flowers to expand very fair. With this management, I have had this ſort with very double flowers extremely fair, and upward of twenty upon one ſtem, ſo that they have made a beautiful appearance; but where this has not been practiſed, I have rarely ſeen one of them in any beauty.

POLIFOLIA. *See Andromeda.*

POLIUM. *See Teucrium.*

POLLIA.

Lin. gen. Schreb. n. 572. *Thunb. nov. gen.* 11. *flor. japon.* 8. *Juſſ.* 45.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Junci*, Juſſ.

GENERIC CHARACTER.

CAL. none.

COR. ſix-petalled. *Petals*, the three outer ovate, concave, wider at the tip, blunt; the three inner alternate with the outer, bending in, nerved, very ſlender.

STAM. *Filaments* ſix, capillary, curved in at the tip, inſerted into the receptacle. *Anthers* round, twin.

PIST. *Germ* globular, ſuperior. *Style* filiform-ſubulate, incurved. *Stigma* ſimple, blunt.

PER. *Berry* globular, ſurrounded by the permanent reflex corolla.

SEEDS very many (as far as twenty) angular.

ESSENTIAL CHARACTER.

Cor. inferior, ſix-petalled. *Berry* many-ſeeded.

SPECIES.

1. Pollia japonica.

Lin. ſyſt. 332. *Thunb. jap.* 138.[1] *Hornſt. diſſ.* 1. 11, 12, 13.

DESCRIPTION, *&c.*

Stem angular, erect, jointed, little branched, rough with villoſe hairs, two feet high. Branches alternate, ſhort, flowering ſucceſſively, reſembling the ſtem. Leaves on the lower part of the ſtem approximating, on the upper very remote, alternate, embracing, enſiform, nerved longitudinally, entire, ſmooth but feeling rough when ſtroaked backwards, whitiſh underneath, patulous, a foot long, (the upper ones ſhorter) more than an inch wide. Flowers verticillate corymbed. Peduncles verticillate, four to ſix in a whorl, villoſe, green, ſpreading, two or three-flowered, an inch in length. Pedicels ſhort, ſnow-white. Bracte under each peduncle lanceolate, convex, white.

Native of Japan, near Nagaſaki, and of the iſland of Java; flowering in ſeptember'.

Juſſieu doubts whether this plant may not be more nearly allied to the *Aſparagi* than the *Junci*; and whether the fruit be really a berry.

[1] Thunb. jap.

POLLICHIA. (*So named by Dr. Solander, in honour of John Adam Pollich, M. D. author of an History of the Native Plants of the Palatinate of the Rhine.*)

Lin. gen. Schreb. n. 1705. *p.* 782. *Ait. kew.* 3. 505. *Smith ſpicil.* 1. *t.* 1.

Claſſ. 1. 1. Monandria Monogynia.

Nat. order of *Amaranthi*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, pitcher-ſhaped, ſlightly five-cornered, five-toothed, permanent; its orifice contracted by an elevated, pellucid, reticulated ring; teeth rather obtuſe, concave, ſpreading, ſomewhat membranaceous in the margin.

COR. *Petals* five, alternate with the diviſions of the calyx, fixed in the ring, ſmall, triangular.

STAM. *Filament* one, incurved, proceeding from the orifice of the calyx, through a cleft in the ring, oppoſite to and about the length of its upper ſegment, which is a little larger than, and ſomewhat remote from the reſt. *Anther* roundiſh, two-lobed, incumbent.

PIST. *Germ* ſuperior, in the bottom of the calyx, ovate, ſmooth. *Style* filiform, as long as the calyx, forked. *Stigmas* obtuſe, fringed.

PER. none, except a thin membrane.

SEED ſolitary, filling the cavity of the thickened calyx.

RECEPT. A ſcale under each flower, roundiſh, ſucculent, often compound; after flowering gradually enlarging, and at length becoming very fleſhy, pellucid, white and ſhining, obtuſe, incurved, ſupporting the fruit on the inſide about half way up.

OBS. *This well-marked and ſingular genus is allied to* Herniaria, *but is ſufficiently diſtinct from it in many particulars.*

ESSENTIAL CHARACTER.

Cal. one-leafed, five-toothed. *Cor.* five-petalled. *Seed* ſolitary. *Recept.* producing ſucculent aggregate ſcales, ſuſtaining the fruit.

SPECIES.

1. Pollichia campeſtris. *Wherl-leaved Pollichia.*

Lin. ſpec. ed. Willd. 23. *Ait. kew.* 1. 5. *Smith ſpicil.* 1. *t.* 1.

Neckeria campeſtris. *Gmel. ſyſt.* 16.

DESCRIPTION, *&c.*

Root fibrous, biennial. Stems ſeveral, inclined, round, inveſted with a thin white down, branched, leafy. Branches moſtly alternate, erect, leafy, many-flowered. Leaves in whorls ſix together, of which the two outermoſt are generally the largeſt, except in the lower part of the ſtem; all ſpreading in various directions, ſeſſile, linear-lanceolate, acute, contracted at the baſe, entire, ſmooth, a little glaucous, ſomewhat ſucculent. Stipules numerous, ſmall, lanceolate, membranous, permanent. Flowers in ſeſſile, oppoſite, axillary cluſters, at almoſt every whorl of the branches, numerous, ſeſſile, ſmall, green. Bractes mixed with the flowers, lanceolate, membranaceous, ciliate. Calyx ſmooth and full of honey. Petals white. Anther tawny. Scales full of ſweet juice.

Native of the Cape of Good Hope, where it was found by Mr. William Paterſon, who tranſmitted the ſeeds to the Counteſs of Strathmore, by which means it was introduced into the Kew garden, and flowered there, for the firſt time in Europe, in the year 1780[*]. It flowers here in ſeptember.

POLLUERIA. See *Pyrus*.

POLYACANTHA. See *Cardui*.

POLYANTHEMUM. See *Leucoium*.

POLYANTHES. See *Agapanthus* and *Crinum*.]

POLYANTHUS. See *Primula*.

[POLYANTHUS-NARCISSUS. See *Narciſſus*.

POLYCARDIA. (*Pluries cordata.*)

Willd. 1121. *Juſſ. gen.* 377. *Lamarck*, 132.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Dumoſæ.—Rhamni*, Juſſ.

GENERIC CHARACTER.

CAL. very ſmall, five-lobed.

COR. *Petals* five, rounded.

STAM. *Filaments* five, very ſhort. *Anthers* roundiſh.

PIST. *Germ* broad. *Style* one. *Stigma* lobed.

PER. *Capſule* coriaceous, five-celled, five-valved (ſometimes three or four-celled, three or four-valved) *valves* ſeptiferous in the middle, *partitions* ſeminiferous on each ſide at the baſe.

SEEDS few, oblong, half arilled at the hilum: *aril* calyx-form, laciniated.

ESSENTIAL CHARACTER.

Pet. five, rounded. *Stigma* lobed. *Capſ.* five-celled, five-valved. *Seeds* arilled.

SPECIES.

1. Polycardia madagaſcarenſis.

Lin. ſpec. ed. Willd. 1121. *Lamark, encycl. t.* 132.

DESCRIPTION, *&c.*

This is a ſingular ſhrub, approaching in habit to *Xylophylla* and *Phyllanthus*. Leaves alternate, petioled; the barren ones lanceolate, acute or obtuſe, veined, quite entire; the fertile or floriferous ones quite entire, obcordate, wedge-form at the baſe. Flowers three or four on the top of the fertile leaf, at the end of the midrib*.

Native of Madagaſcar, where it was found by Commerſon.

POLYCARPON. (*From πολυς and καρπος, much fruit or ſeed.*)

Lin. gen. n. 105. *Reich. n.* 112. *Schreb. n.* 138. *Gærtn. t.* 129. *Juſſ.* 299. *Lacſling.*

Claſſ. 3. 3. Triandria trigynia.

Nat. order of *Caryophylli*.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* ovate, concave, keeled, mucronate, permanent.

COR. *Petals* five, very ſhort, ovate, emarginate, alternate, permanent.

STAM. *Filaments* three, filiform, ſhorter by half than the calyx. *Anthers* roundiſh.

PIST. *Germ* ovate. *Styles* three, very ſhort. *Stigmas* blunt.

PER. *Capſule* ovate, one-celled, three-valved.

SEEDS very many, ovate.

ESSENTIAL CHARACTER.

Cal. five-leaved. *Pet.* five, ovate, very ſmall. *Capſ.* one-celled, three-valved. *Seeds* very many.

SPECIES.

1. Polycarpon tetraphyllum. *Four-leaved All-ſeed.*

Lin. ſpec. 131. *ſyſt. ed.* 13. 116. *ed.* 14. 129. *Reich.* 1. 247. *Willd.* 490. *ſuppl.* 116. *Gærtn. fruct.* 2. 224. *Lamarck illuſtr. n.* 1194. *t.* 51. *Hudſ. angl.* 60. *Wither. arr. ed.* 3. 376. *Smith angl.* 162. *Dickſ. faſc.* 17. 6. *Hoffm. germ.* 44. *Krock. ſileſ. n.* 198. *t.* 32. *Scop. carn. n.* 131. *Allion. pedem. n.* 1698. *Villars dauph.* 3. 652. *Deſfont. atlant.* 115.

Molluga tetraphylla. *Lin. ſpec. ed.* 1. 89. *hort. cliff.* 28.

Holoſteum tetraphyllum. *Thunb. prodr.* 24.

Trichs triſtemon, foliis conjugatis. *Hall. goett.* 25.

Herniaria Alſines folio. *Tournef. inſt.* 507.

Anthyllis marina alſinefolia. *Bauh. pin.* 282.

A. alſinefolia polygonoides major. *Barr. rar.* 103 *t.* 534.

A. maritima incana. *Park.*

A. marina incana alſinefolia. *Leb. ic.* 468. *adv.* 196. 1. *Ger. emac.* 622.

Paronychia altera Matthioli. 734. *Dalech. hiſt.* 1213. *f.* 2.

P. alſinefolia incana. *Bauh. hiſt.* 3. 366. 2. *Raii hiſt.* 1026. 8.

DESCRIPTION, *&c.*

Stem very much branched, diffuſed, divaricating. Leaves oppoſite or in fours, obovate, quite entire, ſomewhat fleſhy, ſmooth. Stipules and bractes acuminate, ſcarious, white. Panicles terminating, dichotomous. Flowers numerous, ſmall. Calyx edged with white. Petals very ſmall, fugacious, white, ſometimes emarginate. Valves of the capſules lanceolate, bent in at the edge[†].

According to Deſfontaines, the whole plant is ſmooth; the ſtems ſometimes erect, ſometimes procumbent at the baſe, round, knobbed, jointed, almoſt

* Smith.

* Willdenow. † Idem.

filiform.

filiform. Leaves on very short petioles, commonly in whorls of four together, unequal. Stipules small; the middle ones membranaceous, white, entire or torn. Flowers panicle-corymbed. Calyx five-parted; the parts keeled, acute. Both he and Hudson remark that the petals are sometimes abortive.

The capsule is small; the valves membranaceous, rolling up inwards after the capsule opens. Seeds many, as far as fifteen, very small, ovate with a beak, shagreened, or before they are fully ripe angular and smoothish, they are of a pale colour[a].

Mr. Woodward observes, that it alters in habit so much by cultivation as hardly to be known at first sight.

This insignificant plant may boast a great variety of names. It is annual, and flowers from may to august, and even in winter.

Native of many parts of Europe, in a dry light soil: as Germany, the South of France, Istria, Italy, Barbary. In the West of England; as in various parts of the coast of Devonshire and Dorsetshire; about Lymston near Exeter, Mr. Hudson; on the neck of the Isle of Portland, close to the shingly beach, Mr. Hudson and Dr. Goodenough. In Portland, at the north end, and about Exmouth in Devon, Mr. Lightfoot. On Chesil bank, A. B. Lambert, Esq;[a]

POLYCARPUS. See *Scleranthus*.

POLYCEPHALOS. See *Spheranthus*.

POLYCNEMUM (*of Pliny,* Πολυκνημον *of Dioscorides: from* πολυ *multiplex, and* κνημη *crus: many-legged.*)

Lin. gen. n. 53. *Reich. n.* 59. *Schreb. n.* 72. *Gærtn. t.* 128. *Juss.* 84.

Class. 3. 1. Triandria Monogynia.

Nat. order of *Holoraceæ. Atriplices*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* five-leafed: *leaflets* ovate, erect, mucronate, permanent.

COR. none.

STAM. *Filaments* two or three, capillary, shorter than the calyx. *Anthers* twin.

PIST. *Germ* roundish. *Style* very short, two-parted. *Stigmas* obtuse.

PER. *Capsule* ovate, with the top flattish and margined, acuminate with the permanent style, membranaceous, thin, valveless, not opening.

SEED single, kidney-form.

OBS. *Most of the species have two bractes, under the calyx, and which are taken by some for the calyx, and the calyx for the corolla. Other species have two, three, or four calycine leaflets. The flamens are one, two, three, five in number. One style or two.* Pallas.

ESSENTIAL CHARACTER.

Cal. three-leaved. *Pet.* five, calycine. *Seed* one, almost naked.

SPECIES.

1. Polycnemum monandrum. *One-stamened Polycnemum. Lin. spec. ed. Willd.* 192. *Pallas it.* 1. *app. n.* 94. *t.* G. *f.* 1.

Monandrous, leaves linear acute, stem erect.

2. Polycnemum sclerospermum. *Linn. spec. ed. Willd.* 192. *Pallas it.* 3. *app. n.* 84. *t.* M. *f.* 2. E. *e.*

Diandrous, leaves cylindric fleshy, stem erect branched.

3. Polycnemum arvense. *Trailing Polycnemum. Lin. spec.* 50. *Syst.* 83. *Reich.* 1. 96. *Willd.* 192. *Gærtn. fruct.* 2. 211. *Sauv. monsp.* 45. *Gouan. hort.* 24. *Hall. helv. n.* 1570. *Leers herborn. n.* 31. *Jacqu. austr.* 4. 34. *t.* 365. *Roth. germ.* 1. 18. 2. 45. *Hoffm. germ.* 12. *Krock. silef. n.* 54. *t.* 7. *Allion. pedem. n.* 1894. *Guett. stamp.* 14. (Chenopodium.)

Chenopodium annuum humifusum, folio breviori & capillaceo. *Tournef. inst.* 506.

Camphorata congener. *Baub. pin.* 486.

Herniaria foliis longis angustis acuminatis & glabris. *Magn. chor.* 51.

Triandrous, leaves awl-shaped three-sided, stem diffused.

4. Polycnemum salsum. *Triandrous Polycnemum. Lin. spec. ed. Willd.* 192.

P. triandrum. *Pallas it.* 1. *app. n.* 95. *t.* G. *f.* 2. & H. *f.* 1.

Triandrous, leaves filiform fleshy sheathing, stem diffused.

5. Polycnemum oppositifolium. *Opposite-leaved Polycnemum. Linn. spec. ed. Willd.* 193. *Pallas it.* 1. *app.* 98. *t.* H. *f.* 2.

Pentandrous, leaves opposite fleshy semicylindrical, stem erect.

DESCRIPTIONS, &c.

1. This is a perennial plant, found by Professor Pallas, in a dry salt soil in Siberia.

2. An annual plant, found also in the muddy salts of Siberia, by the Jaik and the lake Altan[y].

3. Root annual. Stem short, branched from the very base. Branches procumbent, simple or subdivided, striated, somewhat hairy, knobbed with a callus at the inside of the base, prostrate. Leaves numerous, keeled, mucronate. Flowers axillary, sessile, solitary. Calycine leaflets constantly two, lanceolate, awned, twice as long as the corolla. Petals five, ovate, acuminate. Stamens three, shorter than the corolla. Germ within a coat, fastened by a thread coming out of the side not from the base. Style bifid, ascending from the opposite side, and perforating the apex of the membrane, as in some of the Chenopodiums. Stigmas globular. A kidney-form dotted seed is inclosed in a thin membranaceous capsule, like that of *Herniaria*, and is let out at the base by a very slight pressure[z].

Gærtner describes the capsule as utricular, roundish, turgidly lenticular, very thin, pale, terminated at top by a double rudiment of the styles. Seed rounded-kidney-form, lenticular, having very minute raised dots scattered over it, rufescent, erect, fastened by a long filiform umbilical cord, ascending from the base of the capsule to the other margin of the seed.

Gærtner commends Adanson for having united this genus with *Camphorosma*, the number of parts in the flowers being so various, as the observations of Pallas have abundantly shown.

Haller describes the flowers as seated between two awned bristles: and Krocker says, there are five calyx-shaped scales, permanent, membranaceous, awned, and no other calyx or corolla visible.

Native of France, Italy, Germany, Switzerland and Austria, in corn fields.

Cultivated in 1758, by Mr. Miller. It flowers in july[a].

4. This is perennial, and was found by Pallas in sandy saltish wet places of Siberia.

5. This is annual, and was discovered by Pallas in salts and marshes near the Caspian sea[b].]

POLYGALA. (*From* πολυ, *much and* γαλα, *milk. This plant being supposed to make cattle yield much milk.—The name occurs in Pliny, and Dioscorides has* πολυγαλον.)

Lin. gen. n. 851. *Reich. n.* 921. *Schreb. n.* 1155. *Tournef. t.* 79. *Juss.* 99. *Gærtn. t.* 62. Chamæbuxus. *Tournef. act. gall.* 1705. Polygaloides. *Dill. gen.* 9. Penœa. *Plum.* 25. Heisteria, *edit. prior.*

Class. 17. 3. Diadelphia Octandria.

Nat. order of *Lomentaceæ. Pediculares*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, small: *leaflets* ovate, acute: *two* below the corolla, *one* above that, and *two* in the middle, subovate, flat, very large, coloured, (the wings) permanent.

COR. subpapilionaceous. *Standard* almost cylindrical, tubular, short, with a small reflex mouth, bifid. Wings, *Jacqu.*) *Keel* concave, compressed, ventricose towards the tip. *Appendix of the keel*, in most of the species two, three-parted, pencil-shaped *bodies*, fastened to the keel towards the tip.

STAM. *Filaments* diadelphous (eight connected) inclosed within the keel. *Anthers* eight, simple.

PIST. *Germ* oblong. *Style* simple, erect. *Stigma* terminating, thickish, bifid.

[a] Gærtner. [a] Pulteney's Dorsetshire plants. [y] Willdenow. [z] Leers. [a] Hort. kew. [b] Willdenow.

PER. *Capsule* obcordate, compressed with an acute margin, two-celled, two-valved: *partition* contrary to the valves; opening at each margin.

SEEDS solitary, ovate, (with a glandular umbilicus. G.)

OBS. *The appendix to the keel is different in the several species; and in many the pencil-shaped appendix is wanting; whence they are called beardless.*

In Heisteria *the calyx is five-parted and equal, the corolla not cloven, and the germ four-horned. The fruit of* P. spinosa *is a berry (or a drupe) and the branches are pungent.* Juffieu.

ESSENTIAL CHARACTER.

Cal. five-leaved, with two of the leaves shaped like wings and coloured. *Legume* obcordate, two-celled.

SPECIES.

* *Crested (the flowers having a pencil-shaped appendix).*

[1. Polygala incarnata. *Flesh-coloured Milk-wort.*
Lin. spec. 986. *Reich.* 3. 382. *Pluk. mant. t.* 438. *f.* 5. *Raii suppl.* 639. *n.* 7.
Flowers in spikes, stem herbaceous branched erect, leaves alternate awl-shaped.

2. Polygala alpalatha.
Lin. syst. 637. *Reich.* 3. 382. *mant.* 99.
Flowers in heads, stems quite simple, leaves briftle-shaped, scattered.

3. Polygala brasiliensis. *Brasilian Milk-wort.*
Lin. syst. 638. *Reich.* 3. 382. *mant.* 99.
Flowers subspiked, stems quite simple, leaves lanceolate scattered.

4. Polygala trichosperma. *Hairy-seeded Milk-wort.*
Lin. syst. 638. *Reich.* 3. 383. *mant.* 259. *Jacqu. obs.* 3. 16. *t.* 67.
Flowers in spikes, stems rod-like striated, leaves linear.

5. Polygala amara. *Bitter Milk-wort.*
Lin. spec. 987. *syst.* 638. *Reich.* 3. 383. *Jacqu. vind.* 262. *austr.* 5. *p.* 6. *t.* 412. *Scop. carn. n.* 868. *Hall. helv. n.* 343. *Fl. dan. t.* 1169. *Krock. silef. n.* 1142. *Villars dauph.* 3. 388. *Allion. pedem. n.* 1087. *Zorn. ic. t.* 83.
P. amarella. *Crantz. austr.* 438.
P. vulgaris, foliis circa radicem rotundioribus, flore cæruleo, sapore admodum amaro. *Baub. pin.* 215.
P. buxi minoris folio. *Vaill. par.* 161. *t.* 32. *f.* 2.
Flowers in racemes, stems almost upright, radical leaves obovate larger.]

6. Polygala vulgaris. *Common Milk-wort.*
Lin. spec. 986. *syst.* 638. *Reich.* 3. 383. *amoen.* 2. 136. *vir. cliff.* 70. *hort. cliff.* 351. *fl. suec. n.* 632. *Gærtn. fruct.* 1. 294. *Hudf. angl.* 310. *Wither. arr. ed.* 3. 622. *Smith angl.* 752. *Engl. bot.* 76. *Lightf. scot.* 381. *Relh. cant. n.* 511. *Sibth. oxon. n.* 610. *Hall. helv. n.* 344. *Scop. carn. n.* 867. *Pollich pal. n.* 664. *Fl. dan. t.* 516. *Krock. silef. n.* 1141. *Villars dauph.* 3. 387. *Allion. pedem. n.* 1088. *Desfont. atlant.* 127. *Thunb. jap.* 277. *Baub. pin.* 215. *Knipb. cent.* 11. *n.* 84.
Polygala. *Ger.* 449. 4. *emac.* 563. *Raii hist.* 1335. *syn.* *287.
P. minor. *Park. theat.* 1332. 2.
P. recentiorum. *Lob. ic.* 1. 416. 2. & 417. 1.
Polygalon. *Trag.* 571.—multis. *Baub. hist.* 3. 362.
Flos ambarvalis. *Dod. pempt.* 253.
Flowers in racemes, stems herbaceous simple procumbent, leaves linear-lanceolate.

[7. Polygala major. *Large Milk-wort.*
Lin. syst. 638. *Jacqu. austr.* 5. *t.* 413. *Baub. pin.* 215. *Park. theat.* 1332.
P. vulgaris major. *Baub. hist.* 3. 387. *Clus. hist.* 325. *Raii hist.* 1335. *syn.* *287.
Flowers in racemes, stems herbaceous simple more erect, leaves linear-lanceolate.]

8. Polygala monspeliaca. *Montpellier Milk-wort.*
Lin. spec. 987. *syst.* 638. *Reich.* 3. 384. *Sauv. monsp.* 53. *Magn. monsp.* 208. *Villars dauph.* 3. 388. *Allion. pedem. n.* 1089. *Krock. silef. n.* 1143. *Desfont. atlant.* 129.
P. vulgaris coloris obsoleti, foliis angustissimis. *Baub. hist.* 3. 338. *Raii hist.* 1336. *Tournef. inst.* 175.
P. acutioribus foliis monspeliaca. *Baub. pin.* 207.
Flowers in racemes, stem upright, leaves lanceolate-linear acute.

[9. Polygala paniculata. *Panicled Milk-wort.*
Lin. spec. 987. *Reich.* 3. 384. *amoen.* 5. 402. *Swartz obs.* 272. *t.* 6. *f.* 2. *Brown. jam.* 287. *n.* 1.
Racemes naked, stems herbaceous erect branched at top, leaves linear.

10. Polygala sibirica. *Siberian Milk-wort.*
Lin. spec. 987. *syst.* 638. *Reich.* 3. 384. *Gmel. sib.* 4. 64. *t.* 32.
P. multicaulis. *Amm. ruth. n.* 43. 44. 45.
Raceme lateral naked, stems herbaceous, leaves lanceolate.

11. Polygala bracteolata. *Spear-leaved Milk-wort.*
Lin. spec. 987. *syst.* 638. *Reich.* 3. 385. *amoen.* 2. 137. *Berg. cap.* 182. *Buxb. cent.* 3. 41. *t.* 71. *Pluk. phyt. t.* 53. *f.* 2. *Raii suppl.* 640. *n.* 20. *Curt. magaz.* 345.
β. *Lin. amoen.* 2. 137. *hort. cliff.* 353. *Burm. afr.* 202. *t.* 73. *f.* 2.
γ. *Lin. amoen.* 2. 137. *Burm. afr.* 203. *t.* 73. *f.* 3. *Breyn. cent. t.* 49.
δ. *Lin. amoen.* 2. 138. *Pluk. mant. t.* 404. *f.* 6. *Burm. afr.* 204. *t.* 73. *f.* 4.
Flowers in racemes, bractes three-leaved, leaves linear-lanceolate, stem shrubby.

12. Polygala umbellata. *Umbelled Milk-wort.*
Lin. syst. 638. *Reich.* 3. 385. *mant.* 259. *Burm. afr.* 204. *t.* 73. *f.* 5.
Flowers subumbelled, leaves linear subciliate.]

13. Polygala myrtifolia. *Myrtle-leaved Milk-wort.*
Linn. spec. 988. *syst.* 638. *Reich.* 3. 386. *amoen.* 2. 138. *hort. cliff.* 353. *Mill. illustr. ic. Comm. hort.* 1. 87. *t.* 46. *Raii suppl.* 640. *n.* 19. *Pluk. mant. t.* 437. *f.* 4. *Burm. afr.* 200. *t.* 73. *f.* 1.
P. frutescens, folio buxi, flore maximo. *Tournef. inst.* 175.
Keel of the corolla crescent-shaped, stem shrubby, leaves even oblong blunt.

[14. Polygala tinctoria.
Vahl. symb. 1. 50.
P. bracteolata. *Forst. descr.* 213.
Villose, bractes three-leaved, leaves obovate, stem shrubby.

15. Polygala oppositifolia. *Opposite-leaved Milk-wort.*
Lin. syst. 638. *Reich.* 3. 386. *mant.* 259.
P. fruticosa. *Berg. cap.* 183.
Stem shrubby, leaves opposite ovate acute.

16. Polygala spinosa. *Prickly Milk-wort.*
Ait. hort. kew. 3. 5.
α. P. spinosa ovalifolia.
Oval-leaved prickly Milk-wort.]
P. spinosa. *Lin. spec.* 989. *syst.* 638. *Reich.* 3. 386. *mant.* 437. *amoen.* 2. 141.
Leaves oval obtuse.
β. P. spinosa angustata.
Narrow-leaved prickly Milk-wort.
Ulex capensis. *Lin. spec.* 1046. *Reich.* 3. 418. *Mill. dict. n.* 2. *Pluk. phyt. t.* 185. *f.* 6. *Petiv. gaz. t.* 83. *f.* 9.
Leaves lanceolate-linear smooth acute, branches and branchlets leaf-bearing.
Flowers lateral, stem shrubby, branches spiny, leaves scattered oval-oblong, fruit drupaceous.

[17. Polygala teretifolia.
Lin. syst. 638. *suppl.* 316.
Flowers lateral, stem shrubby branched, leaves filiform sickle-shaped.

** *Beardless (the flowers without any pencil keeled) frutescent.*

18. Polygala theezans.
Lin. syst. 639. *Reich.* 3. 387. *mant.* 260. *Burm. ind.* 154. *Feuill. peruv.* 1. *t.* 13. *Burm. zeyl.* 195. *t.* 85.
Peduncles one-flowered, stem shrubby, leaves alternate lanceolate.

19. Polygala trinervia.
Lin. syst. 639. *suppl.* 315.
Peduncles one-flowered, stem shrubby angular, leaves alternate cordate cuspid three-nerved.

20. Polygala Penæa.
Lin. ſpec. 988. *Reich.* 3. 387. *amœn.* 2. 140.
Penæa arboreſcens, buxi folio aſpero. *Plum. ſpec.* 22. *ic.* 214. *f.* 1.
Flowers lateral ſolitary, ſtem arborous, leaves obtuſe petioled.

21. Polygala diverſifolia.
Lin. ſpec. 988. *Reich.* 3. 387. *amœn.* 2. 140. *hort. cliff.* 353. *Swartz obſ.* 273. *Brown. jam.* 287. *n.* 3. *t.* 5. *f.* 3. *Sloan. jam.* 2. 32. *t.* 170. *f.* 2.
Flowers in racemes, ſtem arborous, older leaves oblong-ovate, younger ſubovate.

22. Polygala microphylla. *Small-leaved Milk-wort.*
Lin. ſpec. 989. *Reich.* 3. 388.
P. luſitanica fruteſcens, magno flore, foliis minimis. *Tournef. inſt.* 175.
Flowers in racemes, ſtems ſhrubby, leaves very minute elliptic.

23. Polygala æſtuans.
Lin. ſyſt. 839. *ſuppl.* 315.
Flowers in racemes, ſtem ſhrubby, leaves lanceolate petioled.

24. Polygala violacea.
Vahl ſymb. 2. 79.
Flowers in racemes lateral and terminating, ſtem ſhrubby hairy, leaves oblong.

25. Polygala chinenſis.
Lin. ſpec. 989. *Reich.* 3. 388. *Brown. jam.* 287. *n.* 4.
Flowers in ſpikes axillary, ſtems ſuffruticoſe, leaves oval.]

26. Polygala Chamæbuxus. *Box-leaved Milk-wort.*
Lin. ſpec. 989. *ſyſt.* 639. *Reich.* 3. 388. *amœn.* 2. 140. *Hall. helv. n.* 345. *Jacqu. vind.* 126. *auſtr.* 3. 19. *t.* 233. *Villars dauph.* 3. 389. *Krock. ſileſ. n.* 1145. *Scop. carn. n.* 869. *Allion. pedem. n.* 1090. *Curt. magaz.* 316.
Polygaloides procumbens, foliis duris ovatis, nervo ariſtato. *Hall. helv. n.* 345.
Chamæbuxus flore Coluteæ. *Bauh. pin.* 471.
Anonymos flore Coluteæ. *Cluſ. hiſt.* 1. 105.
Pſeudo chamæbuxus. *Park. theat.* 1429.
Flowers ſcattered, keel rounded at the tip, ſtem ſhrubby, leaves lanceolate.

[27. Polygala alopecuroides.
Lin. ſyſt. 639. *Reich.* 3. 388. *mant.* 260.
Flowers ſeſſile, leaves crowded ovate acute keeled hairy.

28. Polygala mexta.
Lin. ſyſt. 639. *ſuppl.* 316.
Flowers ſeſſile, ſtem ſhrubby, leaves round mucronate very much crowded.

29. Polygala ſquarroſa.
Lin. ſyſt. 639. *ſuppl.* 315.
Stem ſhrubby, leaves aggregate lanceolate patulous.

30. Polygala Heiſteria. *Heath-leaved Milk-wort.*
Lin. ſpec. 989. *ſyſt.* 639. *Reich.* 3. 389. *Curt. magaz.* 340.
Heiſteria. *Lin. hort. cliff.* 352.—pungens. *Berg. cap.* 185.
Thymbra capenſis. *Pluk. phyt. t.* 229. *f.* 5.—africana foliis ſpinoſis. *Barth. act.* 1673. *p.* 57.
Flowers lateral, ſtem arborefcent, leaves three-ſided mucronate-ſpiny.

31. Polygala ſtipulacea.
Lin. ſyſt. 639. *Reich.* 3. 389. *mant.* 260. *Burm. prodr.* 20.
Heiſteria mitior. *Berg. cap.* 187.
Spartium africanum fruteſcens, Ericæ folio. *Comm. hort.* 2. 193. *t.* 97.
Suffrutex Ericæ forma, flore ruberrimo. *Seba muſ* 2. 63. *t.* 62. *f.* 2.
Flowers lateral, ſtem ſuffruticoſe, leaves in threes linear acute.]

*** *Beardleſs, herbaceous, with a ſingle ſtem.*

32. Polygala Senega. *Officinal Milk-wort or Rattle-ſnake root.*
Lin. ſpec. 990. *Reich.* 3. 390. *amœn.* 2. 139. *t.* 2. *mat. med.* 169. *Woodv. med. bot.* 253. *t.* 93. *Gron. virg.* 1. 80. 2. 103. *Mill. dict. ic. Rati ſuppl.* 640. *n.* 25. (Plantula marilandica)
Flowers in ſpikes, ſtem erect quite ſimple, leaves broad-lanceolate.

[33. Polygala lutea. *Yellow-flowered Milk-wort.*
Lin. ſpec. 990. *Reich.* 3. 390. *amœn.* 2. 140. *Pluk. amalth. t.* 438. *f.* 6. *Rati ſuppl.* 639. *n.* 24. *Pet. ſice.* 58.
Flowers in oblong heads, ſtem erect quite ſimple, leaves lanceolate acute.

34. Polygala virideſcens. *Green-flowered Milk-wort.*
Lin. ſpec. 990. *Reich.* 3. 390. *amœn.* 2. 140. *Gron. virg.* 1. 80. 2. 104.
Flowers in globular heads, ſtem erect quite ſimple, leaves lanceolate bluntiſh.

35. Polygala triflora. *Three-flowered Milk-wort.*
Lin. ſpec. 991. *Reich.* 3. 391. *fl. zeyl. n.* 269.
Peduncles ſubviflorous, ſtem erect, leaves linear alternate.

36. Polygala glaucoides.
Lin. ſpec. 991. *Reich.* 3. 391. *fl. zeyl. n.* 270.
Peduncles many flowered lateral, ſtems diffuſed, leaves acute.

**** *Beardleſs, herbaceous, branched.*

37. Polygala ciliata. *Fringe-capſuled Milk-wort.*
Lin. ſpec. 991. *Reich.* 3. 391. *fl. zeyl. n.* 268.
Capſules ciliate-toothed, ſtem erect.

38. Polygala ſanguinea. *Red-ſpiked Milk-wort.*
Lin. ſpec. 991. *Reich.* 3. 391. *Pluk. mant. t.* 437. *f.* 5.
Peduncles ſquarroſe, ſtem erect.

39. Polygala verticillata. *Whorl-leaved Milk-wort.*
Linn. ſpec. 991. *Reich.* 3. 391. *amœn.* 2. 139. *Gron. virg.* 1. 172. 2. 103. *Pluk. mant. t.* 438. *f.* 4. *Rati ſuppl.* 639. *n.* 8.
Flowers ſeparate, leaves linear in whorls.

40. Polygala cruciata. *Croſs leaved Milk-wort.*
Lin. ſpec. 992. *ſyſt.* 640. *Reich.* 3. 392. *amœn.* 2. 138. *Gron. virg.* 2. 103. *Rati ſuppl.* 639. *n.* 10.
Leaves in fours.

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41. Polygala oxycoccoides.
Deſcript. atlant. 127. *t.* 174.
Stem ſhrubby procumbent, leaves elliptic obtuſe thickiſh.

42. Polygala ſaxatilis.
Deſcript. atlant. 128. *t.* 175.
Stem ſhrubby decumbent, branchlets pubeſcent, leaves lanceolate acute, flowers capitate-racemed.

43. Polygala roſea.
Deſcript. atlant. 128. *t.* 176.
Stem ſhrubby at the baſe, rod-like, ſimple, leaves lanceolate, flowers in looſe racemes, corollas fringed.]

44. Polygala mariana.
Mill. dict. n. 6. *Pluk. mant. t.* 438. *f.* 5.
Flowers beardleſs in oblong heads, ſtem erect branched, leaves linear.

45. Polygala americana.
Mill. dict. n. 7.
P. americana erecta flore purpuro-cæruleo, folio molli incano. *Houſt. MSS.*
Flowers erected, raceme terminating, ſtem erect branched, leaves lanceolate tomentoſe.

DESCRIPTIONS, *&c.*

1. Root annual. Stem a ſpan or a foot in height, filiform, angular. Branches commonly three, in the upper axils, long, narrow. Leaves flat, very ſharp, remote, ſcarcely eight for the moſt part upon the ſtem. Spikes terminating, ſolitary, oblong, of a very lively fleſh-colour; corollas three times as long as the calycine axils, furniſhed with a multifid dilated fleſh-coloured pencil, erect like the corolla.—Native of Virginia and Canada[s].

Ray informs us that Vernon and Krieg introduced it from Maryland.

2. The ſtems about a foot high. Leaves filiform, acuminate, ſpreading, an inch long; the upper ones ſhorter. Flowers terminating, in a ſort of head, on pedicels the length of the flowers. Under each flower is a lanceolate-ſubulate coloured bracte, the length of the pedicel. Corolla white, with lanceolate wings, and a pencilled keel. It has the appearance of an Aſpalathus.—Native of Braſil. Arduini[t].

[s] Linn. ſpec. [t] Linn. mant.

3. Stems a hand high, filiform, proſtrate, ſometimes, but ſeldom, having a lateral branch. Spike ſtraight, terminating, white, with the flowers on very ſhort pedicels, without bractes. Wings ovate, obtuſe: keel pencilled. Capſules with ſolitary ſeeds. The peduncle of the ſpike lengthens out as the flowers fall off, whence the rachis becomes toothletted.—Native of Braſil [a].

4. Root perennial. Stems erect, ſtriated, even, rod-like. Leaves ſcattered, lanceolate-ſubulate, acute, remote, ſmooth. Spikes terminating, oblong, toothletted below from the falling of the flowers. Keel without a creſt, but inſtead of it a point cut multifariouſly. Corolla minute, white. Awns of the ſeeds turned downwards, briſtle-ſhaped, numerous [b].

Stems herbaceous, ſlender, quite ſimple, or at moſt having a branch or two; covered their whole length with numerous leaves, the loweſt ſometimes above wider and blunt, gradually ſmaller upwards, and the uppermoſt very ſmall. Spikes denſe, an inch long, ſlender. Seeds conical, their blackneſs appearing through the very thin capſules: they are ſurrounded outwardly with long awns, whence with the ſlighteſt compreſſion they fly out of the capſules. The keel equals the wings in length. It has no ſlight affinity with the firſt ſpecies, yet it is abundantly different.—Native of New Granada [c].

5. This agrees ſo much with our common Milk-wort in habit, that it may be eaſily miſtaken for it. The radical leaves are thicker and obovate, wider and very blunt; the ſtem-leaves are more declining. The whole plant, except the root, is always extremely bitter; a leaf ſlightly chewed affects the tongue very ſtrongly, ſoon diffuſes itſelf over the whole jaws, and continues a long time [d].

Scopoli doubts whether it differs from the common ſort. Linneus calls it the daughter of that ſpecies, but having larger leaves, thoſe next the root ten times as big; however very nearly allied to it; diſtinguiſhed chiefly by its bitterneſs.

Krocker remarks, that the ſtems are more declined, not branching, ſhorter, ſomewhat angular, filiform, in tufts. Root-leaves roundiſh, firm, blunt; the upper leaves linear, all quite entire (and in alpine ſituations, as Haller obſerves), all ovate-lanceolate. The flowers, according to Villars, are of a beautiful ſky blue, but vary ſometimes to white.

Probably the ſame qualities which are aſcribed to *P. Senega* may reſide in this, and it might be uſed as a ſuccedaneum for that. Geſner aſſerts, that an infuſion of it purges without any harm. A tincture of four ounces of it in a pint of Canary wine is extremely bitter and of a browniſh colour [e]. It is employed in the pleuriſy, in malignant and milk fevers, and in phthiſis pulmonalis. A dram of the root in powder is given as a doſe: or an ounce of it is boiled in a pint and half of water to a pint, and drank with milk. The ſtimulating and reſolving principles are ſtronger in *P. Senega*, but this ſeems to abound more in a balſamic reſin [f].

It is more efficacious than our common Milk-wort, but that may be owing in great meaſure to its mountainous or ſubalpine ſituation.

Native of France, Switzerland, Sileſia, Auſtria, Carniola, Piedmont.—Introduced in 1775, by Drs. Pitcairn and Fothergill [g].

Allioni conſiders it as being biennial.

6. The perennial woody root throws out many ſpreading procumbent ſtems, clothed with deep green ſmooth leaves, which vary much in ſize and figure. The flowers, commonly blue, are often white, fleſh-coloured or purple, but in all caſes marked with green lines. The permanent calyx turns at length wholly green, and wraps up the young pod, cloſing and drooping to protect it from rain. So the elegant fringed creſt of the corolla protects the ſtamens and piſtil, admitting air, but ſcarcely wet or inſects [h].

Dr. Withering adds, that the ſtems are four-cornered and undivided; the leaves alternate or in pairs, a little rolled back at the edges, the upper lanceolate, the lower ovate; calyx-leaves lanceolate, concave, coloured; wings of the corolla lanceolate, more fully coloured; ſtandard compoſed of two petals, joined by a hairineſs at the edges; keel cylindrical below, but towards the top expanding into two ſets of club-ſhaped glandular appendages. Filaments in two ſets, like two expanded hands with four fingers in each. Anthers yellow or orange. Style thicker upwards. Stigma with two lips, the one a fleſhy knob, the other lanceolate, concave.

Mr. Miller ſays, three or four ſlender, trailing herbaceous ſtalks about ſix inches long, come out from a perennial root; the leaves are about half an inch long, and an eighth part of an inch broad in the middle.

[Capſule ſmall, obcordate, with a groove on each ſide, compreſſed, bordered with a membrane, marked with minute dots in rows. Seeds ruſty brown, covered with whitiſh villoſe hairs, and having a linear hilum or ſcar on one ſide. The umbilicus or navel has a white glandular caruncle unequally triſid, two ſegments larger and equal, the third ſmaller, all linear-acuminate, reflex, united in form of a little crown on the top of the umbilicus. The form and ſituation of this and the embryo, indicate a near affinity between Polygala and the Tithymali or Spurges, as Adanſon ſuggeſted [i].

Linneus found the common Milk-wort to poſſeſs the properties of *P. Senega*, in an inferior degree. Duhamel uſed it in pleuretic caſes, with the deſired ſucceſs; the powdered root may be given in doſes of half a dram [k].

An infuſion of the herb, ſays Dr. J. E. Smith, taken in a morning faſting, about a quarter of a pint daily, promotes expectoration, and is good in a catarrhous cough. I tried it at Montpellier by the advice of Profeſſor Gouan with ſucceſs, and have ſince known it uſeful [l].

Allioni ſays, it has the ſame properties with *P. amara*, but weaker and with leſs of the balſamic principle; that it is not to be deſpiſed as a ſuccedaneum to P. Senega in the Pleuriſy and Peripneumony, and that it promotes expectoration.

Native of moſt parts of Europe, and of Barbary, in dry healthy paſtures and on rocks, flowering in june and july.

Foreign writers celebrate it as a grateful and nutritious food for cattle. According to the Swediſh experiments, kine, ſheep and goats eat it, but ſwine refuſe it.

With us it is found chiefly in dry barren paſtures, heaths or ſheep-walks.

7. This is extremely allied to the P. vulgaris, but the flowers are always of a bright red-purple: the whole plant is alſo larger and more upright. It is found in great plenty in Auſtria according to Profeſſor Jacquin, who conſiders it as diſtinct from the common Polygala; but confeſſes at the ſame time, that he cannot find any other diſtinguiſhing characters than what are mentioned above; ſo that it may perhaps be conſidered as a remarkable variety.

8. Root annual. Stem herbaceous, commonly branched but ſometimes ſimple. Branchlets filiform; ſmooth. Leaves narrow-lanceolate, ſeſſile, very ſharp, ſometimes almoſt awl-ſhaped, cluſtered in ſome, rather remote in others, quite entire. Flowers pedicelled, nodding after floreſcence: wings lanceolate-elliptic, membranaceous, ſharpiſh, pale roſe-coloured or greeniſh, three-nerved, netted [m].

Villars remarks, that it is very ſmall in all its parts, and that it is ſtraighter and harder than *P. amara*. Crantz and Gerard conſider it as a variety of *P. vulgaris*. N. 5, 6, 7, 8. are indeed very nearly allied.

Native of the South of France, Piedmont and Algiers, on dry barren hills. Cultivated by Mr. Miller, in 1759.

9. Root annual. Stem from half a foot to a foot in height, round, ſmooth, divided above the middle. Branches filiform, erect, leafy, ſmooth. Leaves ſub-

[a] Linn. mant. [b] Idem. [c] Jacquin. [d] Idem. [e] Idem. [f] Allioni, Krocker. [g] Hort. kew. [h] Engl. bot. [i] Gartner. [k] Withering. [l] Engl. bot. [m] Jacquin. [n] Desfontaines.

ſeſſile,

ſeſſile, alternate, acute, entire, dotted, ſmooth. Peduncles or racemes terminating, filiform, erect, many-flowered. Flowers minute, purpliſh, nodding, on very ſhort pedicels. Calyx three-leaved, coloured; hinder leaflet larger, ovate, the two anterior oblong, acuminate. Standard conſiſts of two oblong obtuſe erect petals, covering the keel and wings, and converging in front at top: wings leſs than the ſtandard, pale, lanceolate, converging above the keel; which is alſo leſs than the ſtandard, covered, gibbous at the baſe, four-cleft at the tip, deciduous. Filaments ſhorter than the corolla, diſtinct in front, all united below, white and pellucid. Anthers oblong, yellow. Germ ovate, compreſſed a little, convex, twin. Style thick, curved, like a cornucopia. Stigma funnel-form, obliique, bearded at the anterior tip, pellucid. Seed-veſſel, which Swartz calls a filicle, oblong, emarginate at the tip and baſe, compreſſed, convex, two-celled, opening at the ſides, two-ſeeded. Seeds oblong, convex, brown, hairy; appearing echinated in a magnifier[a].

This beautiful little plant is a native of Jamaica, (and Hiſpaniola.) It has much of the ſmell and taſte of the Senega Snake-root; but is not ſo ſtrong or diſagreeable. It is a mild attenuant and ſudorific, and may be adminiſtered in infuſions or decoctions. It grows generally to the height of ſix or ſeven inches, and is ſeldom branched below the middle[b].

10. This has the habit of the preceding. Lower leaves ovate; upper lanceolate. Raceme ſingle, (ſeldom two) looſe, and without bractes at the baſe of the partial pedicels. Native of Siberia[c].

11. There are four varieties of this, particularly diſtinguiſhed in the Amœnitates academicæ. The firſt has the keel longer than the creſt, the ſtem branched, and linear-lanceolate leaves. The ſecond has the leaves linear-ſubulate, and the keel ſhorter than the creſt, with a larger purple flower. The third has ſubulate leaves, the ſtem quite ſimple, and a ſmaller purple flower. The fourth has the leaves linear blunt and rugged, the ſtem branched, the flowers very ſmall, whitiſh or pale purple.—The ſtem is ſhrubby in all, and the bracles are remarkable; whence the trivial name.

Native of the Cape of Good Hope. Introduced in 1787, by Mr. Francis Maſſon[a]. It flowers from may to july; and is a plant of great ſingularity and beauty: the purple of its flowers is brilliant in the extreme[b].

12. Stem ſcarcely ſuffruticoſe, a ſpan high, ſomewhat branched, erect. Leaves ſcattered, acute, erect, ſcarce manifeſtly ciliate. Flowers terminating, copious, in a ſort of umbel. Peduncles filiform, one-flowered, even, almoſt equal. Calycine petals ovate, acute. Allied to the preceding. It is an annual or biennial plant; native of the Cape of Good Hope[c].]

13. Stem ſhrubby, covered with a ſmooth brown bark, riſing four or five feet high, and ſending out ſeveral ſpreading branches towards the top. Leaves about an inch long and a quarter of an inch broad, lucid green, and ſeſſile. The flowers are produced at the ends of the branches; they are large, white on the outſide, but of a bright purple within: wings expanded wide, and ſtandard incurved. It continues flowering moſt part of the ſummer. Each cell of the ſeed-veſſel contains one hard ſmooth ſhining ſeed. It grows naturally at the Cape of Good Hope. [Cultivated in 1707, by the Dutcheſs of Beaufort[a].

14. The whole plant is villoſe; the branches round and rod-like; the leaves ſubpetioled, alternate, mucronate, ſometimes emarginate, an inch long. Racemes axillary and terminating, an inch and half long. Bractes three-leaved, ovate, minute. Calycine leaflets oblong, acute, unequal. Wings roundiſh, three times as large as the calyx, permanent, pubeſcent. Legume oval, emarginate, ſhorter than the wings. It is very nearly allied to the preceding, but differs in the form of the leaves, in its hairineſs, ſmallneſs of the flowers, and ſhape of the wings, which are rounded, not ovate-rhomboidal, acute[a].

15. This is a ſhrub two feet high, branched at top; branches alternate, erect, without ſcars. Leaves ſeſſile, quite entire, ſmooth. Racemes terminating, ſhort. Calycine petals ſubcordate, red, large. Capſule like that of *Thlaſpi*, compreſſed, orbicular, emarginate, bordered. It is allied to *P. myrtifolia*, and has the leaves of *Penæa*.

Native of the Cape of Good Hope, in the mountains, flowering in auguſt[a].

16. This is a ſtout ſhrub, with the branches terminated by a ſtrong ſpine. Flowers axillary, ſeſſile, ſmall, white with a red keel. The fruit is an eſculent berry.—Native of the Cape[a].

β. This variety is placed by Linnæus and Miller under another genus, that of Ulex.] Stem woody and hard, covered with a greeniſh bark when young, but afterwards becoming grayiſh. Branches ſlender and woody. Shoots terminating with ſpines. Native of the Cape.

[17. Found at the Cape of Good Hope, by Thunberg[a].

18. Stem white at bottom, as in *Betula* or the Birch-tree. Native of Japan and Java[a].

19. Stem green, even, branched, high. Leaves ſeſſile, acute, ſmall. Peduncles axillary, briſtle-ſhaped. Flowers ſmall. Capſules oblong, two-horned at the tip. Native of the Cape of Good Hope[a].

20. Native of South America. A ſhrub[a].

21. This is a ſmall tree, with looſe rod-like branches, ſubdivided, even, round. Leaves alternate, elliptic, acuminate, blunt at the tip, entire, ſmooth on both ſides, on ſhortiſh petioles. Flowers axillary, crowded. Peduncles axillary, longer than the petioles, ſcaly, many-flowered. Corollas ſmall, greeniſh white. Calyx three-leaved: leaflets ovate, green, permanent; one ſuperior. Standard of the corolla of two lower, reflex, whitiſh petals: wings large, ovate, on the outſide of the ſtandard and keel, ſimilar to the calyx-leaves, permanent: keel larger than the ſtandard, concave, green. Filaments open in front, free at the top, very minute. Anthers minute. Germ roundiſh, compreſſed. Style the length of the ſtamens. Stigma obtuſe. Seed-veſſel or ſilicle pedicelled, roundiſh, compreſſed, emarginate. Seeds reniform-oblong.—Native of Jamaica, in woods, but not common[a].

Browne calls it Baſtard *Lignum Vitæ* of the red hills, where this ſhrub grows very plentifully, generally riſing to the height of ſeven or eight feet, or more. It is called there Baſtard *Lignum Vitæ*, becauſe it taſtes not unlike the gum of that wood, and is ſometimes uſed for the ſame purpoſes.

Swartz does not ſee why Linnæus named it *diverſifolia*, the leaves being all alike; the reaſon however, whether well-founded or not, is apparent from the ſpecific character.

22. Stems rod-like, a foot high, filiform, green, toothed with the baſes of the deciduous leaves. Theſe are the ſmalleſt of any, alternate, remote, ſeſſile, awl-ſhaped or elliptic. Racemes terminating, ſhort. Flowers rather large.

Native of Spain and Portugal. *Aſtroemer*[a].

23. Stem ſtriated a little. Leaves alternate, diſtinct, veinleſs, naked, an inch long, articulated as it were into the petiole. Racemes terminating, two or three, often longer than the leaves. Standard of the corolla blue. Capſules ovate, wrinkled, pendulous, hard.

Native of New Granada, found there by Mutis[a].

24. Stem erect, round, ſoftly hairy. Leaves on very ſhort petioles, an inch long, ſmooth above, ſomewhat hairy underneath. Racemes both oppoſite to the leaves and terminating, three or four inches long, villoſe. Peduncles toothletted from the fall of the flowers. Bractes minute, deciduous. Flowers nodding, a little larger than thoſe of the common ſort. Calyx-leaves ovate, concave. Wings green. Keel violet. Capſules oblong, ſmooth. Seeds villoſe

[a] Swartz. [b] Browne. [c] Linn. ſpec.
[a] Hort. kew. [b] Curtis. [c] Linn. mant.
[c] Hort. kew.

[a] Vahl. [b] Linn. mant. [c] Idem, and ſyſt.
[d] Linn. ſuppl. [e] Linn. ſyſt. and mant. [f] Linn. ſuppl.
[g] Linn. ſpec. [h] Swartz. [i] Linn. ſpec.
[k] Linn. ſuppl.

backwards,

backwards, oblong, cylindric. It is different from *P. violacea* of Aublet, which has crested flowers, and a herbaceous ſtem. Found by von Rohr in Cayenne[m].

25. Stems a foot high, decumbent, woody, not ſmooth. Leaves quite entire, the ſize of the outer joint of the thumb, ſubpetioled, naked, blunt with a point. Branches lateral, very thinly diſpoſed. Spikes lateral, often longer than the leaves, green.

Native of the Eaſt Indies[n]. How comes this to be the ſame with the larger Polygala of Browne, which he found in the woods of St. Elizabeth's, Jamaica, and is frequently above twenty feet in height?]

26. This riſes with a ſlender, branching, woody ſtalk, about a foot high, when it grows upon good ground, but on a rocky ſoil it is ſeldom more than half that height. The branches are cloſely garniſhed with ſtiff, ſmooth leaves, of a lucid green. From between the leaves, towards the top of the branches, the flowers come out upon very ſhort peduncles; they are white on the outſide, but within are of a purpliſh colour mixed with yellow, and have a grateful odour. The ſeed-veſſels are ſhaped like thoſe of P. myrtifolia.

[It is an elegant little evergreen ſhrub of low growth, with leaves like thoſe of Box, producing flowers from may to october, but moſt plentifully in may and june. Each flower ſtands on a peduncle proceeding from a kind of triphyllous cup, formed of floral leaves; the true calyx is compoſed of three leaves, which are nearly white; the two outermoſt petals, ſimilar to the wings of a papilionaceous flower, are alſo white, or nearly ſo; the third petal, which forms a kind of tube, and contains the ſtamens and piſtil, is white at the baſe, but yellow towards the extremity, where it changes by degrees to a bright bay colour.—Cluſius gives an accurate deſcription and good figure of this plant, which was before unnoticed by any author[o].

Villars remarks, that the keel or lower petal has two little ears at its extremity; and that the plant bears little reſemblance to the preceding European ſpecies. Tournefort, Haller and others have conſidered it as of a different genus.

It differs, according to Scopoli, from the others, by its three-leaved perianth; the upper leaf convex, covering the germ and an elliptic cavity, left by the upper gape of the tube of the corolla and the curved baſes of the wings. Corolla one-petalled, with the tube gaping at the baſe on the upper ſide, where the germ is; the border trifid, the two upper ſegments like wings, the lower ovate, longer, contracted behind, having two little ears at top. Filaments four on each ſide, ſlightly united at the baſe. Style flaccid. Stigma cylindric, bifid; the upper ſegment tubular, larger, the lower acuminate. Capſule margined, rugged, naked.

Cluſius and Jacquin mention a variety of this plant, with the calyx and wings of a beautiful purple. Scopoli has noticed four varieties: 1. With white wings, and a yellow keel. 2. With white wings, and the keel red at the tip. 3. With red wings and the tip of the keel yellow. 4. With red wings and keel, but the tip of the latter variegated with red and yellow.

Native of Auſtria, Switzerland, Alſace, Germany, Dauphiné, and Italy, in mountains.—Cultivated in 1658, in the botanic garden at Oxford[p].

27. Stem ſhrubby, procumbent, branched: the branches covered with leaves and flowers. Leaves very much crowded, at each point three or five, ſeſſile, not rigid, hairy underneath and at the edge. Flowers among the leaves, ſhorter than the leaf. Calyx glumoſe, ſmooth, like that of *P. Heiſteria*. Native of the Cape of Good Hope[q].

28. This is a ſhrub extremely reſembling the preceding ſpecies, but with the leaves of *P. Heiſteria*, cylindric, very much crowded, mucronate, even, not ovate-lanceolate or ciliate or flat. The flowers are like thoſe of *Alopecuroides*, and not of *Heiſteria*. Native of the Cape.

29. Stem fruteſcent, rod-like. Buds alternate, from each briſtle. Leaves numerous, ſeſſile, ſpreading or reflex, ſtiffiſh like thoſe of Androſace. Flower from little leafy roſes, often ſolitary, purpliſh, like that of *P. Heiſteria*.

Native of the Cape[r].

30. This is a polymorphous plant, when young very different from what it is when it becomes old: α, with ovate leaves, ciliate on the edge and keel—β, with linear rugged leaves—γ, with awl-ſhaped hairy leaves.—Fruit four-horned[s].

In the courſe of a few years it becomes a ſhrub of conſiderable ſize, equalling a ſmall furze bu h, to which it bears a diſtant reſemblance; and perhaps *furze-leaved* would have been a more expreſſive name than heath-leaved.

The purple of the flowers is brilliant in the extreme, and they are plentifully produced almoſt the year through.

After receiving various names, this plant has been finally placed in the genus *Polygala*; it retains the trivial name of *Heiſteria*, which had been beſtowed on it, in honour of Profeſſor Heiſter, the celebrated German Surgeon.

In Holland it appears to have been long ſince known, but was a ſtranger here[t], till introduced from the Cape of Good Hope by Francis Maſſon, in 1787[u].

31. Stem filiform. Leaves ſeſſile, ternate, linear-ſubulate, flatiſh, mucronate, the middle one longer than the two others. Calyx glumoſe as in *P. Heiſteria*. Fruit in this genus different in the ſeveral ſpecies; but in this ſpecies very much reſembling that of *P. Heiſteria*, of which this plant was originally the daughter. Native of the Cape of Good Hope[x].

32. Root perennial, woody, branched, contorted, about the thickneſs of a finger, and covered with aſh-coloured bark. It ſends up ſeveral ſtems, which are ſimple, erect, ſlender, round, ſmooth, of a dark red-diſh colour, and about a foot in height. Leaves alternate, acute, pale green, on ſhort footſtalks[y].] The flowers are produced in looſe terminating ſpikes; they are ſmall, white, and ſhaped like thoſe of the common ſort, but their keel has no beard or creſt. It flowers here in july, but does not produce ripe ſeeds. It grows naturally in moſt parts of North America, [and was cultivated by Mr. Miller, in 1759[z].

The root of this plant, under the name of Rattle-ſnake root was firſt introduced to the attention of phyſicians near ſeventy years ago, by Dr. John Tennent, whoſe intercourſe with the Indians led him to diſcover that they poſſeſſed a ſpecific remedy for the bite of the Rattle-ſnake, which for a reward was revealed to him, and found to be the root of this plant. He was afterwards fully convinced of the efficacy of this medicine from his own experience: and obſerving that pleuretic or peripneumonic ſymptoms were generally produced by the action of this poiſon, he inferred that this root might be an uſeful remedy in ſuch diſorders. It was accordingly tried in pleuriſies, not only by Tennent himſelf, but by ſeveral French academicians and others; who all unite in teſtimony of its good effects. However, in many of theſe caſes, recourſe was had to the lancet. The repute which this root obtained in peripneumonic affections, induced ſome to employ it in other inflammatory diſorders, particularly in rheumatiſm. It has been preſcribed with much ſucceſs in dropſies; and this we can the more eaſily credit, from its effects in increaſing the different ſecretions; for it produces a plentiful ſpitting, increaſes perſpiration and urine, and frequently purges or vomits. It is likewiſe reported to be a medicine of great power, in rendering the fizineſs of the blood more fluid: De Haen however brings a ſtrong fact to contradict this report. The uſual doſe is from one ſcruple to two of the powder; or two or three ſpoonfuls of a decoction, prepared by boiling an ounce of the root in a pint and half of water, till it is reduced to a pint. A little Madeira wine is moſt effectual for removing

[m] Vahl. [n] Linn. ſpec. [o] Curtis. [p] Hort. kew. [q] Linn. mant. [r] Linn. ſuppl. [s] Berg. in Linn. ſpec. [t] Curtis. [u] Hort. kew. [x] Linn. mant. [y] Woodville. [z] Hort. kew.

the pungent taſte, and making the medicine ſit eaſy on the ſtomach[a].

Ray informs us, that Krieg gathered it in Maryland, but its virtues were not then known.

33. Leaves not unlike thoſe of the common ſort, frequent on the ſtem. Spike terminating, large for the ſize of the plant, compoſed of yellow flowers cloſely ſet on it. Vernon brought it from Maryland[b]. Petiver gives it the epithet of *virginiana*, and Plukenet of *floridana*, it is therefore probably a native of moſt parts of North America. Linnæus marks it as annual.

34. Root annual. Stem a ſpan or a foot high, angular, without any branches. Leaves alternate, linear or linear-lanceolate, even, quite entire. Head of flowers terminating, ſubglobular, greeniſh with a mixture of duſky red in the wings of the flower. Native of Virginia[c].

35. Stem the length of the finger, without branches. Leaves quite entire, long, acute. Flowers axillary, on ſolitary branched peduncles, commonly three-flowered, ſhorter than the leaf. Corolla white. Annual. Native of Ceylon.

36. This has the appearance of our common Milkwort. Stems ſeveral, filiform, undivided, quite ſimple, a finger's length. Leaves obovate, ſomewhat oblong, ſmooth, ſcarcely petioled. Raceme axillary, capillary, containing a few white flowers, ſhorter than the leaves, branchletted, not racemed or ſpiked. Native of Ceylon. Perennial.

37. Root annual. Stem a finger's length, tender, angular, branched. Leaves ovate-lanceolate, ſeſſile, ſmooth, quite entire. Spikes longiſh, pedunculed. Flowers ſeſſile, directed one way. The calyx has five acute ſmall leaflets, and hence recedes from the other ſpecies. Seeds globular.

Native of Ceylon, being found in Herman's herbarium[d], now in the poſſeſſion of Sir Joſeph Banks.

It varies with heart-ſhaped leaves, and ſtems half a foot high and branched[e].

38. Root annual. Stem from a ſpan to a foot in height, firm, angular, with the branches higher than the ſtem. Leaves alternate, narrow-lanceolate. Spikes terminating, looſe, blood-red, ovate. The lower flowers, when mature, drop off, whilſt new ones are coming on, whence the peduncle is jagged or ſquarroſe. Native of Virginia[f].

39. Root annual. Leaves commonly five at a joint, ſometimes alternate. Spikes white, very narrow, with the flowers remote. Stem ſlender[g].

This little plant is exceedingly branched, and at each joint puts forth four or five narrow oblong leaflets. On the tops of the ſtems and branches it produces ſlender oblong ſpikes compoſed of whitiſh flowers.

Native of Maryland. Probably it does not differ from P. quadrifolia minor *Virginiana*, ſpica parva rubente. *Bauh. cat. virg.*[h] If ſo, it is a native of that province alſo.

40. The head of flowers is of a green ruſeſcent colour[i]. Native of Virginia.

41. This is a procumbent branched ſhrub. The older branches are tubercled and jointed; the younger ones are ſmooth. Leaves perennial, very ſmooth, alternate, ſubſeſſile. Flowers raceme-headed, terminating; each pedicelled, the ſame ſize with the common ſort. Calyx five-parted; the three outer parts ſmall, concave, oblong; the two inner much larger, elliptic, coloured, whitiſh at the edge, greeniſh in the middle, ſubpedicelled, reſembling wings. Corolla two-lipped: upper lip cloven, longer than the lower, appendicled, with narrow ſegments ſomewhat bowed; lower lip keeled, two-lobed at top and fringed. Stamens in two bundles. Capſule flat, obcordate, two-celled, two-ſeeded.

Native of mount Atlas, in fiſſures of rocks; flowering early in ſpring.

42. Stems frequently very much branched: branchlets filiform, pubeſcent. Leaves alternate, ſcattered, ſmooth, perennial; lower elliptic, blunt; branch-leaves narrow-lanceolate, ſubſeſſile. Flowers like thoſe of the preceding; from which it differs in having lanceolate leaves, more ſlender and acute, and pubeſcent branchlets. Native of the ſame places.

43. Stems ſeveral from the ſame common tuft, ſmooth, ſlender, erect. Leaves alternate, ſmooth; thoſe next the root elliptic, blunt; the upper ones lanceolate, acute. Flowers pedicelled, nodding after flowering time. Wings elliptic, blunt, bright roſe-coloured, netted, a little larger than thoſe of the common ſort. Calyx five-parted: the three outer ſegments ſmall and ſubulate; the two inner roſe-coloured, ovate, blunt, reſembling petals. Corolla tubular: upper lip two-lobed; lower fringed at the top, bright roſe-coloured, often exceeding the wings. Capſule flat, obcordate, with a membranaceous rim, two-celled, two-valved. Seeds brown, oblong, pubeſcent, warted at top. It is allied to the common ſort, but is larger in all its parts: and the ſtem is fruteſcent at the baſe. Native of mount Atlas near Tlemſen[k].]

44. Root perennial. Stems two or three, about eight inches high, dividing into ſeveral erect branches. Leaves ſmall, of a dark green colour. Flowers ſmall, of a purpliſh blue colour. Native of Maryland.

45. Root perennial, taper, running deep in the ground. Stems ſeveral, ſlender, ſix or ſeven inches high. Leaves an inch long, and half an inch broad in the middle, drawing to a point at both ends. The flowers are produced in looſe ſpikes; they are larger than thoſe of the common ſort, and of a blueiſh purple colour. It was diſcovered by Dr. Houſtoun at Vera Cruz in New Spain.

PROPAGATION AND CULTURE.

5, 6, 7, 8. Sow the ſeeds ſoon after they are ripe. They are rarely admitted in gardens, nor do they thrive well there.

13. This plant is propagated by ſeeds, which ſhould be ſown in ſmall pots, filled with light loamy earth; ſoon after they are ripe, theſe pots may be placed where they may have the morning ſun only till October, when they ſhould be placed under a hot-bed frame, and plunged into old tanners bark, which has loſt its heat, where they may be defended from froſt during the winter, and in the ſpring the pots ſhould be plunged into a moderate hot-bed, which will bring up the plants. When theſe appear, they ſhould not be too tenderly treated, but muſt have a large ſhare of free air admitted to them; when they are fit to tranſplant, they ſhould be carefully ſhaken out of the pots, and ſeparated, planting each into a ſmall pot filled with ſoft loamy earth, and plunged into a very moderate hot-bed to forward their taking new root, obſerving to ſhade them from the ſun, and gently refreſh them with water as they may require it, but they muſt not have too much wet. When they are rooted, they muſt be gradually inured to the open air, and in June they may be placed abroad in a ſheltered ſituation, where they may remain till the middle or latter end of October, according as the ſeaſon proves favourable; then they muſt be removed into the green-houſe; and treated in the ſame way as Orange-trees, being careful not to give them too much wet during the winter ſeaſon. In the ſummer they muſt be placed abroad with other green-houſe plants, where, by their long continuance in flower, they will make a fine appearance.

[This, and the other Cape ſorts (11, 12, 15, 16, 17, 19, 27, 28, 29, 30, 31) may be increaſed by cuttings, ſome more readily than others.]

26. This plant is very difficult to cultivate in gardens, for it commonly grows out of the fiſſures of rocks, ſo cannot be eaſily tranſplanted, and the ſeeds are with difficulty obtained from abroad; nor do theſe vegetate till they have been a whole year in the ground, unleſs they are ſown ſoon after they are ripe, when the plants will come up the ſpring following; when the plants firſt come up, they make very little progreſs here, and are as difficult to tranſplant as almoſt

[a] Woodville. [b] Ray. [c] Linn. ſpec.
[d] Linn. zeyl. [e] Linn. ſpec. [f] Id. ib.
[g] Id. ib. [h] Ray. [i] Linn. ſyſt.
[k] Desfontaines.

any plant at preſent known, which occaſions its preſent ſcarcity in England.

The beſt method of cultivating this is by ſeeds, which ſhould be procured as freſh as poſſible from the places of its natural growth, and ſown in pots as ſoon as it arrives; the pots may be plunged into the ground, where they may have only the morning ſun. If the ſeeds are ſown before Chriſtmas, there will be a chance of the plants coming up the following ſpring; but thoſe which are not ſown till towards ſpring, will remain in the ground a year; therefore the pots ſhould be plunged into the ground, where they may have but little ſun the following ſummer, and in autumn they may be removed, and plunged into an old tan-bed under a hot-bed frame, where they may be protected from ſevere froſt; for although this plant is a native of the Alps and other cold mountains, yet as the ſeeds will not be covered with ſnow here, as they are in their native ſoil and ſituation, they are frequently ſpoiled by the inconſtancy of the weather in England. When the plants come up, they ſhould be placed in ſhade during ſummer; and in autumn they may be turned out of the pots, and planted in a border where they may have only the morning ſun, for this plant will not thrive long in pots. If the winter proves very ſevere, it will be proper to cover the ſurface of the ground about their roots with mulch to keep out the froſt. If the plants take root in the border, they ſhould remain there undiſturbed, and be only kept clean from weeds, for the ground about their roots ſhould not be dug or dunged.

[Boxleaved Milkwort is not now regarded as a plant difficult of cultivation.' It has creeping roots, and ſuch plants are generally increaſed without difficulty, and ſo is this. Planted in bog earth on a ſhady border, it thrives extremely well, and ſpawns much, ſo that there is no neceſſity of having recourſe to its ſeeds'].

3t. The ſeeds of the Snake-root Milk-wort rarely ſucceed; the beſt way therefore to propagate it, is to procure the roots from America, and to plant them in a bed of light earth, in a ſheltered ſituation. In ſummer keep them clean from weeds, and cover the ſurface of the ground about their roots with old tanners' bark, or any other kind of mulch, in winter, to keep out the froſt.—Theſe directions apply to the forty-fourth ſpecies.

45. This is too tender to live in the open air in England, and not thriving in a pot, is difficult to preſerve here. It is propagated by ſeeds procured from abroad. The ſeeds ſent by Houſtoun remained a year in the ground before the plants appeared, and the plants lived only one year.

[POLYGALA. See *Coronilla, Illecebrum, Viola.*

POLYGALOIDES. See *Polygala.*

POLYGALON. See *Coronilla* and *Hedyſarum.*

POLYGALUM. See *Coronilla.*]

POLYGONATUM. See *Convallaria* [and *Uvularia.*

POLYGONIFOLIA. See *Corrigiola.*

POLYGONI GENUS. See *Illecebrum.*

POLYGONOIDES. See *Cullignonum.*

POLYGONUM (*of Pliny*, Πολυγονον *of Dioſcorides. From* πολυ *and* γονυ; *on account of the many knots in the ſtalks*).

Lin. gen. n. 495. *Reich. n.* 537. *Schreb. n.* 677. *Tourn. t.* 290. *Juſſ.* 82. *Gærtn. t.* 119. Biſtorta. *Tourn. t.* 291. Perſicaria. *Tourn. t.* 290. *Gærtn. t.* 119. Fagopyrum. *Tourn. t.* 290. *Gærtn. t.* 119. Helxine *edit. prior.*

Claſſ. 8. 3. Octandria Tryginia.

Nat. order of *Holoraceæ. Polygoneæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* turbinate, coloured internally, five-parted; *ſegments* ovate, blunt, permanent.

COR. none, unleſs the calyx be taken for it.

STAM. *Filaments* commonly eight, awl-ſhaped, very ſhort. *Anthers* roundiſh, incumbent.

PIST. *Germ* three-ſided. *Styles* commonly three, filiform, very ſhort. *Stigmas* ſimple.

PER. none. *Calyx* involving the ſeed.

SEED ſingle, three-ſided, acute.

OBS. Stamens *in ſome ſix, in others ſeven, in others five.* Piſtil *in ſome ſpecies biſid.*

P. fruteſcens *has a two-leaved calyx, and three petals.*

ESSENTIAL CHARACTER.

Cal none (or five-parted, coloured.) *Cor.* five-parted, calycine: (or none, if this be conſidered as the calyx.) *Seed* one, angular.

SPECIES.

* Atraphaxoides, *with a fruteſcent ſtem.*

1. Polygonum fruteſcens. *Shrubby Polygonum.*
Lin. ſpec. 516. *ſyſt.* 376. *Reich.* 2. 203. *hort. upſ.* 95. *Gærtn. fruct.* 2. 182. *Willich illuſtr. n.* 8. *Gmel. ſib.* 3. 60. *t.* 12. *f.* 2.

Atraphaxis inermis foliis planis. *Lin. hort. cliff.* 138.

Lapathum orientale, frutex humilis, flore pulchro. *Tournef. cor.* 38.

L. dauricum montanum fruticans, ramis late ſparſis. *Amm. ruth.* 227.

Stem ſhrubby, calycine leaflets two reflex.

2. Polygonum atraphaxoides.
Thunb. prodr. cap. 77.

Atraphaxis undulata. *Lin.* & *Dill. noſtr.*

Polygonum undulatum. *Berg. cap.* 135.

Flowers hexandrous digynous, leaves ovate waved.

** Biſtortæ, *with a ſingle ſpike.*

3. Polygonum Biſtorta. *Great Biſtort* or *Snakeweed.*
Lin. ſpec. 516. *ſyſt.* 376. *Reich.* 2. 204. *mat. med.* 421. *Woodv. med. hot.* 100. *t.* 34. *Hudſ. angl.* 168. *Wither. arr. ed.* 3. 382. *Smith angl.* 427. *Engl. bot. t.* 509. *Curt. lond.* 1. 22. *Lightf. ſcot.* 206. *Relh. cant. n.* 302. *Sibth. oxon. n.* 380. *Abbot, hedf.* 88. *Fl. dan. t.* 421. *Hall. helv. n.* 1559. *Pollich pal. n.* 382. *Villars dauph.* 3. 519. *Allion. pedem. n.* 2045. *Krock. ſilef. n.* 603. *Gmel. ſib.* 3. 40. *Thunb. jap.* 163. *Ludw. teſt. t.* 31. *Kniph. cent.* 1. *n.* 65. *Blackw. t.* 354. *Mill. fig. t.* 66. *Plenck, ic.* 306. *Regn. bot.*

Biſtorta. *Lin. hort. cliff.* 150. *upſ.* 95. *Camer. epit.* 683. *Matth.* 946. *Daleeb.* 1285. *Dod. pempt.* 333.

B. major. *Cluſ. hiſt.* 2. 69. 1. *Trag.* 321. *Ger.* 322. 1. *emac.* 399. 1. *Raii hiſt.* 186. *ſyn.* 147.—vulgaris. *Lob. obſ.* 156. 3. *Park. theat.* 392. 1.—rugoſioribus foliis. *Baub. hiſt.* 3. 539. 1.]—radice minus intorta. *Baub. pin.* 192. *Mor. hiſt. ſ.* 5. *t.* 28. *f.* 2. *ord.* 3. *Mill. dict. ed.* 7.

[Serpentaria femina & colubrina. *Fuchſ. hiſt.* 774.

Colubrina. *Lonic.* 1. 202. 3.

β. B. media folio minus rugoſo. *Baub. hiſt.* 3. 539. *Raii hiſt.* 186.

B. major radice magis intorta. *Baub. pin.* 192. *Park. theat.* 391. *n.* 2.

B. latifolia. *Ger.* 322. 3.

Serpentaria mas ſ. Biſtorta. *Fuchſ.* 773.

Stem quite ſimple with a ſingle ſpike, leaves ovate waved decurrent.

4. Polygonum viviparum. *Small* or *Alpine Biſtort* or *Viviparous Snakeweed.*
Lin. ſpec. 516. *ſyſt.* 376. *Reich.* 2. 204. *fl. ſuec. n.* 340. *Hudſ. angl.* 169. *Wither. arr. ed.* 3. 383. *Smith angl.* 428. *engl. bot. t.* 669. *Lightf. ſcot.* 206. *Fl. dan. t.* 13. *Gunn. norv. n.* 9. *Hall. helv. n.* 1558. *Scop. carn. n.* 470. *Villars dauph.* 3. 520. *Allion. pedem. n.* 2046. *Krock. ſilef. n.* 605. *Gmel. ſib.* 3. 44. *t.* 7. *f.* 2. *Kniph. cent.* 2. *n.* 61.

Biſtorta foliis lanceolatis. *Lin. lapp. n.* 152. *hort. cliff.* 150.

B. montana minor, &c. *Amm. ruth.* 169.

B. alpina media. *Baub. pin.* 192. *Pluk. phyt. t.* 151. *f.* 2. *Raii hiſt.* 187.

B. alp. minor. *Baub. pin.* 192. *Amm. ruth.* 169.

B. alp. minima. *Hall. opuſc.* 234. *Baub. hiſt.* 3. 539. 1.

B. alp. ſ. minor. *Camer. epit.* 684.

B. minor. *Cluſ. hiſt.* 2. 69. 2. *Ger.* 322. 2. *emac.* 399. 2. *Park. theat.* 392. 4. *Raii hiſt.* 187. *ſyn.* 147. *Petiv. brit. t.* 5. *f.* 2. *Mor. hiſt. ſ.* 5. *t.* 28. *f. ult.*

β. B.

[1] Curtis, magaz.

β. B. minima alpina, foliis imis ſubrotundis & minutiſſime ſerratis. *Raii ſyn.* 147.
Welch Biſtort. *Petiv. brit. t.* 5. *f.* 3.
Stem quite ſimple with a ſingle ſpike, leaves lanceolate rolled back at the edge.
*** Perſicariæ, *with a biſid piſtil, or fewer ſtamens than eight.*
5. Polygonum virginianum. *Virginian Polygonum,* or *ſpotted Virginian Arſmart.*
Lin. ſpec. 516. *Reich.* 2. 205. *hort. cliff.* 42. *Gron. virg.* 43. *Woch. ultr.* 258. (Perſicaria.)
Perſicaria virginiana. *Gert. fruct.* 2. 180.
Perſ. fruteſcens maculoſa virg. flore albo. *Park. theat.* 857. *f.* 6, 7. *Mor. hiſt.* 2. 589. *Raii hiſt.* 183.
Flowers pentandrous ſemidigynous, corollas quadrifid unequal, leaves ovate
6. Polygonum lapathifolium. *Pale-flowered Perſicaria,* or *pale-leaved dead Arſmart.*
Lin. ſpec. 517. *ſyſt.* 377. *Reich.* 2. 205. *Ait. kew.* 2. 30. *Smith. angl.* 425. *Sibth. oxon. n.* 383. *Abbot, beſſ.* 89.
P. penſylvanicum. *Curt. lond.* 1. *t.* 24, 25. *Hudſ. angl. ed.* 1. 148. *Relh. cant. n.* 305.
P. perſicaria ζ. *Hudſ. angl.* 170.
P. pallidum. *Wither. arr. ed.* 3. 381.
Perſicaria mitis major, foliis pallidioribus. *D. Bobarti. Raii ſyn.* 145.
Hydropiper. *Lob. ic.* 315. 1. *Ger. emac.* 445.
β. Caule et floribus rubris. *Curtis ſub. t.* 25.
γ. Caule maculato. *Curtis t* 25.
Perſicaria latifolia geniculata, caulibus maculatis. *Dillen. in Raii ſyn.* 145.
δ. Foliis ſubtus incants. *Curtis ſub. t.* 25.
Perſ. maculoſa procumbens, fol. ſubtus incanis. *Dillen. in Raii ſyn.* 146.
White branched Arſmart. *Petiv. brit. t.* 3. *f.* 10.
Flowers hexandrous digynous, peduncles rugged, ſtipules awnleſs, ſeeds concave on each ſide.
7. Polygonum amphibium. *Amphibious Perſicaria.*
Lin. ſpec. 517. *ſyſt.* 377. *Reich.* 2. 205. *fl. ſuec. n.* 341. *Hudſ. angl.* 169. *Wither. arr. ed.* 3. 379. *Smith, angl.* 423. *engl. bot. t.* 436. *Curt. lond.* 4. *t.* 28. *Lightf. ſcot.* 207. *Relh. cant. n.* 303. *Sibth. oxon. n.* 381. *Fl. dan. t.* 282. *Hall. helv. n.* 1565. *Pollich pal. n.* 383. *Neck. gallob.* 186. *Villars dauph.* 3. 520. *Krock. ſileſ. n.* 606. *Gmel. ſib.* 3. 46. *Allion. pedem. n.* 2047.
Perſicaria Salicis folio perennis, Potamogiton anguſtifolium dicta. *Raii ſyn.* 145. *hiſt.* 184. *Tournef. inſt.* 509.
Potamogeiton anguſtifolium. *Ger.* 675. 2. *emac.* 821. 2. *Tabern.* 740.
Pot. Salicis folio. *Baub. pin.* 139. *Mor. hiſt. ſ.* 5. *t.* 29. *f.* 2.
Pot. ſeu Fontalis Perſicariæ foliis. *Baub. hiſt.* 3. 777.
Fontalis major longifolia. *Park. theat.* 1254. 2.
F. ſ. Potamogeton. *Dod. cereal.* 227.
Amphibious Arſmart. *Petiv. brit. t.* 3. *f.* 12.
Flowers pentandrous ſemidigynous, ſpike ovate.
8. Polygonum filiforme.
Lin. ſyſt. 377. *Thunb. jap.* 163.
Flowers pentandrous digynous, ſpikes filiform, leaves ovate, ſtipules ciliate.
9. Polygonum ocreatum. *Spear-leaved Polygonum.*
Lin. ſpec. 517. *ſyſt.* 377. *Reich.* 2. 206. *Gmel. ſib.* 3. 51. *n.* 39. *t.* 8. (Perſicaria.)
Flowers pentandrous trigynous, leaves lanceolate.
10. Polygonum Hydropiper. *Water* or *biting Perſicaria* or *Arſmart.*
Lin. ſpec. 517. *Reich.* 2. 206. *mat. med.* 104. *fl. ſuec. n.* 343. *Hudſ. angl.* 170. *Wither. arr. ed.* 3. 379. *Smith, angl.* 426. *Lightf. ſcot.* 207. *Relh. cant. n.* 306. *Sibth. oxon. n.* 384. *Curt. lond.* 1. *t.* 26. *Hall. helv. n.* 1554. *Scop. carn. n.* 467. *Pollich pal. n.* 384. *Neck. gallob.* 185. *Leers herborn. n.* 297. *Krock. ſileſ. n.* 607. *Villars dauph.* 3. 521. *Allion. pedem. n.* 2050. *Gmel. ſib.* 3. 50. *Lour. cochinch.* 240. *Blackw. t.* 119. *Trew. comm. nor.* 1737. *t.* 5. *f.* 7, 8. *Ludw. ect. t.* 168. *Plenck, ic.* 308.]
Perſicaria ſol. lanceolatis, flor. hexandris, ſtylo bifido. *Mill. dict. ed.* 7. *n.* 1.
Perſicaria urens ſ. Hydropiper. *Bauh. pin.* 101. *Tournef. inſt.* 509. *Mor. hiſt. ſ.* 5. *t.* 29. *f.* 6.
[P. vulgaris acris ſ. Hydropiper. *Bauh. hiſt.* 3. 780. *Raii hiſt.* 182. *ſyn.* 144.
P. vulg. acr. ſ. minor. *Park. theat.* 856. *n.* 1.
Hydropiper. *Fuchſ. hiſt.* 843. *Matth.* 583. *Dod. pempt.* 607. *cer.* 269. *Ger.* 361. *emac.* 445.
Common Arſmart. *Petiv. brit. t.* 3. *f.* 5.
Flowers hexandrous ſemidigynous, leaves lanceolate waved unſpotted, ſpikes ſiliform nodding, ſtem erect.
11. Polygonum Perſicaria. *Spotted Perſicaria, Dead* or *Spotted Arſmart.*
Lin. ſpec. 518. *ſyſt.* 377. *Reich.* 2. 207. *fl. ſuec. n.* 342. *Hudſ. angl.* 169. *Wither. arr. ed.* 3. 380. *Smith, angl.* 424. *Curt. lond.* 1. *t.* 23. *Lightf. ſcot.* 207. *Relh. cant. n.* 304. *Sibth. oxon. n.* 382. *Fl. dan. t.* 702. *Hall. helv. n.* 1557. *Pollich pal. n.* 385. *Neck. gallob.* 185. *Leers herborn. n.* 298. *Scop. carn. n.* 468. *Krock. ſileſ. n.* 608. *Villars dauph.* 3. 521. *Allion. pedem. n.* 2048. *Gmel. ſib.* 3. 47. *Lour. cochinch.* 240. *Plenck, ic.* 307. *Blackw. t.* 118. *Kniph. cent.* 4. *n.* 63.
Perſicaria floruni ſtaminibus ſenis, ſtylo ſimplici. *Lin. hort. cliff.* 42. *Gron. virg.* 157.]
Perſ. flor. hexandris digynis, ſpicis ovatis oblongis, fol. lanc. acutis. *Mill. dict. ed.* 7. *n.* 2.
Perſ. mitis. *Bauh. hiſt.* 3. 779. *Lin. lapp. n.* 71.
Perſ. vulgaris mitis ſ. maculoſa. *Park. theat.* 857. 2.
Perſ. mitis macul. & non maculoſa. *Bauh. pin.* 101.
[*Trew. comm. nor.* 1737. *t.* 5. *f.* 3—6. *Mor. hiſt. ſ.* 5. *t.* 29. *f.* 1, 2.
Perſ. maculoſa. *Ger.* 361. 2. *emac.* 445. 2. *Raii hiſt.* 183. *ſyn.* 145.
Spotted Arſmart. *Petiv. brit. t.* 3. *f.* 37.
β. Perſ. folio ſubtus incano. *Tournef. inſt.* 510. *Dillen. in Raii ſyn.* 145. *Lin. ſpec.* 518. γ. *Hall. helv. n.* 1556.
Spotted hoary Arſmart. *Petiv. brit. t.* 3. *f.* 8.
γ. Perſ. foliis Salicis albæ vulgaris. *Buddl. hort. ſicc.* 4. *f.* 20. *Dillen. in Raii ſyn.* 145.
Silver Arſmart. *Petiv. brit. t.* 3. *f.* 9.
Flowers hexandrous ſemidigynous, ſpikes ovate-oblong erect, peduncles even, ſtipules ciliate.
12. Polygonum minus. *Small creeping Perſicaria.*
Hudſ. angl. ed. 1. 148. *Curt. lond.* 1. *t.* 28. *Wither. arr. ed.* 3. 380. *Smith, angl.* 426. *Relh. cant. n.* 307. *Sibth. oxon. n.* 385. *Abbot, beſſ.* 89. *Lin. ſpec. ε. Hall. helv. n.* 1555.
P. ſtrictum. *Allion. pedem. n.* 2051. *t.* 67. *f.* 1.
P. Hydropiper β. *Hudſ. angl.* 170.
Perſicaria puſilla repens. *Ger. emac.* 446. 3. *Park. theat.* 857. *Raii hiſt.* 183. *ſyn.* 145.
P. minor. *Bauh. pin.* 101. *Mor. hiſt. ſ.* 5. *t.* 29. *f.* 5.
β. Perſ. anguſtifolia ex ſingulis geniculis florens. *Raii ſyn.* 145. 3?
Flowers hexandrous ſubmonogynous, leaves linear-lanceolate flat, ſpikes ſiliform almoſt erect, ſtem rooting at the baſe.
13. Polygonum barbatum. *Bearded Polygonum.*
Lin. ſpec. 518. *ſyſt.* 377. *Reich.* 2. 208. *Gmel. ſib.* 3. 52. *Thunb. jap.* 165. *prodr.* 77. *Lour. cochinch.* 241. *Burm. ind.* 89. *Retz. obſ.* 4. 25. *n.* 75.
Perſicaria maderaſpatana, longiore folio, hirſuta. *Pluk. phyt. t.* 210. *f.* 7?
Velutta-modela-mucu. *Rheed. mal.* 12. 145. *t.* 77.
Flowers hexandrous trigynous, ſpikes rod-like, ſtipules truncate ſetaceous-ciliate, leaves lanceolate.
14. Polygonum tinctorium. *Dyer's Polygonum.*
Ait. hort. kew. 2. 31. *Lour. cochinch.* 241.
Flowers hexandrous trigynous, ſpikes rod-like, ſtipules ſmooth contracted truncate ciliate, leaves ovate ſharpiſh ſmooth.
15. Polygonum orientale. *Oriental Perſicaria.*
Lin. ſpec. 519. *Reich.* 2. 208. *Thunb. jap.* 166. *Kniph. cent.* 4. *n.* 62. *Curt. mag.* 213. *Krock. ſileſ. n.* 609. *Gærtn. fruct.* 2. 182.

Perſicaria florum ſtaminibus ſex pluribuſque, ſtylo duplici. *Lin. hort. cliff.* 42. *upſ.* 96.]

Perſ. fol. ovato-lanceolatis acutis, flor. pentandris, caule erecto. *Mill. dict. ed.* 7. *n.* 4. *fig. t.* 201.

Perſ. orientalis, nicotianæ folio, calyce florum purpureo. *Tournef. cor.* 38. *act. gall.* 1703. *Comm. rar. t.* 43.

[Schovanna modela muccu. *Rheed. mal.* 12. 147. *t.* 76.

Flowers heptandrous digynous, leaves ovate, ſtem erect, ſtipules rough-haired ſalver-ſhaped.

16. Polygonum penſylvanicum. *Penſylvanian Perſicaria. Lin. ſpec.* 519. *ſyſt.* 377. *Reich.* 2. 209.

Flowers octandrous digynous, peduncles briſtid, leaves lanceolate, ſtipules awnleſs.

**** Polygona *with undivided leaves, and octandrous flowers.*

17. Polygonum maritimum. *Sea Polygonum* or *Knot-graſs. Lin. ſpec.* 519. *Reich.* 2. 209. *Thunb. prodr.* 77. *Kniph. cent.* 11. *n.* 85. *Camer. epit.* 691. *Allion. pedem. n.* 2054. *Villars dauph.* 3. 523. *Krock. ſilef. n.* 610. *Deſfont. atlant.* 332.

P. marit. latifolium. *Baub. pin.* 281. *Tournef. inſt.* 510. *Zannich. t.* 229. *Mor. ſ.* 5. *t.* 29. *f.* 3. *Lob. ic.* 419.

P. maritimum. *Baub. hiſt.* 3. 376.—majus. *Park. theat.* 444.

Flowers octandrous trigynous axillary, leaves oval-lanceolate evergreen, ſtem ſuffruteſcent.

18. Polygonum aviculare. *Common Knot-graſs. Lin. ſpec.* 519. *ſyſt.* 378. *Reich.* 2. 209. *mat. med.* 105. *hort. cliff.* 150. *fl. ſuec. n.* 339. *Huſf. angl.* 171. *Wither. arr. ed.* 3. 383. *Smith angl.* 429. *Curt. lond. t. t.* 27. *abr. t.* 20. *Lightf. ſcot.* 308. *Relh. cant. n.* 308. *Sibth. oxon. n.* 386. *Fl. dan. t.* 803. *Hall. helv. n.* 1560. *Neck. gallob.* 184. *Scop. carn. n.* 471. *Pollich pal. n.* 386. *Krock. ſilef. n.* 611. *Villars dauph.* 3. 522. *Allion. pedem. n.* 2053. *Gron. virg.* 44. *Gmel. ſib.* 3. 40. *n.* 32. *Thunb. jap.* 166. *Lour. cochinch.* 241. *Deſfont. atlant.* 333. *Blackw. t.* 315. *Regn. bot. Plenck, ic.* 309. *Fl. ruſſ. t.* 91.

P. latifolium. *Baub. pin.* 281. *Tournef. inſt.* 510. *Mor. hiſt. ſ.* 5. *t.* 29. *f.* 1.

P. ſ. Centinodia. *Baub. hiſt.* 3. 374. *t.* 375. 1.

P. mas. *Fuchſ. hiſt.* 614. *Dod. pempt.* 113. 1. *Lob. obſ.* 228. 3. *ic.* 419. *Camer. epit.* 638. *Matth.* 951.

P. maſculum. *Trag.* 391.

P. mas vulgare. *Ger.* 451. *emac.* 565. *Raii hiſt.* 184. *ſyn.* 146.

P. majus. *Tabern. ic.* 832.

P. mas vulg. majus. *Park. theat.* 443. 1.

Common Knot-graſs. *Petiv. brit. t.* 10. *f.* 1.

β. Pol. brevi anguſtoque folio. *Baub. pin.* 281. *Raii ſyn.* 146.

P. mas minus. *Ger.* 451.

Short-leaved Knot-graſs. *Petiv. brit. t.* 10. *f.* 1.

γ. Pol. oblongo anguſto folio. *Baub. pin.* 281. *Raii ſyn.* 146. *Linn. lapp. n.* 153. *Tabern. ic.* 833.

Narrow Knot-graſs. *Petiv. brit. t.* 10. *f.* 4.

δ. Pol. fol. rotundo. *Dillen. in Raii ſyn.* 147.

Thick-ſet Knot-graſs. *Petiv. brit. t.* 10. *f.* 2.

ε. Pol. marinum. *Raii ſyn.* 147.

Flowers axillary, leaves elliptic-lanceolate rugged at the edge, nerves of the ſtipules remote, ſtem procumbent herbaceous.

19. Polygonum erectum. *Upright Polygonum. Lin. ſpec.* 520. *Reich.* 2. 210.

Flowers axillary, leaves oval, ſtem erect herbaceous.

20. Polygonum articulatum. *Jointed-ſpike Polygonum. Lin. ſpec.* 520. *Reich.* 2. 210.

Spikes jointed panicled, ſtipules ſheathing truncated.

21. Polygonum divaricatum. *Divaricated Polygonum. Lin. ſpec.* 520. *ſyſt.* 378. *Reich.* 2. 210. *Kniph. cent.* 11. *n.* 77. *Fabric. helmſt.* 46. *Hall. helv. n.* 1564. *Villars dauph.* 3. 522.—P. alpinum. *Allion. pedem. n.* 2049. *t.* 68. *f.* 1.

Helxine fol. lanceolatis, caule diffuſo. *Lin. upſ.* 96.]

Perſicaria flor. octandris trigynis racemoſis, fol. lanceolatis, caule divaricato patulo. *Mill. dict. ed.* 7. *n.* 3.

Fagopyrum orientale ramoſum & multiflorum, Perſicariæ folio. *Tournef. cor.* 39. [*Buxb. cent.* 2. *t.* 31.

Flowers racemed, leaves lanceolate, ſtem divaricated patulous.

22. Polygonum undulatum. *Wave-leaved Polygonum. Lin. ſyſt.* 378. *Murr. in comm. gott.* 1774. *p.* 34. *t.* 5.

P. fibricum. *Lin. ſuppl.* 228.

Flowers racemed, leaves lanceolate acuminate waved.

23. Polygonum ſerratum. *Notch-leaved Polygonum. Lin. ſpec.* 517. *Reich.* 2. 211. *Shaw. afr.* 489.

Leaves crenate.

***** Helxine *with ſubcordate leaves.*

24. Polygonum chinenſe. *Chineſe Polygonum. Lin. ſpec.* 520. *ſyſt.* 378. *Reich.* 2. 211. *Burm. ind.* 96. *t.* 30. *f.* 3. *Lour. cochinch.* 241. *Thunb. jap.* 166.

Flowers octandrous trigynous, peduncles rugged, leaves ovate, bracteæ cordate.

25. Polygonum ſagittatum. *Prickly Polygonum. Lin. ſpec.* 521. *ſyſt.* 378. *Reich.* 2. 211. *Gmel. ſib.* 3. 65. *t.* 13. *f.* 2. *Thunb. jap.* 167. *Pluk. mant. t.* 398. *f.* 5.

Helxine caule aculeato, foliis ſagittatis. *Gron. virg.* 44. *Cold. noveb.* 92.

H. caule erecto aculeis reflexis exaſperato. *Lin. hort. cliff.* 151. *t.* 12.

Planta poſterior e novo belgio. *Laet. amer.* 73. *t.* 74.

Leaves ſagittate, ſtem prickly.

26. Polygonum ariſolium. *Arum-leaved Polygonum. Lin. ſpec.* 521. *ſyſt.* 378. *Reich.* 2. 211. *Thunb. jap.* 168. *Pluk. amalth.* 87. *t.* 398. *f.* 3, 4.

Planta prior e novo belgio. *Laet. amer.* 73.

Leaves haſtate, ſtem prickly.

27. Polygonum craſſifolium. *Thick-leaved Polygonum. Lin. ſyſt.* 378.

P. haſtatum. *Murr. in comm. gott.* 1774. *p.* 37. *t.* 6.

P. fibiricum. *Laxm. in nov. comm. petrop.* 18. *p.* 531. *t.* 7. *f.* 2.

Flowers octandrous trigynous, leaves haſtate ſinuſy, ſtem decumbent unarmed.

28. Polygonum perfoliatum. *Perfoliate Polygonum. Lin. ſpec.* 521. *ſyſt.* 378. *Reich.* 2. 212. *Burm. ind.* 90. *t.* 31. *f.* 2. *Thunb. jap.* 168. *Lour. cochinch.* 242. *Pluk. phyt. t.* 398. *f.* 1.

Leaves triangular, ſtem prickly, ſtipules perfoliate-leafy ſpreading roundiſh.

29. Polygonum tataricum. *Tartarian Polygonum. Lin. ſpec.* 521. *ſyſt.* 378. *Reich.* 2. 212. *Gmel. ſib.* 3. 64. *t.* 13. *f.* 1. *Lour. cochinch.* 242. *Lin. hort. upſ.* 96. *cliff.* 151. (Helxine.)

Fagopyrum tataricum. *Gært. fruct.* 2. 182.

Fagotriticum ſibiricum. *Act. Stockh.* 1744. *p.* 117 *t.* 4.

Frumentum Saracenicum. *Alp. mat. cur.* 3. *p.* 1.

Leaves cordate-ſagittate, ſtem unarmed erect, ſeeds ſomewhat toothed.

30. Polygonum Fagopyrum. *Cultivated Polygonum* or *Buckwheat. Lin. ſpec.* 522. *Reich.* 2. 212. *mat. med.* 105. *fl. ſuec. n.* 345. *Huſf. angl.* 172. *Wither. arr. ea.* 3. 384. *Smith, angl.* 430. *Sibth. oxon. n.* 387. *Hall. helv. n.* 1563. *Neck. gallob.* 183. *Lees herborn. n.* 300. *Krock. ſilef. n.* 612. *Villars dauph.* 3. 525. *Thunb. jap.* 169. *Kner. del.* 2. *t.* F. *Mill. illuſtr. Regn. bot. Fl. ruſſ. t.* 46. *Plenck, ic.* 310.

Eryſimum Theophraſti, folio hederaceo. *Baub. pin.* 27. *theat.* 530.

Ocymum cereale. *Tabern. hiſt.* 276. *Trag.* 648.

Frumentum ſarracenicum rectum, ſemine triangulo, nigro majore. *Mor. hiſt. ſ.* 5. *t.* 29. *f.* 1.

Fegopyron. *Dod. pempt.* 512. *Lob. obſ.* 513. 3. *Raii hiſt.* 182. *ſyn.* 144.

Tragopyron. *Ger.* 82. *emac.* 89. *Park. theat.* 1141.

Fagotriticum. *Bauh. hiſt.* 2. 993.
Buck-wheat. *Petiv. brit.* 1. 11.
Leaves cordate-ſagittate, ſtem almoſt upright unarmed, angles of the ſeeds equal.

31. Polygonum Convolvulus. *Black Buck-wheat* or *Black Bindweed.*
Lin. ſpec. 522. *ſyſt.* 379. *Reich.* 2. 213. *fl. ſuec. n.* 344. *Hudſ. angl.* 171. *Wither. arr. ed.* 3. 385. *Smith, angl.* 430. *Curt. lond.* 4. *t.* 29. *Lightf. ſcot.* 208. *Relh. cant. n.* 309. *Sibth. oxon. n.* 388. *Fl. dan. t.* 744. *Hall. helv. n.* 1561. *Scop. carn. n.* 469. *Neck. gallob.* 184. *Pollich pal. n.* 387. *Leers, herborn. n.* 301. *Krock. ſilef. n.* 613. *Villars dauph.* 3. 524. *Allion. pedem. n.* 2055. *Gmel. ſib.* 3. 62. *Pallas* 1. 39. *Thunb. jap.* 169.
Helxine caule volubili. *Lin. lapp. n.* 154. *hort. cliff.* 150. *Gron. virg.* 157.
H. ſemine triangulo. *Bauh. hiſt.* 2. 157.
Fagopyrum vulgare ſcandens. *Tournef. inſt.* 511.—minus. *Vaill. par.* 52.
Fegopyrum ſcandens ſylveſtre. *Raii ſyn.* 144.
Frumentum ſarracen. alterum, &c. *Mor. hiſt. ſ.* 5. *t.* 29. *f.* 2.
Convolvulus minor ſemine triangulo. *Bauh. pin.* 295.
C. minor Atriplicis folio. *Park. theat.* 172. 8. *Raii hiſt.* 182.
Convolvulum nigrum. *Dod. pempt.* 396.
Volubilis nigra. *Tabern. ic.* 876. *Ger.* 733. 4. *emac.* 863.
Trailing Buck-wheat. *Petiv. brit. t.* 2. *f.* 12.
Leaves cordate-ſagittate, ſtem twining angular, calycine ſegments bluntly keeled.

32. Polygonum multiflorum. *Many-flowered Polygonum.*
Lin. ſyſt. 379. *Thunb. jap.* 169.
Leaves cordate, ſtem twining angular, panicle of flowers branched.

33. Polygonum dumetorum. *Wood Polygonum.*
Lin. ſpec. 522. *ſyſt.* 379. *Reich.* 2. 213. *Willich illuſtr. n.* 9. *Fl. dan. t.* 756. *Hall. helv. n.* 1562. *Pollich, pal. n.* 388. *Leers herborn. n.* 302. *Krock. ſilef. n.* 614. *Villars dauph.* 3. 524. *Gmel. ſib.* 3. 63.
P. ſcandens. *Grim. ſpec. in nov. act. nat. cur. t.* 3. *p.* 308.
Fagopyrum prælongum dumetorum, ſeminibus alatis duplici more diſpoſitis. *Dill. giſſ. app.* 60.
F. ſcandens altiſſimum dumet. ſeminibus tribus alis pellucidis. *Rupp. gen.* 99.
F. ſylvaticum ſcandens, flore foliaceo. *Ponted. anth.* 265.
F. majus ſcandens. *Vaill. par.* 52.
Leaves cordate, ſtem twining even, flowers keel-winged.

34. Polygonum ſcandens. *Climbing Polygonum.*
Lin. ſpec. 522. *ſyſt.* 379. *Reich.* 2. 214.
Fagopyrum ſcandens americanum maximum. *Tournef. inſt.* 511.
F. ſcand. caule rubente ſemine nigro. *Gron. virg.* 44. *Cold. noveb.* 93.
F. ſcand. f. Volubilis nigra major, flore & fructu membranaceis compreſſis. *Sloan. jam.* 1. 138. *t.* 90. *f.* 1.
Fagotriticum volubile majus virginianum. *Pluk. phyt. t.* 177. *f.* 7.
Leaves cordate, ſtem erect, ſcandent.

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35. Polygonum ciliatum.
Lour. cochinch. 243.
Flowers octandrous trigynous, ſtipules ſtriated blunt ciliate, ſpikes very ſhort.

36. Polygonum odoratum.
Lour. cochinch. 243.
Flowers octandrous trigynous, ſpikes long terminating, root creeping.

DESCRIPTIONS, *&c.*

The flowers in *Biſtorta* are in terminating ſpikes, nine-ſtamened, three-ſtyled, with a triangular ſeed and a twice-turned root. In *Perſicaria* they are ſpiked and panicled, axillary and terminating, with five, ſix, ſeven or eight ſtamens and two ſtyles or ſometimes three ſtyles, with an ovate ſeed. In *Polygonum Tournef.* they are axillary, eight-ſtamened, three-ſtyled, with a round ſeed. In *Fagopyrum* corymb-panicled, eight-ſtamened, three-ſtyled, with a triangular ſeed[a]. The outer cruſt of the ſeed is thick and hard enough in ſeveral ſpecies of *Polygonum* to be accounted a nucamentaceous pericarp.

1. Calyx five-leaved; leaflets when ripe equal or unequal, coloured or uncoloured, but conſtantly looſe from the ſeed. Corolla none. Stamens eight. Germ ſuperior. Styles three. Pericarp none, except the outer cruſt of the ſeed. Seed ovate-acuminate, three-ſided, ſhining, of a very dark cheſtnut colour, faſtened to the bottom of the calyx: outer cover cruſtaceous-coriaceous; inner membranaceous: albumen farinaceous, very white: embryo on one ſide: cotyledons ſhort, curved, incumbent[b].

Native of Siberia. Introduced in 1770, by Monſ. Richard. It flowers in july[c].

2. See the deſcription, &c. under *Atraphaxis undulata.*

3. Root perennial and not eaſily extirpated, ſomewhat woody, more or leſs bent or crooked, whence its names *Biſtort Snakeweed* and *Adder's-wort*, outwardly of a cheſtnut, inwardly of a fleſh-colour, furniſhed with numerous fibres and creepers. Stem from one to two feet high, quite ſimple, ſtraight, upright, round, ſmooth, ſwelling at the joints. Leaves waved, veiny, entire, ſmooth, of a fine green, and glaucous beneath, their baſe running down ſo as to render the footſtalk winged. The bottom leaves are rather cordate-lanceolate. The ſtalks of the ſtem-leaves are dilated and ſheathing, or ariſe from long ſheaths incloſing the ſtem; theſe ſheaths are membranous and withered at top, and the mouth is oblique. Spike ſolitary, terminating, cylindrical, blunt, nearly upright, compoſed of many beautiful pink-coloured flowers, having the proper number of ſtamens and ſtyles that belongs to the genus, and ſtanding on a ſlender red pedicel, with a pair of membranous bractes at the baſe[d]: the lower of theſe is three-cuſped, the middle point running out into a kind of awn: pedicels longer than the calyx[e]. Each pair of bractes (or common calyx of two valves) contains two flowers, one on a pedicel, the other ſeſſile ſurrounded with a kind of proper cup, thin, membranous, nearly cylindrical, with an even very entire mouth. One of the bractes (or valves) is large, truncate, the other ſmaller and terminated by a ſkinny projection[f]. The nectary is ſeveral ſmall red glands in the bottom of the calyx. Filaments longer than the calyx[g]. Anthers double, the two parts being only united by the filaments[h]; they are of a purpliſh colour. Germ deep red: ſtyles the ſame length with the ſtamens: ſtigmas ſmall and round. Seed three-ſided, pointed, dark brown, and ſhining as if varniſhed[i].

Native of many parts of Europe, Siberia, and Japan. In Britain it is moſt common in the northern parts, particularly in moiſt meadows, where it is often a noxious weed, frequently forming large patches, and not eaſily extirpated; it flowers in may and june. Near London it occurs at Batterſea, and in a meadow by Biſhop's-wood near Hamſtead; in meadows about Uxbridge; near Rickmanſworth in Hertfordſhire; Hyde Mill, Luton, and Thurleigh in Bedfordſhire; banks of the Iſis beyond Iſley, and near Goſford-bridge in Oxfordſhire; Ham-green near Mathon and Martley in Worceſterſhire; near the infirmary, Staffordſ; cloſes near Howes houſe, Whitwell and Shelford, Cambridgeſhire; Brome and Heigham in Norfolk; Tamworth and Fazeley in Warwickſhire; near Derby; Coſgrave in Northamptonſhire: Lenton in Nottinghamſhire; about Sheffield, Hallifax, Bradford and Settle in Yorkſhire, very common; Kendal in Weſtmoreland; near Newcaſtle upon Tyne. In Scotland, about Inverary.

The root of Biſtort, being one of the ſtrongeſt vegetable aſtringents, might well be applied to the purpoſe of tanning leather, if it could be procured in ſufficient quantity. The young ſhoots are eaten in herb

[a] Juſſieu. [b] Gærtner. [c] Hort. kew. [d] Smith. [e] Curtis. [f] Withering. [g] Curtis. [h] Wich. [i] Curt.

pudding

pudding in the north of England, where the plant is known by the name of *Easter Giant*: and about Manchester they are substituted for greens, under the name of Patience Dock [x].

The root was formerly considered to be alexipharmic and sudorific; but its uses seem only to be derived from its styptic powers. Dr. Cullen frequently employed it in intermittent fevers; and gave it both alone and with Gentian, to the quantity of three drams a day. The dose of the root in substance is from a scruple to a dram [y].

4. This has the same habit with the preceding, but is much less. Stem a hand or hardly a span in height, (according to Villars only two or three inches). Leaves linear-lanceolate, veined, sometimes hirsute underneath; the root-leaves often elliptic-roundish [z]: stem-leaves linear, arising from a sheath, which incloses the stem, and is terminated by a blunt membrane [a]. Spike linear, blunt. Flowers rose-coloured, (whitish, *With.* often white, seldom purple, *Krock.*) with eight stamens and three styles [b], the lower ones frequently changing, as Clusius, Boccone, Linneus, &c. observe, into vegetating bulbs, whence the trivial name of the plant: these bulbs are darkish purple, ovate, mealy and white within [c]. Germ acutely three-sided. The seeds are seldom perfected [d].

According to Scopoli, the leaves are lanceolate; the spike slender, two inches long, with the axis three-cornered; peduncles solitary, shorter than the calyx, which is white; bractæ ovate, acuminate, permanent; stamens eight, with the filaments alternately shorter; anthers two-horned, of a dusky rufous colour; styles two terminated by a pellucid ferruginous globule.

The roots of this species have the same qualities with the preceding; they are eaten by the northern nations, and in some parts of Siberia and Tartary [e].

Plants cultivated during four years in a garden constantly produced perfect seeds in july, and flowered as constantly a second time in september. These latter germs vegetated on the stem [f].

Native of many parts of Europe, in mountainous pastures. In England, in several parts of Westmoreland, as at Crosby Ravensworth, found by Mr. Lawson, in fields between Shap and Hardingdal, by Mr. Gough; shewn to Mr. Ray by Thomas Willisel, near Wherf, near the foot-way leading thence to Settle; on the edge of Lemer water at Carr End, Wensley Dale by Mr. Curtis. In Scotland not unfrequent in dry stony pastures by the sides of mountains, as about the pass of Killicranky, near Blair, about Lock Rannoch in Perthshire, Loch Urn in Invernes-shire, &c. and on Benhuardal, in Strath, in the isle of Skye [g]. Dr. Smith found it near the top of Ben Lomond.

Welsh Bistort is a small variety, about four inches high, with the root-leaves roundish and minutely serrate. It was found by Lhwyd, on a very high rock near Lhan-berys [h].

5. Stems hard, round, green, with great joints on them. Leaves large, broad, dark bluish green, with long points on them, often spotted, but often also without marks, many six inches long or more, and three inches and a half broad, with sundry compassing veins from the midrib, and others smaller transverse. At the tops of the stalks, and from the joints of the leaves, spring spikes of white flowers, succeeded by flat, black, shining seeds. Root perennial, consisting of a great bush of long black fibres [i].

Calyx one-leafed, four-cleft. Stamens five. Germ superior. Styles two, filiform. Seed ovate, lenticular-compressed, very smooth and shining, of a pale chestnut colour. Outer coat cruftaceous, thin, brittle; inner membranaceous, with a ferruginous mark at the base. Embryo on one side: cotyledons ovate-lanceolate, accumbent, cutting one side of the albumen with a vertical cleft [k].

Native of North America. It was cultivated in 1640 by Mr. John Morrice, as appears from Parkinson [l]. Ray also had it in his little garden at Cambridge. It flowers in august and september.

6. Root annual. Stem about three feet high, round, smooth, hollow, branched, the branches spreading, swelling very much above the joints, patulous and sometimes decumbent. Leaves ovate-lanceolate, smooth above, sometimes spotted, underneath dotted with small glands, and often pubescent, edged with little hairs: petioles hairy underneath, and slightly rugged. Stipules nerved at the base, not terminated by any hairs, but sometimes subciliate. Spikes short, blunt, when the seeds are ripe drooping a little. Peduncles rugged with short glanduliferous hairs. Flowers of a greenish colour, (or pale red) on short peduncles, growing thickly together. Stamens a little shorter than the corolla. Style divided nearly down to the base. Seed heart-shaped, pointed, flat, with a depression in the middle, shining, sometimes obtusely triangular.

Mr. Curtis has fully discriminated this species from *Polygonum Perficaria*, of which Haller considers it as a variety, by the following circumstances. That usually grows by the sides of moist ditches; this prefers a more luxuriant soil, and is common on dunghills: it is not a variety however arising merely from this circumstance, Mr. Curtis having seen *Pol. Perficaria*, *Hydropiper* and this, all growing by the side of a stream, within six inches of each other. In its most common state, as described above, it is much larger than *P. Perficaria*, and its joints are more swelled; its stipules are much more strongly ribbed at bottom, and have no ciliæ; its leaves are broader, the veins somewhat deeper, and more strongly marked; the hairs on the edges of the leaves more visible, but particularly so under the petiole, to which they give a manifest roughness; in the uppermost leaves the under side is generally dotted with very minute glands, whilst in the lowermost it is covered with a kind of down, which, contrary to what Linneus asserts, is never in *Pol. Perficaria*, but in this species is always seen more or less predominant; the peduncles are thickly beset with little yellowish glands on short foot-stalks, which sometimes extend half down the plant, this appearance never, or very rarely occurs in *P. Perficaria*: the flowers are of a pale or greenish hue, and form thicker and larger spikes than in *P. Perficaria*, and in their mature state are so heavy as frequently to hang down a little: the style is divided nearly down to the germ, whilst in *P. Perficaria* it is divided only half way: in that species, the seeds are either triangular, or of a pointed oval shape, with a little convexity on each side; in this it is flat, with a depression on each side, it is also larger and broader; now and then a seed occurs, forming an unequal triangle, but these are very rare; whilst the triangular seed is most frequent in *P. Perficaria*.

Mr. Hudson first supposed this to be the *pensylvanicum* of Linneus, but afterwards considered it as a variety of *P. Perficaria*. Dr. Withering has made it a distinct species, under the name of *pallidum*. But it is now ascertained to be the same with the *lapathifolium* of Linneus; which he says is found in France; but he did not know that it is indigenous of England, and gave Bobart's name, in Ray's synopsis, to his *pensylvanicum*, which is a native of North America.

β. The variety with a red stalk and red flowers is often found on dunghills and in corn fields, and is like the true species in every respect excepting its colour, but the red of the flowers is not so bright.

γ. This not only differs in having its stalk spotted with red, but the spikes are much more slender, rather more so than those of *P. Perficaria*, of a red colour, but not so bright; the under side of the petiole is remarkably rough: and the seeds are smaller. It grows much in the same situations, and often with *P. Perficaria* in the ditches about St. George's Fields. When this variety grows in a rich soil, it is still as large as the species; but in a different soil and situation, as on the watery parts of Blackheath and Peckham Rye, it becomes much smaller, generally has its leaves white

[x] Curtis. Withering. [y] Woodville. [z] Smith. [a] Woodward. [b] Smith. [c] Withering. [d] Smith. [e] Linn. amœn. & suec. Gmel. Gunn. &c. [f] Gough in Withering. [g] Lightfoot. [h] Ray syn. [i] Parkinson. [k] Gærtner. [l] Hort. kew.

under-

underneath, and may be taken for *P. Perficaria*, if not attentively examined: its ſpotted ſtalk, and the roughneſs of the petioles, will however readily diſcover it.

3. The variety with leaves hoary on the under ſide, is found here and there in corn-fields and other places, where the ſoil is not very rich, and is obviouſly enough diſtinguiſhed.

Beſides theſe ſtriking varieties, it varies in ſize, according to the richneſs or poverty of the ground, and like *P. Perficaria*, the leaves are ſometimes ſpotted and ſometimes not.

Small birds are very fond of the ſeeds of this ſpecies and its varieties. The farmer ſhould carefully weed them from his dunghills[m].

7. Root perennial, creeping. Stems rooting, erect or floating, a foot and half or more in length, generally ſimple, or branching only in the lower part, round, hollow, commonly red, with the joints a little ſwelled, inveſted with tubular membranous entire ſtipules, which ſheath it above as well as below the inſertion of the foot-ſtalks. Leaves alternate, petioled, lanceolate with a heart-ſhaped baſe, acute, ſerrulate, and edged with hairs, harſh to the touch, deep or bright green, often ſpotted, ſomewhat waved. Pedunckes ſolitary or two together, erect, red, on one ſide flattened, and ſlightly grooved. Spikes bright red, at firſt pyramidal, afterwards ovate, thickly ſet, bracted at the baſe: at firſt they are terminating, but at length the ſtem is protruded beyond them. Bractes ovate, membranous, pointed. The flowers are on ſhort pedicels, and are compoſed of a roſe-coloured funnel-ſhaped calyx, divided into five obtuſe ſegments. Stamens only five, in the jaws of the calyx, of different lengths. Germ ſuperior, red, bearing two ſtyles, united and red a conſiderable way above the baſe, white in the upper part, tipped with red globular ſtigmas. Seed ovate, flattened on one ſide, pointed, gloſſy, brown or of a dark cheſtnut colour, with blunt corners[n].

This is the only European ſpecies in the *Perſicaria* diviſion of this genus, which has a perennial root; it may alſo be diſtinguiſhed from the others by the leaves being hollowed at the baſe, and fringed with hairs at the edges, they are alſo harſher to the touch, eſpecially when the plant grows out of the water; its ſtipules more cloſely ſurround the ſtalk, which has generally two ſpikes, neither of them perfectly terminating; theſe ſpikes are more pyramidal when young, and of a brighter red colour than any of the ſpecies related to it; when it grows in the water the whole plant becomes ſmoother, and is more diſpoſed to bloſſom; it is alſo obſerved that the ſtamens are longer than the calyx when the plant grows on land, and ſhorter when it grows in the water, but this is by no means conſtant[o].

Native of moſt parts of Europe, in ponds, ditches, rivers, and ſometimes on arable land. In water its long creeping roots run deep into the mud, throwing out whorls of fibres here and there, whilſt the leaves float upon the ſurface, and the beautiful ſpikes of flowers, in july and auguſt, are elevated above it. Here the leaves are ſmooth and of a bright green. Frequently however, as Ray obſerves, the roots are thrown out with the mud in clearing ditches, and if by that, or any other accident, the plant gets out of the water, the ſtems grow more erect, the leaves become narrower and hairy, and the flowers are more ſparingly produced[p].

As a weed, few plants are more pernicious, for the roots not only creep, but penetrate ſo deep into the earth, that they are ſeldom or never eradicated: but as it flowers rarely on arable land, it is a more local plant than ſome of the ſame genus, the ſeeds of which are either ſown, or introduced with manure. Waterfowl are fond of the ſeeds.

This ſpecies has the name of *amphibium*[q] from its growing both on land and in water. We may conclude that the latter is its natural ſituation, from its ſeldom producing the fructification in dry places.

[m] Curtis. [n] Curtis, Smith. [o] Curtis. [p] Engl. bot. [q] Curtis.

From its floating leaves the older botaniſts conceived it to be a *Potamogiton* or *Pondweed*. Ray, more attentive to the fructification, aſcertained it to be a *Perſicaria*[r].

Villars informs us, that it was ſuppoſed in Alſace to be injurious to cattle, but he is of opinion that it is rather uſeful to them, on account of its acid antiſeptic qualities. He remarks very juſtly, that all marſhy ſituations being unwholeſome, the plants which are moſt common there are accuſed of doing all the miſchief.

8. Stem round, marked with obſolete raiſed lines, erect, villoſe with cloſe-preſſed hairs, ferruginous. Branches alternate, hirſute, erect. Leaves alternate, acute, entire, ciliate, nerved, villoſe, erect, an inch long. Petioles dilated at the baſe, embracing, ſheathing. Stipules inflated, truncate, membranaceous. Spike terminating, drooping at the top, a ſpan long. Flowers ovate at bottom, cloſe at top, minute, opening in ſucceſſion. Bracte embracing, bearded, three-flowered: within this two other bractes involving each flower, lanceolate, entire. Corolla (or rather calyx) four-parted almoſt to the baſe, ſmooth: ſegments ovate, half a line in length; the three upper ones red, bent towards the lower ones, which are white. Filaments white, inſerted near the germ, a little ſhorter than the calyx, three ſhorter than the other two. Germ three-ſided, ſuperior. Styles two, awl-ſhaped, erect, the length of the filaments. Stigmas ſimple, blunt, patulous, white.

It is very nearly allied to *P. barbatum*, but the flowers have five ſtamens and two ſtyles; the ſpikes are filiform, quite ſimple, and very long; the ſtipules have ſhort ciliæ; and the leaves are ovate, not elliptic.—Native of Japan, near Nagaſaki; flowering in ſeptember and october[s].

9. The ſtipules are entire, ventricoſe, even ſheaths, much wider than the ſtem. Leaves lanceolate, revolute. Flowers in racemes.

Native of Siberia, where it was found by Gmelin[t]. Introduced in 1780, by Peter Simon Pallas, M. D. It flowers in july and is perennial[u].

10. Root annual, fibrous. Stem about two feet (or from one to three feet) high, branched, round, ſwelling above the joints, finally becoming very red, ſometimes creeping at bottom. Leaves of a yelloviſh green colour and ſmooth. Stipules ciliate, obſolelely nerved. Spikes terminating, linear or ſlender, looſe, nodding, (even before flowering.) Flowers pale red, (or green, but red towards the end) with glandular dots on the outſide. Stamens the length of the calyx. Anthers white. Style divided to the middle or deeper. Stigmas blunt. Seed ovate-acuminate, compreſſed, of a cheſtnut colour[v].

Dr. Stokes remarks, that the whole plant is ſprinkled with minute glandular dots, but even with the ſurface, and more obvious with a moderate than a higher magnifier, probably the ſeat of its very acrid property. Mr. Curtis adds, that theſe little cells or glands are more particularly obſervable on the calyx, which is accordingly more biting than any other part of the plant. From its hot acrid taſte it has the name of *Hydropiper*, *Water Pepper*, *Biting Perſicaria*, &c. Although the herb and calyx are ſo acrid, the ſeeds are inſipid and nutritive.

It is the only *Perſicaria* that has any pretenſions to be an active medicine: given in infuſion or decoction, it proves diuretic, and hence is uſeful in the dropſy and jaundice; the diſtilled water is recommended by Boyle in the ſtone and gravel[w]. The aſhes of the plant, mixed with ſoft ſoap, is a noſtrum for diſſolving the ſtone in the bladder; but it may be reaſonably queſtioned whether it has any advantage over other ſemicauſtic preparations of the vegetable alcali. Its acrimony riſes in diſtillation, and the diſtilled water, drank to the amount of two or three half pints daily has been found very effectual in ſome nephritic caſes[x].

Linneus informs, that the plant will dye woollen cloth of a yellow colour: and that all domeſtic quadrupeds reject it.

[r] Curtis. [s] Thunberg. [t] Linn. ſpec. [u] Hort. kew. [v] Curtis and Smith. [w] Curtis. [x] Withering.

It is native of moſt parts of Europe, and is found in great abundance in places that lie under water during the winter; flowering in ſeptember, generally a month later than *P. Perſicaria*. From this it differs principally in its leaves, ſpikes, form and ſize of its ſeeds. Its leaves are of a yellower hue, more undulated, and never marked with any ſpots; its ſpikes are ſlender, and when the ſeeds are ripe, bend and hang down; (Mr. Woodward obſerves that they droop even before flowering) the ſeeds are much larger, more acuminate, and of a cheſtnut colour; the ſtipules are very evidently ciliate, though Haller makes the want of ciliæ one of its ſtriking characters, and Linnæus calls them *ſubnullæ*. Notwithſtanding its obvious difference, Scopoli and Haller ſeem to entertain a doubt whether it be really diſtinct from *P. Perſicaria* and *minus*. There are indeed ſome intermediate varieties which bring them very near together, and perhaps juſtify ſuch ſuſpicion. A variety of the *Hydropiper*, ſcarcely differing in any other reſpect but its inſipidity, is now and then met with, in the ſame ſituation as we uſually find the true ſpecies [a].

11. Root ſimple, fibrous. Stem upright, ſometimes rooting at bottom, two feet (or from two to three feet) high, alternately branched, round, ſmooth, gradually thickened above the joints, often red. Leaves on very ſhort petioles, ſpreading and bent down, lanceolate, acute, quite entire, the edge and midrib ſlightly hairy, otherwiſe ſmooth on both ſides, having in general a large ſpot on the middle ſomewhat like a horſe-ſhoe, or rather creſcent-ſhaped. Stipules tubular ſheathing, ſhort, ribbed, terminated by long hairs, frequently full of a viſcid liquid. Spikes terminating or axillary, blunt, on ſmooth peduncles. Flowers of a bright roſe colour. Stamens the length of the calyx. Style divided to the middle into two, often into three parts. Seed ſhining, either ſubovate-pointed and ſlightly convex on one ſide, or three-ſided [b].

Dr. Withering remarks, that the leaves have very minute briſtles lying along the edge; that the common peduncles ſpring from the ſheathing ſtipules at the joints of the ſtem; that the flowers are three or four together, included in a membranaceous fringed ſheath, on ſhort pedicels of different lengths, which are again incloſed in membranaceous ſheaths; that the ſegments of the calyx are concave and unequal; the ſtamens ſometimes five or ſeven, with two anthers upon one filament.

This ſpecies is very nearly allied to the *lapathifolium*, but the ſtyle is divided only half way down, moſtly into two parts, and then the germ is a little convex on each ſide; but ſometimes into three parts, and then the germ is always triangular: the peduncles are quite ſmooth; the ſtipules are furniſhed with long ciliæ, particularly towards the top of the plant: and it differs much in the form of the ſeeds. It may be diſtinguiſhed from *P. Hydropiper* by the ſpikes, which in this are upright, and of an ovate ſhape more or leſs round [c]. Common in ditches and marſhes in moſt parts of Europe, flowering from july to ſeptember.

Its taſte is ſlightly acid and aſtringent. Woollen cloth dipped in a ſolution of alum obtains a yellow colour from this plant. Goats, ſheep and horſes eat it, cows and ſwine refuſe it [d].

Mr. Miller has mentioned this and the preceding ſpecies, together with *P. orientale* and *divaricatum*, under the name of *Perſicaria*, in the ſeventh edition of his Dictionary; he has alſo noticed the *Biſtorta*; and for *Fagopyrum* he refers to *Helxine*, which article is not to be found. In the eighth edition theſe are all omitted, the author having probably intended to bring them together under *Polygonum*, and having forgot it when he came to that article, as he has done in other inſtances.

12. Stems ſeveral, decumbent and rooting at the baſe, then becoming nearly upright, from a ſpan to a foot in height, little branched, ſomewhat thickened above the joints, ſmooth, reddiſh. Leaves ſmooth on their upper ſurface, with ſcarcely any appearance of veins. Stipules ſheathing, ciliate. Spikes ſlender, almoſt upright or a little drooping, proceeding from each joint. Flowers few, pale, red on the outſide, not dotted. Stamens the length of the calyx. Style bifid (or trifid) only at the top. Stigmas blunt. Seed ovate-acute or triangular, cheſtnut-coloured, nearly of the ſame ſize and ſhape as in *P. Perſicaria* [e].

Linnæus makes this a variety of *P. Perſicaria*. Ray and Hudſon conſider it juſtly as a diſtinct ſpecies, and after the accurate reſearches of Mr. Curtis, it can ſcarcely be doubted.

In height, this ſeldom exceeds a foot, whereas the *Perſicaria* often occurs a yard high; the ſtalk roots at bottom and is abſolutely procumbent, whilſt in *Perſicaria* it is always upright; the leaves are much narrower, approaching rather to linear than lanceolate, and on their upper ſurface have much leſs appearance of veins; the ſpikes, inſtead of being ovate or nearly round and upright, are ſlender and a little drooping; and the piſtil is ſlightly divided at top only.

It is very abundant in the watery parts of Tothill fields, Weſtminſter, with *Siſymbrium ſylveſtre*, in ſeptember [a]. It has been found on Putney-common by Dr. Goodenough; in a gravel-pit on Malvern-chace in Worceſterſhire, by Dr. Stokes; and on Coſtefy-common, near Norwich, by Dr. Smith.

13. Stem herbaceous, rufous. Stipules ſheathing, looſe, ſet with ſtrong briſtles almoſt the length of the ſtipule itſelf. Spikes long, with the flowers remote, three from each turbinate bractæ [f].

It differs from *P. filiforme* in having ſix ſtamens and three ſtyles; the leaves elliptic and acuminate; the ſpikes ſhorter, wider, often divided or ſeveral approximating, and in having the ſtipules awned [g].

Thunberg has diſtinguiſhed three varieties:

1. With the ſtem round, upright, ſmooth, purple; the branches alternate, erect, like the ſtem. Leaves petioled, alternate, elliptic, acuminate, entire, ciliate, villoſe eſpecially on the nerves, which are parallel, and the midrib is thick; they are three inches long, but the upper ones are leſs. Petioles dilated at the baſe, embracing, ſtriated, very ſhort. Stipules intrafoliaceous, cylindrical, hirſute, truncate, with upright awns, the length of the ſtipule. Spikes terminating, ſolitary or ſometimes two together, very ſeldom three, filiform, erect, imbricate, a finger's length. Bractes as in *P. filiforme*.

2. Has the ſtem roundiſh, little villoſe; branches alternate, ſtriated, erect, villoſe; leaves petioled, elliptic, acuminate, entire, ciliate, having parallel villoſe nerves, and two inches long or more. Spikes terminating, cylindric, divided, two or more together, an inch long. Seed dark, ſhining, ſmooth.

3. With a round, weak but upright, ſmooth ſtem; branches alternate, filiform, ſtriated, from upright ſpreading, ſmooth. Leaves alternate, elliptic, acuminate, entire, ciliate, ſmooth, ſprinkled with very frequent minute whitiſh dots, and an inch in length. Petioles, ſtipules and bractes as in *P. filiforme*. Spikes terminating, cylindric, ſolitary or two together, from three lines to an inch in length. Seed dark, ſmooth and ſhining.

All theſe varieties are found in Japan, in ditches and watery places. Thunberg found this ſpecies at the Cape of Good Hope, in Ceylon and Java.

Retzius alſo has three varieties. 1. From China, having the leaves and ſtipules hiſpid; the ſtipules and bractes ciliate. 2. From Malabar, ſmooth all over, the ſtipules only toothletted, the bractes quite entire. 3. From the Cape of Good Hope, ſmooth alſo all over, ſtipules and bractes ciliate.

14. Stem herbaceous, perennial, round, two feet high, manifold, nearly erect. Stipules ſheathing. Leaves quite entire, ſmooth, juicy, alternate, bright green. Flowers bright red, in long branching ſubterminating ſpikes. Calyx five-parted, converging. Style ſemitrifid.

Native of China near Canton. Introduced, according to the Kew catalogue, in 1776, by John Blake, Eſq.

[a] Curtis. [b] Curtis and Smith. [c] Curtis. [d] Linn.

[a] Curtis and Smith. [b] Curtis. [f] Linn. [g] Thunberg.

It is uſed in China to dye a beautiful blue or green colour. According to Thunberg, *P. chinenſe*, *barbatum* and *aviculare* are cultivated in Japan for the ſame purpoſe [k].

15. Root compoſed of many ſtrong fibres, growing in tufts. Stem jointed, eight or ten feet high, the lower part becomes woody, and as thick as an ordinary walking cane, of a fine green and a little hairy. Leaves alternate, often a foot long, and ſix inches broad in the middle, terminating in acute points, they have one ſtrong midrib, and ſeveral tranſverſe veins which run upwards towards the point; their ſurfaces are a little hairy, the upper of a bright green, and the under paler. Petioles broad, half embracing at their baſe. Flowers in cloſe terminating ſpikes, ſeven or eight inches long, hanging downwards. Stamens five, ſix or ſeven [l].

The ſtipules are deſerving of notice, being unuſual in their form, and making the ſtem look as if ruffled [m]. Thunberg remarks that the margin of the ſtipules is entire and revolute.

The calyx is five-cleft and equal. There is a yellow gland at the baſe of each ſtamen. Seed ſubglobular, compreſſed a little on each ſide, black, ſhining. Outer coat cruſtaceous, hard, ſomewhat brittle: inner of a ruſty red colour, with a brown ſpot at the baſe. Albumen farinaceous. Embryo on one ſide, bowed, inverted, yellowiſh [n].

There is a dwarf variety of it, and another with white flowers; it has been obſerved to vary alſo in point of hairineſs [o]. Linneus remarks that the Eaſt Indian plant is far more hairy than that from the Levant. It flowers from july to october, or till the froſts in autumn come on; ſoon after this the plant decays and dies [p]. It was cultivated in 1707, by the Dutcheſs of Beaufort. The variety with white flowers was introduced in 1781, by Monſ. de Wevelinchoven [q].

The ſeeds were firſt ſent to Europe by Tournefort, who ſaw it growing in the Prince of Teffis's garden in Georgia, and afterwards in the garden of the monks of the Three Churches near mount Ararat. They cultivate this plant there, not only for the beauty of the flowers, but for its medicinal qualities, which are the ſame with thoſe attributed to our common ſpecies [r].

16. This has the appearance and habit of *Pol. Perſicaria*, but all the parts are larger and ſtiffer. Stem branched, angular. Leaves acuminate with the keel very rugged underneath. Stipules truncate. Peduncles rugged, with ſtiffiſh hairs ſecreting a clammy juice from the top. Spikes ſubracemoſe, with pedicelled florets.

Native of Pennſylvania, where it was obſerved by Kalm [s].

Ray's *Perſ. mitis foliis pallidioribus* has been ſuppoſed to be the ſame with this; but that is now aſcertained to be the ſame ſpecies with *Pol. lapathifolium* of Linneus.

17. According to Linneus, the Sea Knot-graſs is ſo nearly allied to the common ſort as ſcarcely to be diſtinguiſhed from it. The flowers are in ſouts. Stem flatter on one ſide. All the parts larger and harder. Leaves ovate, coriaceous, evergreen, turning blue in drying. Stem ſhorter, hard, perennial.

Villars deſcribes it as hard, robuſt, thick and ſomewhat woody; the ſtems reddiſh; the ſtipules very large; the leaves thick and in a manner fleſhy; it is very diſtinct from the common ſort.

Deſfontaines ſays that the ſtems are proſtrate, branched, knobbed; the leaves glaucous, ſomewhat fleſhy, coriaceous, elliptic, quite entire, with the margin reflexed underneath. Stipules membranaceous, white, ſheathing. Flowers axillary, three to five at a joint. Calyx five-parted; ſegments elliptic, with a white margin, but greeniſh in the middle. Stamens eight, ſhorter than the calyx. Styles three.

According to Krocker, the calyx (or corolla as he calls it) is bright purple; the ſeeds three-ſided and black. About the ſolſtice, bladders grow on it full of a red juice, which the Poles uſe to make an elegant red dye; hence Schwenkfeld calls this plant *Pol. coccygerum*.

Native of the ſandy coaſts of the Mediterranean ſea, the Levant and Virginia.

Our Sea Knot-graſs, is not this, but a variety only of the next.

18. Root annual, branched, ſomewhat woody, taking ſtrong hold of the earth, of an aſtringent taſte. Stems many, generally procumbent, divaricating, branched, leafy, round, ſtriated, thicker at the joints, and ſeparating there when pulled. Leaves alternate, elliptic-lanceolate, (or varying from ovate to lanceolate and even linear) attenuated at the baſe, ſmooth except at the edge where they are ſomewhat rugged. Stipules acute, ſcariole, with few remote nerves, ſheathing. Flowers axillary, in cluſters, two or three together, pedunculed, ſmall but not inelegant, variegated with white green and blood red. Stamens eight ſhorter than the calyx. Styles three, very ſhort. Seed three-ſided, ſhining, blackiſh [t].

Dr. Withering remarks, that the peduncles are ſhort, but two of them longer than the third: that the calyx is double; the outer with five lanceolate ſegments incloſing the three florets, the inner incloſing only the third floret and ſometimes the rudiment of a fourth. Deſfontaines ſays, one, two or three flowers proceed from the ſame ſheath.

This is one of the moſt common plants, eſpecially in a ſandy or gravelly ſoil, on banks, by roads and paths, and in corn fields; it frequently covers much ground, where the natural graſs has been deſtroyed. Where it grows ſingly in a rich or newly thrown up ſoil, a ſingle plant will often cover the ſpace of a yard or more, and the leaves are then broad and large; but when it grows very thick together, it is in every reſpect ſmaller [u]. On our ſandy coaſts it is found with large oval thick leaves, approaching to *Pol. maritimum*, but not perennial [w]. Dr. Smith has ſatisfactorily diſtinguiſhed our maritime variety from the true *maritimum* of Linneus and other foreign botaniſts. The latter has a ſhrubby perennial ſtem; wide elliptic glaucous leaves, ſcarcely rugged at the edge; but it differs particularly in having numerous approximating nerves to the ſtipules.

This plant has the generic name *Polygonum*, from the abundance of knots on the ſtem; the trivial name *aviculare* from the gratefulneſs of its ſeeds to ſmall birds; the Engliſh name *Knot-graſs*, from the knottineſs of the ſtem, and becauſe it is eaten by cattle, many ſuch plants having obtained the name of *Graſs*, though they bear no ſimilitude to real graſſes. Hogs eat it with great avidity, and hence it is known in many counties by the name of *Hogweed*. All other domeſtic quadrupeds are ſaid to eat it. The ſeeds are uſeful for every purpoſe in which thoſe of Buckwheat are employed; but they are much ſmaller.

This plant has been conſidered by old writers as poſſeſſing ſome medical virtue, particularly as an aſtringent, and was recommended in diarrhœas, dyſenteries, and hæmorrhages; but in the preſent practice it is juſtly ſuperſeded by more efficacious medicines [x].

Thunberg informs us, that this ſpecies, the *chinenſe* and *barbatum* are cultivated in Japan for dyeing [y].

19. This is an annual plant, native of Philadelphia, whence the ſeeds were ſent by Kalm to Sweden.

20. Root annual, ſmall, fibrous. Stem a foot high, with alternate branches towards the top, ſubdivided into a flowering panicle. Stipules ſolitary, ſheathing, wider upwards, entire, truncate, not cloven. Leaves linear, ſmooth. Filiform very narrow ſpikes terminate the panicle, imbricated with ſheathing turbinate truncated bracteæ: from each ſinus ariſes a ſolitary, capillary peduncle, jointed at the baſe, coloured, one-flowered. Calyx fleſh-coloured, five-parted, with the

[k] Loureiro. [l] Mill. fig. [m] Curtis. [n] Mill. fig. [o] Hort. kew. [p] Mill. fig. [q] Linn. ſpec. [r] Curtis. [s] Gærtner. [t] Smith, Curtis. [u] Curtis and Fl. ruſt. [w] Curt. With. Fl. ruſt. [x] Travels, 4. 90. engl. edit. [y] Thunb.

bottom looſer than in *P. avicularе*. Native of Canada, where it was found by Kalm [a].]

21. Root perennial, creeping, compoſed of many ſtrong woody fibres. Stems about three feet high, divided into many confuſed branches, which are generally bent at each joint. Leaves about four inches long, and half an inch broad, ſmooth, of a light green, and ending in acute points. Flowers white, in looſe ſpikes, branching out from the end of the ſtems [b].

[This beautiful ſpecies, ſays Villars, riſes to the height of two or three feet. Stems branching and ſolid. Leaves wide, reddiſh and a little villoſe, with a ſheathing membrane red at their baſe. Flowers of a whitiſh red, divided into four, five or ſix open ſegments. Stamens from five to eight. Piſtils three.—Native of Siberia—Switzerland, Corſica, Dauphin[e], Piedmont; if the different authors quoted mean the ſame plant.—Cultivated in 1759, by Mr. Miller [c].

22. This very much reſembles the preceding. It is perennial and a native of Siberia [d]. Murray has deſcribed it at length in the Gottingen Commentaries.

23. This was found in Barbary by Shaw.

24. Stem four-cornered, ſmooth, even, grooved, decumbent. Branches alternate, like the ſtalk, ſpreading very much. Leaves alternate, ſubcordate, ovate, acuminate, entire, ſmooth, an inch and half long. Petioles dilated at the baſe, ſheathing, ſtriated. Stipules biſid, membranaceous, generally longer than the petiole: ſegments lanceolate, ſetaceous. Flowers terminating, panicled on pedicels, ſubtrichotomous. Peduncles and pedicels four-cornered, grooved, ſmooth (ſcarcely rugged) erect. Calyx ſubglobular, five-parted, whitiſh. Filaments eight, erect, the length of the corolla. Style erect, ſimple at the baſe, but quickly trifid, white, of the ſame length with the ſtamens. Stigmas three, revolute, white [e].

According to Loureiro, the ſtem is herbaceous, ſuberect, three feet high, round, weak: the ſtipules lanceolate, ſmooth, ſheathing: the leaves red at the edge, and ſomewhat curling: the flowers in ſubdivided, ſpreading racemes.

Linnæus ſays, the ſtem is flexuoſe; the peduncles hiſpid, commonly trifid at the top; the flowers capitate; the ſtipules wide, quite entire, not ciliate, ovate; the heads of flowers roundiſh and few.—Native of the Eaſt Indies, China and Japan.

It is cultivated in China and Japan for dyeing, and produces a beautiful blue colour, much like that from Indigo. The leaves are dried, then pounded, and made into ſmall cakes: with theſe, it is ſaid, they dye linnen, ſilk and cotton. When they boil them for uſe, they add aſhes: the ſtronger the decoction is made, ſo much the darker is the blue colour which is obtained, and the contrary [f].

25. Stem decumbent, branched, very ſhort. Branches alternate, four-cornered, the corners ſharp, prickly backwards, ſmooth, almoſt upright, a foot long. Leaves alternate, but oppoſite to the branch, entire, ſmooth, pale underneath, an inch long. Petioles unequal, commonly ſhorter by half than the leaf, prickly, ſpreading very much. Stipules biſid, a little inflated, quite entire, very ſhort. Flowers terminating, collected together into a ſpherical head. Bractes ovate, acute, entire. Stamens ſeven. Piſtils three. Seeds black, with equal, blunt, entire angles [g].

Linnæus remarks, that it ſometimes climbs up ſhrubs.

Native of North America; alſo of Siberia and Japan.—Cultivated by Mr. Miller in 1759 [h].

26. Stem decumbent. Branches alternate, angular, ſmooth, from upright-ſpreading: angles unequal, ſeveral, prickly backwards. Leaves alternate, acuminate, villoſe and ſtrigoſe, unequal, about an inch in length. Petioles prickly, one fourth of the length of the leaf. Stipules truncate, hirſute, ciliate. Flowers on the branchlets alternately aggregate. Bractes ciliate. Stamens ſeven, with three capillary ſtyles. Stigmas globular. Seeds ſmooth and even, with the angles entire [i].

According to Clayton, the ſtem is ſcandent [k].

Native of Virginia and Florida; alſo of Japan.

27. This is a ſmalliſh plant ſcarce more than a ſpan long. The ſtem is decumbent and flexuoſe, ſmooth, thick, round, reddiſh, and branching at the baſe: the branches are alternate, variouſly bent, and axillary: the ſtipules ſolitary, ſheathing, truncated, and of a pale brown: the leaves linear-lanceolate, haſtate, narrowed at the baſe, ſhortly footſtalked, fleſhy, punctated, almoſt without veins, except the rib, and very ſmooth: ſpikes terminal, emerging from the extreme axils, conglomerate, eight or ten-flowered: peduncles cornered, with very ſhort bending pedicels. Corolla five-petalled, greeniſh-white, petals ovate, concave: ſtamens eight, filaments ſubulate. Piſtils three. Germ ſingle, red. Styles three. Stigmas clavate [l].

28. This reſembles *P. ſagittatum* and *arifolium*. Stem angular, with ſmall recurved prickles; as have alſo the petioles. Stipules not ſheathing, but ſpreading, ovate or roundiſh, quite entire. Leaves a little ſinuate at the baſe, more in breadth than length, ſometimes peltate. Peduncles at the the top of the ſtem, few-flowered, prickly [m].

Stem ſhrubby, ſcandent but without tendrils, fifteen feet high, branched, with many inverted prickles on it; as there are alſo on the petioles and peduncles. Leaves quite entire, ſmooth except on the ribs and margin, which are prickly. Petioles long, alternate. Flowers whitiſh or blue, in ſimple, ſolitary, ſhort, terminating ſpikes. Calyx membranaceous, bell-ſhaped, five-parted; the parts ovate. Filaments eight, very ſlender, faſtened to the middle of the tube. Style trifid. Seed roundiſh, black, ſhining.

There is a variety, ſimilar in habit, with a blue flower, which has a calyx and a corolla, both five-cleft, but the latter fleſhy and almoſt cloſed.

It is uſed medicinally for reſolving tumours, and in a waſh for the itch: œconomically frequent at the table; mechanically for ſoftening ivory and bones [n].

Native of the Eaſt Indies, Japan and Cochinchina, in hedges.

29. Root annual. Stem herbaceous, two feet high. Leaves quite entire, ſmooth, few, alternate, on long petioles. Flowers white, on many-flowered, axillary and terminating peduncles; with oblong, curved common involucres. Calyx bell-ſhaped, five-parted. Stamens eight. Styles three. Seed three-ſided, red [o]; cordate at the baſe, pyramidal-mucronate at the top, toothed or repand at the angles, of a dirty aſh-colour: outer coat cruſtaceous; inner membranaceous, with a brown mark at the baſe: embryo central; cotyledons leafy, tranſverſely flexuoſe [p].

Native of Tartary and China.—Cultivated in 1759, by Mr. Miller [q].

30. Root annual, fibrous. Stem upright, ſomewhat flexuoſe, round, ſmooth, leafy, ſucculent, either wholly green or more frequently tinged with red, from a foot to eighteen inches in height, ſometimes quite ſimple, but more often having ſmall branches coming out ſingly and alternately from the axils. Leaves ſmooth, ſucculent, dark green, quite entire, ſometimes waving on the edge; the lower ones are on petioles two inches in length, but theſe become gradually ſhorter till the upper leaves are ſeſſile. Stipules ſhort, quite entire, awnleſs. Racemes of flowers axillary and terminating, panicled, upright, ſhorter than the leaves, on ſlender peduncles an inch or more in length. The flowers make a handſome appearance, and are either quite white, or tinged with red; with age they become more red. Eight little glands ſurround the baſe of the germ. The eight filaments are of the ſame length with the calyx; four between the glands and the germ, and four between them and the calyx. The ſeed is naked, being ſcarcely covered at

[a] Linn. ſpec. [b] Linn. ſuppl. [c] Thunb. jap. [d] Mill. dict. ed. 7. [e] Thunb. jap. & Trav. 4. 91. engl. ed. [f] Hort. kew. [g] Thunberg. [h] Linn. ſpec. [i] Linn. [k] Loureiro. [l] Marr. in comm. gott. [m] Idem. [n] Gærtner. [o] Hort. kew.

the

the base, it is a three-sided pyramid, with the angles straight not sinuated [a].

Buck-wheat is supposed by some to have come originally from Africa, but it is generally allowed that we derived it from Asia. In China the flour of Buck-wheat is frequently made into the form of cakes [b]. So it is also in Japan [c]. It is not indigenous of Europe, though it has found its way into most of the European Floras, and occurs on dunghills and about cultivated fields. In England it is certainly not indigenous, nor will it bear the rigour of our winters. It flowers in july and august.

Besides *Buck* and *Buck-wheat* (or *Beech-wheat*, from the similitude of the seed, in form, to Beech-mast) it has the appellations of *Brank*, *Crap*, and *French Wheat*. Gerarde has also the name of *Bullimong* [d]. In French it is called *Bled noir* or *Sarrazin*.

The flour of Buck-wheat is made into thin cakes, called crumpits, in some parts of England, and it is supposed to be nutritious, not apt to turn acid upon the stomach [e].

The seed is excellent for horses, either whole or broken, mixed with bran, chaff or grains. A bushel goes farther than two bushels of oats, and mixed with at least four times as much bran, will be full feed for any horse a week. Four bushels of the meal, put up at four hundred weight, will fat a hog of sixteen or twenty stone in three weeks: giving him afterwards three bushels of Indian Corn or hog Peas, broken in a mill, dry, with plenty of water. Eight bushels of Buck-wheat meal will go as far as twelve bushels of barley meal [f].

Mortimer recommends, to feed the plant with milch cows just before it blossoms, and it is said to flush them with milk.

Sheep feeding on the green herb are said to become unhealthy. According to the Swedish experiments. Cows, sheep and goats eat it, swine and horses refuse it.

The seeds are excellent food for poultry.

A field of Buck-wheat furnishes a rich repast for Bees late in the season; hence Mons. Duhamel advises to move the hives in the autumn, to a situation where plenty of this plant is sown [g].

31. Root annual, fibrous, of a brown colour. Stem twining, often to the height of six feet; when destitute of support procumbent and about a foot in length, angular, striated, sometimes a little rugged, branched alternately towards the top. Leaves perfectly entire, smooth, petioled, on the lower part of the stem standing singly, on the upper part two or three together, the lowermost often coloured. Dr. Withering remarks, that their angles at the base are sometimes truncate. Stipules small, forming a sheath round the stem. Racemes peduncled, interrupted, having small leaves on them. Dr. Withering, who calls them flowering spikes, observes that they are longer than the leaves. Flowers in bundles, nodding, white, on the outside green and purple, the three outer segments bluntly keeled, and not having the keel dilated. The eight filaments are fixed into the bottom of the calyx, and are very short and tapering: anthers purple, twin. Style very short, not quite so long as the stamens; stigma forming a little head, composed of three lobes. Seed three-sided, very black [h].

Native of most parts of Europe, Siberia, Japan, &c. in corn fields, gardens and hedges: flowering from june to september.

The seeds afford excellent food for small birds [i]. They are indeed as good for use as those of the preceding species, are produced in greater quantity, and the plant bears cold better. According to the Swedish experiments, cows and goats eat it; sheep, swine and horses refuse it. Dr. Stokes says, a horse will eat it [k], and if sheep will eat the preceding, and goats eat both this and that, we may conclude that sheep will not refuse this. Very little dependance is to be placed on these observations in many cases.

32. Root tuberous, somewhat fleshy, fibrous, white. Stem climbing at bottom, flexuose, even; twining at top, filiform, smooth. Leaves alternate, petioled, subcordate, ovate, acuminate, entire, smooth; the lower ones an inch and half wide, subtruncated at the base, two inches long; the upper ones more cordate and smaller. Flowers panicle-racemed from the axils of the leaves. Panicle compound, spreading very much. Peduncles and pedicels capillary, divaricated. Bractes ovate, acute, entire.

It differs from *P. dumetorum*, which it resembles very much, in having minute blunt flowers, in a branched, racemed, very spreading panicle [l].

Native of Japan, where the root is esteemed as a cordial, and is used for that purpose raw; but it is said to taste best when roasted in the embers [m].

33. Root annual. Leaves cordate, with the lobes of the base rounded. Stem not striated. Panicle of a compound raceme, alternately bifarious. Anthers white [n].

Haller says, the principal difference between this species and *Pol. Convolvulus*, consists in the three membranaceous wide much elevated white wings of the three leaves which include the seed. It grows higher. Some of the flowers are in racemes from the axils, others are disposed in rather large many-flowered, spikes, hanging on long peduncles. The stems are striated.

According to Kroeker, the stem is longer and more twining than in *P. Convolvulus*, and it is not striated. The lobes at the base of the leaves are more rounded. The flowers are rather panicled than racemed. The segments of the calyx are wider, winged, whitish and membranaceous.

Leers remarks, that this as well as *P. Convolvulus* has one short style, with three globular approximating stigmas; that the stem is very slightly striated; and that the membrane on the three outer segments of the calyx is waved.—Native of Germany, Switzerland, France, and Siberia.

34. Stems round, red, succulent, winding itself round trees and shrubs, seven or eight feet high, with alternate leaves towards the top, on petioles a quarter of an inch long, they are grass green, juicy, smooth, thick, an inch and a quarter long, and one inch over at the base. The flowers come out from the upper axils, very many, in spikes three inches long, on a very short peduncle, they are round, flat, swelled out in the middle, and green, having a thin white membrane round them, like a Parsnep seed: when the seed is ripe these membranes become somewhat larger, and the protuberant part in the middle turns brown [o].

Linneus observes, that the base of the petioles in this species, *Pol. dumetorum* and *Convolvulus* is perforated underneath by a pore.

Native of America.

It was cultivated in 1759 by Mr. Miller, is perennial, and flowers in august and september [p].

35. Stem herbaceous, simple, four-cornered, upright, slender, a foot and half high. Stipules embracing. Leaves ovate-lanceolate, quite entire, smooth, alternate, subsessile. Flowers terminating, pale red. Calyx bell-shaped, five-cleft. Seed three-sided, naked. Native of China.

36. Stem herbaceous, one foot high, nearly upright, simple. Stipules blunt, ciliate. Leaves lanceolate, quite entire, smooth, alternate, subsessile; having a sharp pleasant smell, and a hot biting taste like pepper. Flowers small, red, in long stiff spikes. Calyx funnel-form, five-parted. Filaments shorter than the corolla. Styles three, the length of the corolla, with very small globular stigmas. Seed subtrigonal, acuminate at each end, within the shrivelled calyx.

Native of Cochinchina, in moist places, and cultivated all over the country, as an excellent sauce both for flesh and fish [q].

[a] Fl. rud. Smith, Haller, Leers, Ray. [b] Staunton emb. 2: 6.
[c] Thunb. trav. 4. 85. engl. edit. [d] Fl. rust.
[e] Withering. [f] Young's ann. 1. 199. [g] Withering.
[h] Curtis, Smith. [i] Curtis. [k] Withering.

[l] Thunb. jap. [m] Thunb. trav. 1. 81.
[n] Linn. spec. & syst. [o] Sloane. [p] Hort. Kew.
[q] Loureiro.

PROPAGATION AND CULTURE.

3. Biſtort may be propagated by planting the roots in a moiſt ſhady border, either in ſpring or autumn.

6, 7, 10, 11, 12, are common weeds, not admitted into gardens.

15. Oriental Perſicaria riſes from ſcattered ſeeds much better than when ſown: but where they are ſown, it ſhould be in autumn, ſoon after the ſeeds are ripe: ſown in the ſpring they rarely ſucceed, or if ſome plants come up, they ſeldom grow ſo ſtrong. In the ſpring tranſplant them into the borders of the plantation or flower garden, giving them room. At the beginning of july prune off the ſide ſhoots, to make them advance in height, and preſerve them within compaſs: when they are pruned up to five or ſix feet, they may then be permitted to ſhoot out ſide branches. This plant delights in a rich moiſt ſoil.

[It is diſtinguiſhed no leſs for its ſuperior ſtature than the brilliancy of its flowers; it will frequently grow to the height of eight or ten feet, and become a rival to the Sun-flower. It is commonly ſown in the ſpring with other annuals; thinning the ſeedlings, when they appear, ſo as to ſtand a foot apart. It requires very little care, and will bear the ſmoke of London better than many other plants[1].

30. Buck-wheat ſeems to have been cultivated time out of mind in England. Gerarde, in 1597, informs us, that it is very common about Namptwiche in Cheſhire, "where they ſow it as well for food for "their cattle, pullen (or poultry) and ſuch like, as to "ſerve inſtead of a dunging. It groweth likewiſe in "Lancaſhire, about London, as alſo in Kent and "Eſſex."

It is by no means ſo common a crop with us as in many parts of the continent: the county of Norfolk grows more of it than any other. One principal uſe of it is for cleaning foul land, and as a manure, ploughed in when fully grown[2]. In a dry ſummer it is good fodder; and as a crop it will produce an equal quantity with oats, and ſell for more money. The farmer may have any crop after it, eſpecially wheat.

Winter Tares may be ſowed in ſeptember, and mowed off as ſoon as convenient in the ſpring; then Buck-wheat may be ſowed the ſecond week in may, and ploughed in when in flower, which will be about the ſecond week in july; laſtly, ſow Wheat, each on one earth. Or ſeed Turnep may be rolled in, harrowing with a light buſh harrow.

Making Turneps ſucceed Buck-wheat ploughed, is good huſbandry on light lands, where there is a difficulty in procuring manure; and upon heavy ſtrong lands, that have been long under the plough, with two crops and a fallow. A heavy crop of Buck-wheat is certain to be procured on ſtrong clay land, well pulverized, in the month of june, provided the ſummer proves tolerably dry, after the ſeed is ſown.

There is no better way of laying down light lands to graſs, than in the month of june to let Buck-wheat with graſs ſeeds follow Swediſh Turneps. Twelve pounds of white Clover and eight pounds of yellow Trefoil may be ſown on an acre. One buſhel is ſufficient to ſow an acre; but ſome go as far as two buſhels[3].

After it is mown, it muſt lie ſeveral days, till the ſtalk be withered, before it be houſed. It is in no danger of the ſeeds falling, nor does it ſuffer much by wet. It yields fifty or ſixty buſhels upon an acre in good land[4]. Worlidge ſays, it was much ſown in his time in Surrey[5].

POLYGONUM. See *Arenaria*, *Atraphaxis*, *Atriplex*, *Bufonia*, *Cocculoba*, *Corrigiola*, *Dioſcorea*, *Frankenia*, *Gypſophila*, *Herniaria*, *Illecebrum*, *Linum*, *Scleranthus*, *Spergula*, *Tillæa*, *Uvularia*.

Polygonum aquaticum. See *Lythrum*.

——— baccifERUM. See *Ephedra*.

——— fœmina. See *Hipparis*.

——— maritimum. See *Frankenia*.]

[1] Curtis. [2] Fl rust. [3] Young's Ann. 1. 199. 9. 507. & n. 180. [4] Worlidge.

POLYMNIA. (*From* Πολυ *and* μνιον, alga: *an epithet of the ſea*, πολυμνια θαλασσα. *It is alſo the name of one of the Muſes, from* πολυς *and* μνασ.)

Lin. gen. n. 987. *Reich. n.* 1070. *Schreb. n.* 1335. *Gertn. t.* 174. *Juſſ.* 187. Tetragonotheca. *Lin. gen. ed.* 6. *n.* 976. Wedelia. *Jacqu. amer.* 217.

Claſſ. 19. 4. Syngeneſia Polygamia Neceſſaria.

Nat. order of *Compoſitæ Oppoſitifoliæ*. *Corymbiferæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Common exterior* ſpreading, larger, four or five-leaved, with ovate leaflets; *ſuperior* eight or ten-leaved, with boat-ſhaped, erect leaflets.

COR. *Compound* radiate. *Corollets* hermaphrodite many in the diſk: female five or ten in the ray.

Proper of the hermaphrodite funnel-form, five-cleft: of the female ligulate two or three-toothed.

STAM. in the hermaphrodites, *filaments* five. *Anther* cylindric, tubular, a little longer than the corolla.

PIST. in the hermaphrodites: *Germ* very ſmall; *ſtyle* filiform, the length of the ſtamens; *ſtigma* blunt. In the females, *Germ* ovate, biggiſh. *Style* filiform, the length of the tube. *Stigmas* two, acute.

PER. none. *Calyx* unchanged.

SEED in the hermaphrodites none; in the females ſolitary, obovate, gibbous, ſomewhat angular inwards, naked.

REC. chaffy, convex, imbricate: *chaffs* ovate, obtuſe, the length of the florets, concave.

OBS. *In* Tetragonotheca *and* Wedelia *the exterior calyx is four-leaved.* Wedelia *differs from the reſt in having the petals of the ray emarginate, and the pappus of the ſeeds flat and ten-toothed.*

ESSENTIAL CHARACTER.

Cal. exterior four or five-leaved: interior ten-leaved, the leaflets concave. *Corol* none. *Recept.* chaffy.

SPECIES.

1. Polymnia canadenſis. *Canadian Polymnia.*
Lin. ſpec. 1303. *Reich.* 3. 922. *amœn.* 3. 15. *t.* 1. *f.* 5. *Gertn. fruct.* 2. 429.
Leaves alternate haſtate-ſinuate.

2. Polymnia Uvedalia. *Broad-leaved Polymnia.*
Lin. ſpec. 1303. *Juſt.* 790. *Reich.* 3. 921. *Fabric. helmſt.* 2. 145. *Lin. hort. cliff.* 424. *hort. upſ.* 274. *Gron. virg.* 133. (Oſteoſpermum) *Pluk. phyt. t.* 83. *f.* 3. *Mor. hiſt.* 3. 22. *ſ.* 6. *t.* 7. *f.* 55. (Chryſanthemum.)
Leaves oppoſite haſtate-ſinuate.

3. Polymnia Tetragonotheca. *Narrow-leaved Polymnia.*
Lin. ſyſt. 790. *Reich.* 3. 923. *Abbot, Georg. t.* 69.
Tetragonotheca helianthoides. *Lin. ſpec.* 1273. *Mill. dict.*
T. Doronici maximi folio. *Dill. elth.* 378. *t.* 283. *f.* 365.
Leaves oppoſite ſpatulate ſubdentated.

[4. Polymnia abyſſinica. *Upright Polymnia.*
Lin. ſyſt. 790. *ſuppl.* 383. *Ait. kew.* 3. 269.
Leaves oppoſite ſeſſile oblong-lanceolate ſubdentated, calyxes ſcarce parted, all the florets ſeminiferous.

5. Polymnia Wedelia.
Lin. ſyſt. 790. *Reich.* 3. 922. *mant.* 118. *Jacqu. amer. pict.* 106. *t.* 198.
Wedelia fruteſcens. *Jacqu. amer.* 217. *t.* 130.
Leaves lanceolate, ſtem ſhrubby.]

DESCRIPTIONS, *&c.*

1. This has an abiding root, which ſends up many tall ſtalks, ſometimes near ten feet in height. Leaves large, angular, ſinuated, of a deeper green than thoſe of the ſecond ſort. Flowers of a paler yellow colour and ſeſſile. They appear late in the autumn, and are not followed by ſeeds in England. It grows naturally in ſeveral parts of North America. [Cultivated by Mr. Miller in 1768.]

2. Root perennial, running deep in the ground, ſending up in the ſpring many ſtalks in proportion to their ſize; theſe in moiſt good ground will riſe near ten feet high. Leaves large, angular, ſinuated, eight or ten inches over, of a light green. Stems terminated by a cluſter of yellow flowers ſitting cloſe, having very ſhort foot-ſtalks; each having five female ligulate

florets in the border, and ſeveral hermaphrodite florets in the middle, encompaſſed by a double calyx, the outer having five ſpreading leaves, the inner ten erect ones. The flowers appear in october too late to produce ſeeds here. The ſtalks decay in winter.

Native of Virginia, whence Mr. Miller received the ſeeds. [It was cultivated in the Chelſea garden in 1712[a].

Petiver named this plant *Uvedalia* in honour of Robert Uvedale, LL. D. of Trinity College in Cambridge. He lived at Enfield, and cultivated a garden there, which appears to have been rich in exotic productions[b].]

3. Root perennial. Stems about two feet and a half high, branching towards the top. Leaves large, oblong, rough, cloſely embracing; they are a little ſinuated on their edges, and are covered with ſmall hairs. Each of the branches has one large yellow flower at the end, ſhaped like a Sun-flower; before it expands, covered with the inflated four-cornered calyx. The ſeeds rarely ripen in England; and the ſtems periſh in autumn.

Native of Carolina. [Dillenius ſays, that it flowered from Carolina ſeeds, at the beginning of ſeptember 1726, in the Eltham garden. It had the name of *Tetragonotheca*, from its four-cornered calyx[c]. Linneus and Aiton make it a native of Virginia; and Linneus (in his ſpecies) refers to *Gron. virg.* 128. Dillenius refers only to Ray, *hiſt.* 3. *app.* 244. *n.* 7.

4. Root annual (or biennial.) Stem herbaceous, from two to ſix feet high, round, the thickneſs of a finger, rugged, preſſed cloſe, dotted with oval convex browniſh dots, ſparingly branched at top. Leaves like thoſe of *Coreopſis cernua*, embracing, acute, rugged on both ſides. Peduncle terminating, from the forking of the future plant, erect, ſolitary, one-flowered, leafleſs. Common perianth five-leaved, ſpreading, very large: leaflets cordate, ſubſerrate, gaping at the baſe. Corolla yellow: florets of the ray wide, three-toothed, blunt, pubeſcent at the baſe; thoſe of the diſk ſtanding out, pubeſcent at the baſe. Anthers teſtaceous, longer than the corolla. Stigmas ſtanding out, revolute, in the diſk as well as the ray. Seeds oblong, naked. Receptacle convex, chaffy. It has the appearance of *Coreopſis cernua*.

Native of Abyſſinia[e]:—of Africa, where it was found by James Bruce, Eſq. Introduced in 1775. It flowers here in april and may[f].

5. This is a ſhrubby ſcandent plant, with round ſmooth woody ſlender branched brachiate ſtems. Leaves ovate, acute, ſlightly ſerrate, rugged on both ſides, on a ſhort petiole, oppoſite, on the younger branches. Peduncles one-flowered, ſolitary, ſubterminating, new branchlets ſpringing out at their baſe. Flowers yellow, leſs than an inch in diameter. The outer chaffs are larger, and ſeem as if they were the inner leaflets of the imbricate calyx; but on a more accurate inſpection it is plain that they are the chaffs of the radical florets, and that each floret has its proper chaff[g].

It is very nearly allied to the third ſpecies, although the ſeed has a plane ten-toothed crown[h].

The outer calyx is four-leaved only. It differs from the other ſpecies, in having the petals of the ray emarginate, and a plane ten-toothed pappus to the ſeeds[i].—Native of Carthagena in New Spain.]

PROPAGATION AND CULTURE.

1, 2. Theſe plants are propagated by ſeeds, procured from the countries where they grow. If they arrive in the ſpring, and are then ſown, the plants ſeldom come up until the following ſpring: whereas if they could be obtained in november, and were immediately ſown, the plants would appear the following ſpring.

Sow the ſeeds in a bed of light ground in the open air; when the plants come up, thin them, and keep them clean till the following autumn; then take the roots up carefully, and tranſplant them where they are to remain; allowing each plant at leaſt three feet. Keep them clean, and dig about them every ſpring.

3. Sow the ſeeds as directed for the two preceding, and manage it in the ſame manner. The roots will abide through the winter in the open ground, in a warm ſituation. In very ſevere weather they ſhould be covered with rotten tan or peas haulm. They will live three years, but as they do not increaſe it will be beſt to procure ſeeds from abroad annually.

[POLYMNIA CANNOSA & SPINOSA. See *Didelta*.

POLYPARA. See *Houttuynia*.]

POLYPODIUM. (Πολυπόδιον *of Theophraſtus and Dioſcorides: from* πολὺς *and* πους, *many-footed: the roots having many tubercles like thoſe on the feelers of the Polype.*)

Lin. gen. n. 1179. *Reich. n.* 1296. *Schreb. n.* 1632. *Tournef. t.* 316. *Juſſ.* 15. Lonchitis. *Tourn. t.* 314.

Claſſ. 24. 2. Cryptogamia Filices.

Nat. order of *Filices* or *Ferns*.

GENERIC CHARACTER.

Capſules diſtributed in roundiſh dots, on the back or lower ſurface of the frond.

SPECIES.

1. *Frond undivided.*

[1. Polypodium lanceolatum. *Lance-leaved Polypody.*
Lin. ſpec. 1542. *Reich. 4.* 408. *Petiv. fil.* 8. *t.* 6. *f.* 2.
Fronds lanceolate quite entire ſmooth, fructifications ſolitary, ſhoots naked.

2. Polypodium lycopodioides.
Lin. ſpec. 1542. *Reich. 4.* 408. *hort. cliff.* 474. *Brown. jam.* 97. 6. *Plum. fil.* 104. *t.* 119. (Lingua cervina.) *Plum. amer.* 29. *t.* 42. *Raii ſuppl.* 53. 1. *Sloan. hiſt.* 1. 73. (Phyllitis.) *Pet. fil.* 12. *t.* 4. *f.* 15. *Pluk. phyt. t.* 290. *f.* 3. (Filix.)
Fronds lanceolate quite entire ſmooth, fructifications ſolitary, ſhoot ſcaly creeping.

3. Polypodium anguſtifolium. *Narrow-leaved Polypody.*
Swartz prodr. 130.
Fronds linear-lanceolate very long acuminate rigid with a convex margin, fructifications ſcattered, ſhoot creeping.

4. Polypodium grameneum. *Graſſy Polypody.*
Swartz prodr. 130.
Fronds acuminate quite entire ſmooth, fructifications ſolitary, ſhoot naked.

5. Polypodium marginellum. *Margined Polypody.*
Swartz prodr. 130.
Fronds wedge-ſhaped linear blunt margined ſmooth, fructifications ſolitary crowded, ſhoot very ſhort naked.

6. Polypodium repens. *Creeping Polypody.*
Swartz prodr. 130. *Plum. fil. t.* 134. (Lingua cervina.)
Fronds lanceolate acuminate ſmooth entire, fructifications ſcattered, ſhoot creeping.

7. Polypodium ſerpens. *Rooting Polypody.*
Swartz prodr. 131. *Plum. fil. t.* 124. (Lingua cervina.)
Fronds lanceolate-linear ſmooth ſomewhat waved, fructifications ſolitary, ſhoot hirſute rooting.

8. Polypodium acroſtichoides.
Forſt. prodr. n. 434.
Fronds linear entire ſmooth, fructifications crowded.

9. Polypodium ſtellatum. *Starry Polypody.*
Vahl ſymb. 3. 104.
P. ſerpens. *Forſt. prodr. n.* 435.
Fronds lanceolate-linear blunt quite entire hoary underneath, fructifications ſolitary, ſhoots creeping hirſute.

10. Polypodium piloſelloides.
Lin. ſpec. 1542. *Reich. 4.* 409. *Brown. jam.* 97. 5. *Plum. fil.* 103. *t.* 118. (Lingua cervina.) *Pet fil.* 175. *t.* 10. *f.* 5. (Filix.)
Fronds lanceolate quite entire rough-haired, the barren ones ovate, fructifications ſolitary.

11. Polypodium immerſum. *Immerſe fruited Polypody.*
Vahl ſymb. 3. 104.
Fronds oblong-lanceolate or oblong very blunt acute at the baſe quite entire ſmooth, fructifications in rows immerſed.

12. Polypodium

[a] Hort. kew.
[b] Pulteney, biogr. 2. p. 30.
[c] Hort. elth.
[d] Linn. ſuppl.
[e] Hort. kew.
[f] Jacquin.
[g] Linn. mant.
[h] Linn. ſyſt.

12. Polypodium heterophyllum. *Various-leaved Polypody.*
Lin. ſpec. 1543. *Reich.* 4. 409. *Plum. fil.* 105. *t.* 120. (Lingua cervina.) *Pet. fil.* 174. *t.* 15. *f.* 4. (Filix.)
Fronds crenate ſmooth, the barren ones roundiſh ſeſſile, the fertile ones lanceolate, fructifications ſolitary.
13. Polypodium craſſifolium. *Thick-leaved Polypody.*
Lin. ſpec. 1543. *Reich.* 4. 409. *Brown. jam.* 96. 1. *Pet. fil.* 1. 6. *t.* 8. (Phyllitis.) *Plum. fil.* 107. *t.* 123.
β. *Plum. fil.* 122. *t.* 124.
Fronds lanceolate ſmooth quite entire, fructifications in rows.
14. Polypodium phyllitidis.
Lin. ſpec. 1543. *Reich.* 4. 410. *Plum. amer.* 26. *t.* 38. *Raii ſuppl.* 52. 16. *Pet. fil.* 5. *t.* 6. *f.* 10. *Sloan. jam.* 1. 72. (Phyllitis.)
Fronds lanceolate ſmooth quite entire, fructifications ſcattered.
15. Polypodium comoſum. *Many-cleft Polypody.*
Lin. ſpec. 1543. *Reich.* 4. 410. *Plum. fil.* 115. *t.* 131. (Lingua cervina.) *Pet. fil.* 6. *t.* 6. *f.* 11. (Phyllitis.)
Fronds lanceolate ſmooth quite entire, multifid at the top, fructifications ſcattered.
16. Polypodium trifurcatum. *Three-cleft Polypody.*
Lin. ſpec. 1543. *Reich.* 4. 410. *Plum. fil.* 120. *t.* 138. (Lingua cervina.) *Pet. fil.* 34. *t.* 15. *f.* 3. (Polypodium.)
Fronds lanceolate ſmooth repand-ſinuate, three-lobed at top.
17. Polypodium lineare. *Linear-leaved Polypody.*
Lin. ſyſt. 934. *Thunb. jap.* 335.
Fronds linear-lanceolate entire ſmooth, fructifications ſolitary.
18. Polypodium enſatum. *Sword-leaved Polypody.*
Thunb. in Linn. tranſ. 2. 341.
P. phyllitis. *Thunb. jap.* 335.
Frond elliptic-enſiform ſmooth entire, fructifications ſcattered.
19. Polypodium Pica.
Lin. ſyſt. 935. *ſuppl.* 446.
Frond ſimple cordate three-lobed, lobes lanceolate ſubulate eared at the baſe, the middle one elongated.
2. *Frond pinnatifid with the lobes coadunate.*
20. Polypodium phymatodes.
Lin. ſyſt. 935. *Reich.* 4. 411. *mant.* 306. *Burm. zeyl.* 196. *t.* 86. *Lunr. cochinch.* 673. *Pluk. phyt. t.* 404. *f.* 5. (Filix.)
Fronds ſimple trifid or five-lobed lanceolate, above the fructifications warted.
21. Polypodium pendulum. *Pendulous Polypody.*
Swartz prodr. 131.
Fronds pinnatifid ſubſeſſile ſmooth pendulous, lobes oblong bluntiſh.
22. Polypodium haſtatum. *Haſtate-leaved Polypody.*
Lin. ſyſt. 935. *Thunb. japp.* 335.
Frond trifid haſtate.
23. Polypodium criſpatum. *Curled-leaved Polypody.*
Lin. ſpec. 1544. *Reich.* 4. 411. *Plum. fil.* 85. *t.* 102. B. *Pet. fil.* 25. *t.* 13. *f.* 12.
Fronds pinnatifid ſmooth, lobes ſemiorbiculate crenate.
24. Polypodium inciſum. *Gaſh-leaved Polypody.*
Swartz prodr. 131. *Plum. fil. t.* 91.
P. ſcolopendrioides. *Lin. ſpec. ed.* 1.
Fronds lanceolate pinnatifid, lobes rounded, the lower leſs and united.
25. Polypodium trichomanoides.
Swartz prodr. 131.
Fronds pinnatifid ſomewhat hairy, lobes ſemiovate obtuſe.
26. Polypodium myoſuroides.
Swartz prodr. 131.
Fronds pinnatifid ſmooth, lobes united into a lanceolate top fruitiferous, the lower ones remote.
27. Polypodium ſuſpenſum.
Lin. ſpec. 1544. *Reich.* 4. 411. *Plum. fil.* 67. *t.* 87. *Pet. fil.* 24. *t.* 1. *f.* 15.
Fronds pinnatifid ſmooth, lobes ſemiovate acute.
28. Polypodium aſplenifolium.
Lin. ſpec. 1544. *Reich.* 4. 411. *Plum. fil.* 85. *t.* 102. A. *Pet. fil.* 26. *t.* 7. *f.* 16.

β. *Pet. fil.* 35. *t.* 14. *f.* 1. *Plum. fil.* 68. *t.* 88.
Fronds pinnatifid hairy, lobes ſemiovate acute?
29. Polypodium vulgare. *Common Polypody.*
Lin. ſpec. 1544. *Reich.* 4. 412. *hort. cliff.* 475. *fl. lapp. n.* 381. *ſpec. n.* 944. *mat. med.* 226. *Woodv. med. bot. t.* 271. *Hudſ. angl.* 455. *Wither. arr. ed.* 3. 773. *Curt. lond.* 1. 68. *Lighf. ſcot.* 667. *Relh. cant. n.* 762. *Sibth. oxon. n.* 745. *Abbot, bedf.* 226. *n.* 735. *Fl. dan. t.* 1060. *Hall. helv. n.* 1696. *Scop. carn. n.* 1266. *Pollich pal. n.* 961. *Allion. pedem. n.* 2398. *Villars dauph.* 3. 840. *Deſcnt. atlant.* 405. *Weiſ. crypt.* 303. *Blackw. t.* 215. *Kniph. cent.* 6. *n.* 72. *Regn. bot. Zorn. ic.* 1. *t.* 46. *Bolton, fil.* 32. *t.* 18. *Bullard, herb. t.* 191. *Baub. pin.* 359. *Tournef. inſt.* 540. *t.* 316. *Fuchſ. hiſt.* 588. *Pauli, dan. t.* 109. *Lob. obſ.* 475. 1. *ic.* 814. 2. *Tabern. ic.* 798. *Mor. hiſt. f.* 14. *t.* 2. *f.* 1. *Plum. fil. t.* A. *f.* 2. *Park. theat.* 1039. 1.
Polypodium. *Trag.* 540. *Baub. hiſt.* 3. 746. *Ger.* 972. & 974. 1. *emac.* 1132. *f.* 1, 2. *Matth.* 1292. *Raii hiſt.* 137. *ſyn.* 117.
P. majus. *Dod. pempt.* 464.
Filicula ſ. Polypodium. *Camer. epit.* 993.
β. Polypodium minus. *Baub. pin.* 359. *Dod. pempt.* 464.
γ. P. murale pinnulis ſerratis. *Petiv. bot. hort.* 11. *t.* 1. *Raii ſyn.* 117. 2. *Hudſ.* β. *With. var.* 2.
P. majus ſerrato folio. *Barrel. obſ.* 12. 64. *ic. n.* 38. *Tournef. inſt.* 540.
δ. P. cambricum. *Welſh* or *jagged Polypody.*
Lin. ſpec. 1546. *Hudſ.* γ. *Wither. var.* 4. *Raii hiſt.* 137. 2. *ſyn.* 117. 3. *Pluk. phyt.* 30. 1. *Mor. hiſt. ſ.* 14. *t.* 2. *f.* 8. *Bolton, fil.* 2. 5.
Fronds pinnatifid, pinnas oblong ſubſerrate blunt, root ſcaly.
30. Polypodium virginianum. *Virginian Polypody.*
Lin. ſpec. 1545. *Reich.* 4. 412. *Pet. fil.* 22. *t.* 7. *f.* 9. *Plum. amer.* 25. *t.* 36. *fil.* 60. *t.* 77. *Raii ſuppl.* 56. *ult. Mor. hiſt.* 3. 563. *ſ.* 14. *t.* 2. *f.* 3.
Fronds pinnatifid, pinnas oblong ſubſerrate blunt, root ſmooth.
31. Polypodium Otites.
Lin. ſpec. 1545. *Reich.* 4. 412. *Pet. fil.* 32. *t.* 1. *f.* 16. *Plum. fil.* 36. *t.* 85.
Fronds pinnatifid, lobes lanceolate alternate blunt diſtant.
32. Polypodium incanum. *Hoary Polypody.*
Swartz. prodr. 131.
Acroſtichum polypodioides. *Lin. ſpec.* 1525. *Brown. jam.* 105. 2.
Fronds pinnatifid, pinnas lanceolate blunt diſtant ſpreading entire, underneath and on the ſtipe hoary-ſcaleletted.
33. Polypodium puſtulatum.
Forſk. prodr. n. 436.
Fronds pinnatifid even, pinnas oblong entire acuminate.
34. Polypodium ſcandens. *Scandent Polypody.*
Forſk. prodr. n. 437.
Fronds pinnatifid even, pinnas linear blunt waved diſtant, runners rooting ſcandent.
35. Polypodium pectinatum.
Lin. ſpec. 1545. *Reich.* 4. 413. *Forſk. ægypt.* 7. 185. *Pet. fil.* 31. *t.* 7. *f.* 14. *Plum. amer.* 26. *t.* 37. *fil.* 64. *t.* 83.
Fronds pinnate lanceolate, lobes approximating enſiform parallel acute horizontal, root naked.
36. Polypodium taxifolium. *Yew-leaved Polypody.*
Lin. ſpec. 1545. *Reich.* 4. 413. *Pet. fil.* 35. *t.* 14. *f.* 1. *Plum fil.* 69. *t.* 89.
Fronds pinnate, lobes approximating enſiform parallel acute aſcending, root rough-haired.
37. Polypodium ſtruthionis. *Oſtrich-feathered Polypody.*
Lin. ſpec. 1545. *Reich.* 4. 413. *hort. cliff.* 475. *Pet. fil.* 30. *t.* 3. *f.* 8. *Plum. fil.* 64. *t.* 82.
Fronds pinnate, lobes approximating enſiform repand horizontal.
38. Polypodium ſquamatum. *Scaly Polypody.*
Lin. ſpec. 1546. *ſyſt.* 935. *Reich.* 4. 413. *Plum. fil.* 61. *t.* 79.

Fronds pinnatifid rugged, pinnas lanceolate distant horizontal quite entire.

39. Polypodium loriceum.
Lin. spec. 1546. *Reich.* 4. 413. *Laur. cochinch.* 674. *Pet. fil.* 27. 28. *t.* 7. *f.* 10. 12. *Plum. fil.* 60. *t.* 78.

Fronds pinnatifid even, pinnas lanceolate distant horizontal repand.

40. Polypodium alatum. *Winged Polypody.*
Lin. spec. 1546. *Reich.* 4. 414. *Pet. fil.* 37. *t.* 7. *f.* 13. *Plum. fil.* 65. *t.* 84.

Fronds pinnatifid even, pinnas oblong distant toothed.

41. Polypodium ellipticum. *Elliptic-leaved Polypody.*
Lin. syst. 935. *Thunb. jap.* 335.

Fronds pinnatifid, pinnas elliptic even entire, shoot creeping.

42. Polypodium aureum. *Golden Polypody.*
Lin. spec. 1546. *Reich.* 4. 414. *hort. cliff.* 475. *Plum. amer.* 25. *t.* 35. *fil.* 59. *t.* 76. *Raii suppl.* 56. *Pet. fil.* 15. *t.* 7. *f.* 8. *Mor. hist.* 3. 563.

Fronds pinnatifid smooth and even, pinnas oblong distant, the lowest patulous, the terminating one very large, fructifications in rows.

43. Polypodium quercifolium. *Oak-leaved Polypody.*
Lin. spec. 1547. *Reich.* 4. 414. *fl. zeyl. n.* 382. *Hill. anat. t.* 10. *Baub. pin.* 359. *Mor. hist.* 3. 564. *f.* 14. *t.* 1. *f.* 15. *Pet. mus.* 794. *Raii suppl.* 57. *super. Clus. exot.* 88. *t.* 89. *Pis. mant.* 195. *Rumph. amb.* 6. 78. *t.* 36. *Rheed. mal.* 12. 23. *t.* 11.

Barren fronds sessile shorter blunt sinuate, fruiting fronds alternate-pinnate lanceolate.

3. *Frond trifoliate: peduncle with three leaflets.*

44. Polypodium trifoliatum. *Three-leaved Polypody.*
Lin. spec. 1547. *Reich.* 4. 415. *hort. cliff.* 475. *Pet. fil.* 18. *t.* 7. *f.* 3. *Brown. jam.* 97. 7. *Raii suppl.* 66. 2. (Lonchitis.) *Plum. amer.* 22. *t.* 32. *fil.* 127. *t.* 148. (Hemionitis.) *Sloan. jam.* 1. 85. *t.* 42. (Hemionitidi affinis.) *Pluk. phyt. t.* 291. *f.* 3. (Filix f. Hemionitis.)

Fronds ternate sinuate-lobed, the middle one larger.

4. *Frond pinnate.*

45. Polypodium Lonchitis. *Rough Polypody* or *Spleenwort.*
Lin. spec. 1548. *syst.* 936. *Reich.* 4. 415. *hort. cliff.* 475. *Hudf. angl.* 455. *Wither. arr. ed.* 3. 773. *Lightf. scot.* 668. *Fl. dan. t.* 497. *Act. nidrof.* 4. *t.* 5. *f.* 2, 3. *Gunn. norv. n.* 49. *Hall. helv. n.* 1711. *Scop. carn. n.* 1267. *Villars dauph.* 3. 840. *Gron. virg.* 123. *Bolt. fil.* 19.
Lonchitis aspera. *Baub. pin.* 359. *Raii hist.* 138.—ruajor. *Camer. epit.* 664. *Matth.* 922. *Baub. hist.* 3. 744. *Ger.* 979. *emac.* 1140. 3. *Park. theat.* 1042. 1. *Raii syn.* 118. *Mor. hist.* 3. 566. *f.* 14. *t.* 2. *f.* 1. *Pluk. phyt. t.* 89. *f.* 6.
β. Lonchitis mas f. latifolia aspera minor. *Barrel. ic.* 1121.

Fronds pinnate, pinnas crescent-shaped ciliate-ferrate declined, stipes strigose.

46. Polypodium muricatum. *Thorny-leaved Polypody.*
Swartz prodr. 131. *Sloan. jam.* 1. 81. *t.* 36. (Trichomanes.)

Fronds pinnate, pinnas falcate-lanceolate subferrate eared upwards, at bottom and in front spiny, stipe scaly.

47. Polypodium semicordatum. *Half-heart-leaved Polypody.*
Swartz prodr. 132. *Plum. fil. t.* 113. (Lingua cervina.)

Frond pinnate, pinnas parallel lanceolate very smooth, obliquely cordate at the base, the lower lobe more gibbous, fructifications in four rows.

48. Polypodium sagittatum. *Arrow-leaved Polypody.*
Swartz prodr. 132.

Frond pinnate, pinnas lanceolate blunt entire, having a toothlet on each side at the base, the lower one mutilated triangular minute.

49. Polypodium exaltatum. *Lofty Polypody.*
Lin. spec. 1548. *Reich.* 4. 416. *Brown. jam.* 99. 14. *Plum. amer.* 19. *t.* 28. *Sloan. jam.* 1. 77. *t.* 31. (Lonchitis.)

Fronds pinnate, pinnas ensiform entire, gibbous at the lower base inwards, at the upper base upwards.

50. Polypodium rhizophyllum. *Rooting-leaved Polypody.*
Swartz prodr. 132.

Fronds pinnate decumbent, tailed at the tip, the fruiting ones rooting, pinnas ovate-deltoid.

51. Polypodium auriculatum. *Eared Polypody.*
Lin. spec. 1548. *Reich.* 4. 416. *fl. zeyl. n.* 383. *Brevn. cent.* 189. *t.* 44. *f.* 2. *Raii suppl.* 69. 2. *Burm. zeyl.* 98. *t.* 44. *f.* 2. *Pluk. phyt. t.* 30. *f.* 4. (Filix.) *Mor. hist.* 3. 566. (Lonchitis.)

Fronds pinnate, pinnas falcate-lanceolate ferrate, truncate at the base, eared upwards.

52. Polypodium unitum.
Lin. spec. 1548. *syst.* 936. *Reich.* 4. 416. *Desfont. atlant.* 407. *Pet. mus.* 10. *t.* 1. *f.* 55. *Burm. zeyl.* 98. *t.* 44. *f.* 1. (Filix.)

Fronds pinnate, pinnas ensiform serrate, serratures semiovate ovate-nerved.

53. Polypodium sophoroides.
Thunb. in Linn. transf. 2. 341.

Fronds pinnate, pinnas ensiform gash-serrate, serratures semiovate nerved, the lowest serrature longer above.

54. Polypodium triangulare. *Triangular-leaved Polypody.*
Lin. spec. 1549. *Reich.* 4. 417. *Pet. fil.* 76. *t.* 1. *f.* 10. *Plum. fil.* 54. *t.* 72.

Frond pinnate, pinnas triangular toothed.

55. Polypodium obliteratum.
Swartz prodr. 132.

Frond pinnate, pinnas alternate broad-lanceolate attenuated crenate, notches at the tip and base obliterated on both sides.

56. Polypodium crenatum. *Notch-leaved Polypody.*
Swartz prodr. 132. *Plum. fil. t.* 3. *amer.* 10.

Frond pinnate, pinnas oblong-lanceolate crenate-smooth, fructifications in double rows.

57. Polypodium cordifolium. *Heart-leaved Polypody.*
Lin. spec. 1549. *Reich.* 4. 417. *Plum. fil.* 54. *t.* 72. *Pet. fil.* 75. *t.* 1. *f.* 11. (Trichomanes.)

Fronds pinnate, pinnas cordate blunt quite entire repand.

58. Polypodium simile.
Lin. spec. 1549. *Reich.* 4. 417. *Laur. cochinch.* 674. *Sloan. jam.* 1. 77. *t.* 32. (Lonchitis.)

Fronds pinnate, pinnas lanceolate quite entire distant, the upper ones smaller, dots in rows.

59. Polypodium dissimile.
Lin. spec. 1549. *Reich.* 4. 417. *Brown. jam.* 100. *n.* 23. *Pluk. phyt. t.* 288. *f.* 1. (Filix.)

Fronds pinnate, pinnas lanceolate subpubescent confluent, the lower ones distinct, dots scattered.

60. Polypodium Serra. *Saw-leaved Polypody.*
Swartz prodr. 132. *Sloan. jam.* 1. 90. *t.* 48. *Pluk. phyt. t.* 244. *f.* 1.

Frond bipinnatifid, pinnas linear very long attenuated ferrate, serratures semiovate acute striated.

61. Polypodium tetragonum. *Square-stalked Polypody.*
Swartz prodr. 132.

Fronds bipinnatifid, pinnas lanceolate acuminate opposite distant horizontal, segments ovate bluntish, stipe four-cornered.

62. Polypodium sanctum.
Swartz. prodr. 133.
Acrostichum sanctum. *Lin. spec.* 1526. *Brown. jam.* 105. *n.* 5. *Diff. noftr.*

Fronds subbipinnate, upper pinnas ecaudate, lower linear blunt entire, lowest biggish acute crenate.

63. Polypodium reticulatum. *Netted-leaved Polypody.*
Lin. spec. 1549. *Reich.* 4. 417. *Plum. amer.* 6. *t.* 9. *fil. t.* 92.

Fronds pinnate, pinnas oblong quite entire anastomosing rectangular, dots rectangular approximating.

64. Polypodium deltoideum. *Deltoid Polypody.*
Swartz prodr. 133.

Frond bipinnatifid, lower pinnas abbreviated entire oblong deltoid reflex.

65. Polypodium cicutarium.
Lin. spec. 1549. *Reich.* 4. 418. *Brown. jam.* 97. *n.* 8.

Fronds ternate, leaflets bipinnate laciniate at the base bluntly gash-ferrate acuminate, the lowest more gibbous.

66. Polypodium

66. Polypodium fontanum. *Rock Polypody.*
Lin. ſpec. 1550. *ſyſt.* 937. *Reich.* 4. 418. *Gouan illuſtr.* 80. *Hudſ. angl.* 456. *Wither. arr. ed.* 3. 777. *Hall. helv. n.* 1706. *Laws herborn. n.* 790. *Pallas it.* 2. 28. *Villars dauph.* 3. 849. *Allion. pedem. n.* 2413. *Bolt. fil.* 21.
Adianthum album. *Lob. adv.* 361. 2. *ic.* 810. 1. *Ger.* 980. 2. *Barrel. ic.* 452. *f.* 1.
Filicula ſaxatilis omnium minima elegantiſſima. *Tournef. inſt.* 71. *Pluk. phyt. t.* 89. *f.* 2. 3. *Garid. aix.* 183. *Raii exter.* 126 & 296.
F. fontana. *Tabern. ic.* 792.—minor. *Bauh. pin.* 358.
Fronds pinnate lanceolate, leaflets roundiſh ſharply gaſhed, ſtipe even.
67. Polypodium falcatum. *Sickle-leaved Polypody.*
Lin. ſyſt. 937. *ſuppl.* 446. *Thunb. jap.* 336. *t.* 36.
Fronds pinnate, pinnas cordate falcate acuminate entire, fructifications approximating ſcattered.
68. Polypodium marginale.
Lin. ſyſt. 937. *Thunb. jap.* 337.
Fronds pinnate, upper pinnas coaleſcent, lower enſiform eared upwards gaſhed, ſtipe villoſe.
69. Polypodium evectum.
Forſt. prodr. n. 438.
Fronds pinnate, pinnas oppoſite oblong, at the top linear-acuminate ſerrate, fructifications in a continued line along the margin.
70. Polypodium hirſutulum.
Forſt. prodr. n. 439.
Fronds pinnate, pinnas oblong bluntly ſerrate, eared upwards at the baſe.
71. Polypodium tenellum.
Forſt. prodr. n. 440.
Fronds pinnate, leaflets alternate remote linear acuminate waved.
72. Polypodium diſſectum.
Forſt. prodr. n. 441.
Fronds pinnate, leaflets pinnatifid, pinnules oblong bluntly ſerrate, the lower ones longer ſcarcely coaleſcent.
73. Polypodium nymphale.
Forſt. prodr. n. 442.
Fronds pinnate pubeſcent, leaflets linear very long pointed ſerrate, pinnatifid at the baſe, ſegments oblong blunt ſcarcely falcated forwards.
74. Polypodium inviſum.
Forſt. prodr. n. 443. *Swartz prodr.* 133. *Sloan. jam.* 1. 90. *t.* 51. (Filix.)
Fronds pinnate ſmooth, leaflets linear very long pointed ſerrate-pinnate, pinnas lanceolate falcate-acute, connate at the baſe.
75. Polypodium pennigerum.
Forſt. prodr. n. 444.
Fronds pinnate ſmooth, leaflets linear very long pointed ſubpinnate, pinnas ovate-oblong blunt connate.

5. *Frond bipinnate* or *ſubbipinnate.*

76. Polypodium Phegopteris. *Wood Polypody.*
Lin. ſpec. 1550. *Reich.* 4. 418. *hort. cliff.* 475. *Fl. ſuec. n.* 945. *lapp. n.* 382. *Weiſ. crypt.* 306. *Hudſ. angl.* 456. *Wither. arr. ed.* 3. 775. *Lightf. ſcot.* 669. *Gunn. norv. n.* 50. *Hall. helv. n.* 1698. *Pollich pal. n.* 962. *Villars dauph.* 3. 850. *Bolton, fil.* 20. *Amm. aſt. petr.* 10. *t.* 21. (Phyllitis.) *Petit. epiſt.* 56. *t.* 50. (Filix.)
Filix minor britannica, pediculo pallidiore, alis inferioribus deorſum ſpectantibus. *Mor. hiſt.* 3. 575. *ſ.* 14. *t.* 4. *n.* 17. *f.* 3. *Raii ſyn.* 122.
Fronds ſubbipinnate, loweſt leaflets reflex, each pair united at the baſe by a four-cornered little appendage.
77. Polypodium retroflexum.
Lin. ſpec. 1550. *Reich.* 4. 419. *Plum. fil.* 52. *t.* 68. *Pet. fil.* 72. *t.* 1. *f.* 9. (Filicula.)
Fronds ſubbipinnate, loweſt leaflets reflex, pinnas jagged.
78. Polypodium fragrans. *Sweet Polypody.*
Lin. mant. 307. *Pallas, it.* 3. 293. *Deſont. atlant.* 408. *Lour. cochinch.* 675? *Amm. ruth.* 251. (Dryopteris.)
Fronds bipinnate, pinnas ovate ſublobed blunt naked underneath bent back at the edge, fructifications marginal.

79. Polypodium paraſiticum. *Paraſitical Polypody.*
Lin. ſpec. 1551. *Reich.* 4. 419.
Kari-welli-panna. *Rheed. mal.* 12. *p.* 35. *t.* 17.
Fronds ſemibipinnate lanceolate, lobules rounded quite entire ſtriated.
80. Polypodium varium.
Lin. ſpec. 1551. *Reich.* 4. 420. *Lour. cochinch.* 675.
Fronds lateral bipinnate, loweſt leaflet pinnatifid.
81. Polypodium criſtatum. *Creſted Polypody.*
Lin. ſpec. 1551. *Reich.* 4. 420. *Weig. obſ.* 35. *n.* 24. *Schreb. ſpicil.* 71. *Weis, crypt.* 317. *t. Hudſ. angl.* 457. *Wither. arr. ed.* 3. 778. *Lightf. ſcot.* 670. *Relh. cant. n.* 764. *Sibth. oxon. n.* 746. *Abbot, bedf.* 226. *n.* 736. *Hall. helv. n.* 1075. *Scop. carn. n.* 1271. *Mull. fridr.* 193. *n.* 845. *t.* 2. *f.* 4. *Bolton, fil.* 23.
Filix mas ramoſa pinnulis dentatis. *Ger. emac.* 1129. *Raii hiſt.* 150. *ſyn.* 124. *Pluk. phyt. t.* 181. *f.* 2.
Fronds ſubbipinnate, leaflets ovate-oblong, pinnas blunt ſharply ſerrate at the tip.
82. Polypodium patens. *Pubeſcent Polypody.*
Swartz prodr. 133. *Ait. kew.* 3. 464. *Sloan. jam.* 1. 91. *t.* 52. *f.* 1. (Filix.)
Frond bipinnatifid ſomewhat villoſe underneath, pinnas linear-lanceolate elongated, pinnules oblong acute entire, the loweſt longer.
83. Polypodium Filix mas. *Male Polypody* or *Fern.*
Lin. ſpec. 1551. *ſyſt.* 937. *Reich.* 4. 421. *hort. cliff.* 475. *fl. ſuec. n.* 946. *lapp. n.* 385. *mat. med.* 226. *Woodv. med. bot.* 136. *t.* 49. *Hudſ. angl.* 458. *Wither. arr. ed.* 3. 775. *Lightf. ſcot.* 671. *Relh. cant. n.* 765. *Sibth. oxon. n.* 748. *Abbot, bedf.* 226. *n.* 737. *Gunn. norv. n.* 4. *t.* 1. *f.* 4. *Hall. helv. n.* 1701. *Scop. carn. n.* 1270. *Pollich pal. n.* 963. *Villars dauph.* 3. 842. *Allion. pedem. n.* 2404. *D'Alſo arag. n.* 1000. *Deſont. atlant.* 405. *Weiſ. crypt.* 310. *Blackw. t.* 323. *Knipb. cent.* 6. *n.* 71. *Regn. bot. Bulliard herb. t.* 183. *Bolton, fil.* 44. *t.* 24.
Filix mas. *Fuchſ. hiſt.* 595. *Tabern. ic.* 591. *Matth.* 1290. *Dalech.* 1222. *Trag.* 546. *Dod. pempt.* 462. 1. *Camer. epit.* 991. *Lob. ic.* 812. *Ger.* 969. 1.
F. mas vulgaris. *Park. theat.* 1036. *Raii hiſt.* 143. *ſyn.* 120.
F. non ramoſa dentata. *Bauh. pin.* 358. *Tourn. inſt.* 536. *t.* 310—312. *Mor. hiſt. ſ.* 14. *t.* 3. *f.* 6.
F. vulgo mas dicta, ſ. non ramoſa. *Bauh. hiſt.* 3. 738.
F. mas non ram. pinnulis latis denſis minutim dentatis. *Ger. emac.* 1129. *t.* 1128. *f.* 1.
Fronds bipinnate, pinnas obtuſe crenulate, ſtipe chaffy.
84. Polypodium Filix fœmina. *Female Polypody* or *Fern.*
Lin. ſpec. 1551. *ſyſt.* 937. *Reich.* 4. 421. *fl. lapp. n.* 386. *ſuec. n.* 947. *Hudſ. angl.* 458. *Wither. arr. ed.* 3. 778. *Lightf. ſcot.* 673. *Relh. cant. n.* 766. *Sibth. oxon. n.* 749. *Abbot, bedf. n.* 738. *Gunn. norv. n.* 29. *Hall. helv. n.* 1704. *Pollich pal. n.* 964. *Scop. carn. n.* 1268. *Villars dauph.* 3. 845. *Weiſ. crypt.* 315. *β. Blackw. t.* 325. *Bolton, fil.* 25.
Filix mas non ramoſa pinnulis anguſtis rarioribus profunde dentatis. *Ger. emac.* 1130. *Raii hiſt.* 144. *ſyn.* 121. *Mor. hiſt.* 3. 579. *ſ.* 14. *t.* 3. *f.* 8. *Pluk. phyt. t.* 180. *f.* 4.
F. mollis ſ. glabra, vulgari mari non ramoſa accedens. *Bauh. hiſt.* 3. 738.
F. petræa femina 1. *Tabern.* 793.
Frond bipinnate, pinnules lanceolate pinnatifid acute.
85. Polypodium Oreopteris. *Mountain Polypody.*
Ehrhart, crypt. dec. n. 22. *Dickſ. in Linn. tranſ.* 1. 181. *Teaſd. id.* 2. 113. *Sibth. oxon. n.* 767. *Wither. arr. ed.* 3. 775.
P. montanum. *Willd. berol. n.* 883. *Vogler, monog.*
P. Thelypteris. *Hudſ. angl.* 457. *Lightf. ſcot.* 674. *Bolt. fil. t.* 24. & *t.* 22. 2.
Filix mas pinnulis rigidioribus & acutioribus, marginibus lineis ſeminalibus ex frequentibus tuberculis pulverulentis compoſitis notatis, Petiveri. *Raii ſyn. ed.* 2. *app.* 341. *v. ed.* 3. 122.

Fronds ſubbipinnate, pinnas alternate, pinnules quite entire lanceolate blunti∫h, fructifications marginal, root ſcaly.

86. Polypodium Thelypteris. *Marſh Polypody.*
Lin. ſyſt. 937. *Reich.* 4. 421. *Weis. crypt.* 307. *Hedw. theor.* 6. *Wither. arr. ed.* 3. 776. *Fl. dan. t.* 760. *Hall. helv. n.* 1697. *Schmid. ic.* 11. *f.* 1, 2. *Deſont. atlant.* 406.

Acroſtichum Thelypteris. *Lin. ſpec.* 1528. *mant.* 505. *fl. ſuec. n.* 939. *Bolton, fil. t.* 43.

Filix minor paluſtris repens. *Raii ſyn.* 122.

F. minor non ramoſa. *Bauh. hiſt.* 3. 739. 1. *Raii hiſt.* 146. *Mapp. alſat.* 106. *t.* 7.

F. paluſtris repens pinnulis non dentatis. *Mor. hiſt. ſ.* 14. *t.* 4. *f.* 17.

Dryopteris. *Lob. ic.* 814. *Ger.* 981. 3. *emac.* 1135. 1.—*ſ.* F. querna repens. *Park. theat.* 1041. 1.

Fronds bipinnate, pinnas pinnatifid quite entire covered with pellen underneath.

87. Polypodium aculeatum. *Prickly Polypody.*
Lin. ſpec. 1552. *ſyſt.* 937. *Reich.* 4. 422. *Weis. crypt.* 322. *Huds. angl.* 459. *Wither. arr. ed.* 3. 777. *Lightf. ſcot.* 675. *Relh. cant. n.* 767. *Sibth. oxon. n.* 750. *Abbot, bedf. n.* 740. *Hall. helv. n.* 1712. *Pollich pal. n.* 965. *Scop. carn. n.* 1269. *Villars dauph.* 3. 843. *Mill. illuſtr. Bolton, fil.* 26. 1, 2, 3. *Deſont. atlant.* 406. *Forſk. deſcr.* 185.

Filix aculeata major. *Bauh. pin.* 358. *prodr.* 151.

F. mas non ramoſa, pinnulis latis auriculatis ſpinoſis. *Ger. emac.* 1130. *Raii hiſt.* 143. *ſyn.* 121. *Pluk. phyt. t.* 179. *f.* 6. & *t.* 180. *f.* 1. *Mor. hiſt.* 3. 580. *ſ.* 14. *t.* 3. *f.* 15.

β. P. lobatum. *Huds. angl.* 459. *Sibth. oxon.* β. *Lightf. ſcot.* 677.

F. lonchitidi affinis. *Bauh. hiſt.* 3. 739. *Raii hiſt.* 144. *ſyn.* 121. *Pluk. phyt. t.* 180. *f.* 3.

Fronds bipinnate, pinnas lanceolate ciliate-toothed, ſtipe ſtrigoſe.

88. Polypodium hirtum.
Swartz prodr. 133.

Frond at bottom tripinnatifid, towards the top bipinnatifid and finally pinnatifid, ſegments ovate blunt almoſt entire, ſtipe and branches rough-haired.

89. Polypodium rhœticum. *Stone Polypody.*
Lin. ſpec. 1552. *Reich.* 4. 422. *Huds. angl.* 458. *Wither. arr. ed.* 3. 780. *Hall. helv. n.* 1708. *Pallas, it.* 2. 28. *Scop. carn. n.* 1272. *Gouan. monſp.* 528. *Villars dauph.* 3. 846. (polymorphum A.) *Bolt. fil.* 45. & 2. 6.

Filix montana ramoſa minor argute denticulata. *Raii ſyn.* 124. *Pluk. phyt. t.* 89 *f.* 4.

F. rhœtica tenuiſſima denticulata. *Bauh. hiſt.* 3. 740.

Filicula fontana major, ſ. Adiantum album, filicis folio. *Bauh. pin.* 358. *Mor. hiſt. ſ.* 14. *t.* 4. *f.* 8.

Fronds bipinnate, leaflets and pinnas remote lanceolate, ſerratures acuminate.

90. Polypodium elongatum. *Cut-leaved Polypody.*
Ait. kew. 3. 465.

Fronds bipinnate ſmooth, pinnas blunt ſharply ſerrate, the upper ones ovate, the middle oblong, the lower lanceolate pinnatifid ſharpiſh.

91. Polypodium noveboracenſe.
Lin. ſpec. 1552. *Reich.* 4. 423.

Fronds bipinnate, pinnas oblong quite entire parallel, ſtipe even.

92. Polypodium pubeſcens.
Lin. ſpec. 1552. *Reich.* 4. 423. *Brown. jam.* 101. *n.* 25.

Fronds bipinnate hairy, pinnas lanceolate-ovate ſomewhat gaſhed acute, the outmoſt confluent.

93. Polypodium marginale. *Marginal flowering Polypody.*
Lin. ſpec. 1552. *Reich.* 4. 423.

Fronds bipinnate, pinnas ſinuate repand at the baſe, fructifications marginal.

94. Polypodium bulbiferum. *Bulbiferous Polypody.*
Lin. ſpec. 1553. *Reich.* 4. 423.

Filix baccifera. *Corn. canad.* 5. *Mor. hiſt.* 3. 579. *ſ.* 14. *t.* 3. *f.* 10.

Fronds bipinnate, leaflets remote, pinnas oblong obtuſe ſerrate bulbiferous underneath.

95. Polypodium fragile. *Brittle Polypody.*
Lin. ſpec. 1553. *ſyſt.* 938. *Reich.* 4. 423. *fl. lapp. n.* 384. *ſuec. n.* 948. *Huds. angl.* 459. *Wither. arr. ed.* 3. 779. *Lightf. ſcot.* 677. *Fl. dan. t.* 401. *Pallas it.* 3. 293. *Hall. helv. n.* 1707. *Scop. carn. n.* 1273. *Allion. pedem. n.* 2411. *Bolt. fil. t.* 46. *Jungh. ic. f.* 10.

P. polymorphum D. *Villars dauph.* 3. 847.

Cyathea fragilis. *Smith fil. dorſ.* 253.

Filix ſaxatilis caule tenui fragili. *Raii. hiſt.* 152. *ſyn.* 125. *Pluk. phyt. t.* 180. *f.* 5.

F. pumilis ſaxat. altera Cluſii. *Park. theat.* 1043.

Fronds bipinnate, leaflets remote, pinnas roundiſh gaſhed.

96. Polypodium regium.
Lin. ſpec. 1553. *Reich.* 4. 425. *hort. cliff.* 475. *Scop. carn. n.* 1274. *Allion. pedem. n.* 2412.

P. polymorphum C. *Villars dauph.* 3. 847.

Filix ſaxatilis fumariæ pinnulis. *Vaill. par. t.* 20. *f.* 1. 53. *t.* 9. *f.* 1.

Fronds bipinnate, leaflets ſubopp∫ite, pinnas alternate laciniate.

97. Polypodium leptophyllum. *Fine-leaved Polypody.*
Lin. ſpec. 1553. *Reich.* 4. 425. *Deſont. atlant.* 408.

Aſplenium leptophyllum. *Swartz obſ.* 403.

Adianthum filicinum leptophyllum clatius hiſpanicum. *Barrel. ic. t.* 431.

A. minimum folio vario. *Magn. hort.* 5.

Fronds bipinnate, the barren ones very ſhort, pinnas cuneiform-lobate.

98. Polypodium Barometz. *Scythian Lamb Polypody.*
Lin. ſpec. 1553. *Reich.* 4. 425. *Lour. cochinch.* 675.

Barometz. Tartar. agnus. *Mentzel. pin. polygl.* 50 & 199. *Matth. in Dioſc. epiſt. nuncup. p.* 8.

Frutex tartareus, Agnus Scythicus. *Bauh. pin.* 512. *n.* 4.

Barometz ſ. Agnus Scythicus. *De la Croix connub. flor. ed. Clayt.* 171. *p.* 106. *ic.*

Agnus Scythicus. *Philoſ. tranſ. abr.* 2. 646. *Evel. terra. ed. Hunter.* 2. 248. *Bell, itin.* 1. 49.

Fronds bipinnate, pinnas pinnatifid lanceolate ſerrate, roots woolly.

99. Polypodium lacerum.
Lin. ſyſt. 938. *Thunb. jap.* 337.

Fronds bipinnate, pinnules ſeſſile, the outmoſt confluent falcate ſerrate, ſtipe ſcaly.

100. Polypodium ſetoſum.
Lin. ſyſt. 938. *Thunb. jap.* 337.

Fronds bipinnate, pinnules lanceolate gaſhed entire, ſtipe briſtly.

101. Polypodium glaucum.
Lin. ſyſt. 938. *Thunb. jap.* 338.

Frond bipartite bipinnate glaucous underneath, pinnules gaſhed entire.

102. Polypodium dichotomum.
Lin. ſyſt. 938. *Thunb. jap.* 338. *t.* 37. *Swartz prodr.* 133. *Forſt. prodr. n.* 450. *eſcul. n.* 49.

Acroſtichum furcatum. *Lin. ſpec.* 1529.

Filix furcata, &c. *Plum. fil. t.* 28.

Dichotomous, fronds pinnate, pinnas linear-lanceolate quite entire horizontal glaucous underneath.

6. *Prickly with ſcattered ſpines or arborescent.*

103. Polypodium arboreum. *Tree Polypody.*
Lin. ſpec. 1554. *Reich.* 4. 426. *Lour. cochinch.* 676. *Brown. jam.* 104. *n.* 41.

Cyathea arborea. *Smith fil. dorſ.* 253.

Palmifilix poſtium. *Rumph. amb. l.* 10. *c.* 46. *p.* 63. *t.* 27.

Filix arborescens pinnulis dentatis. *Plum. fil.* 1. *t.* 1. *amer.* 1. *t.* 1, 2. *Pet. fil.* 41. *t.* 1. *f.* 1, 2.

Fronds bipinnate ſerrate, trunk arboreous unarmed.

104. Polypodium ſpinoſum.
Lin. ſpec. 1554. *Reich.* 4. 426. *Sloan. jam.* 1. 95. *t.* 56. *Plum. amer.* 3. *t.* 3. *fil.* 3. *t.* 3. *Pet. fil.* 43. *t.* 4. *f.* 1. (Filix.)

Pteris aculeata. *Swartz prodr.* 129.

Fronds bipinnate ſerrate, trunk arboreous prickly.

105. Polypodium horridum.
Lin. ſpec. 1554. *Reich.* 4. 426. *Pet. fil.* 50. *t.* 5. *f.* 1. *Plum. fil.* 9. *t.* 5. *amer.* 3. *t.* 4. *Raii ſuppl.* 92. 1. (Filix.)

Cyathea horrida. *Smith fil. dorſif.* 251.
Fronds ſuperdecompound, pinnas ſemiſagittate, connected at the baſe, ſerrate at the tip, trunk prickly.

106. Polypodium pyramidale.
Lin. ſpec. 1554. *Reich.* 4. 426. *Pet. fil.* 40. *t.* 4. *f.* 2. *Plum. fil.* 42. *t.* 54. (Filix.)
Fronds ſuperdecompound, pinnas terminating lanceolate very long ſerrate, ſtipe prickly at bottom.

107. Polypodium aſperum.
Lin. ſpec. 1555. *Reich.* 4. 427. *Pet. fil.* 47. *t.* 4. *f.* 7. *Plum. fil.* 4. *t.* 3. (Filix.)
Fronds ſuperdecompound, pinnas obtuſe ſerrate at the tip, the terminating ones acuminate, trunk arboreous prickly.

108. Polypodium muricatum.
Lin. ſpec. 1555. *Reich.* 4. 427. *Pet. fil.* 53. *t.* 1. *f.* 6. *Plum. fil.* 29. *t.* 19. (Filix.)
Fronds bipinnate, pinnas ovate toothlet-ſpiny.

109. Polypodium villoſum.
Lin. ſpec. 1555. *Reich.* 4. 427. *Pet. fil.* 52. *t.* 4. *f.* 10. *Plum. amer.* 15. *t.* 23. *fil.* 21. *t.* 27. *Raii ſuppl.* 97. 2. *Sloan. jam.* 1. 100. *n.* 98. (Filix.)
Fronds bipinnate birſute, pinnas oblong obtuſe, the terminating ones acuminate.

110. Polypodium decuſſatum.
Lin. ſpec. 1555. *Reich.* 4. 427. *Pet. fil.* 61, 62. *t.* 2. *f.* 5, 6. *Plum. fil.* 19. *t.* 24. 20. *t.* 25.
Fronds bipinnate, pinnas horizontal quite entire obtuſe, the terminating ones lanceolate.

7. *Fronds ſuperdecompound.*

111. Polypodium axillare. *Slender Polypody.*
Ait. kew. 3. 466.
Frond tripinnate ſmooth, pinnas oblong, ſerrate at the tip, adnate, few-flowered.

112. Polypodium umbroſum. *Madeira Wood Polypody.*
Ait. kew. 3. 466.
Frond tripinnate ſmooth, pinnas lanceolate-linear ſerrate adnate many-flowered.

113. Polypodium Dryopteris. *Branched Polypody.*
Lin. ſpec. 1555. *ſyſt.* 939. *Reich.* 4. 427. *fl. lapp. n.* 387. *ſuec. n.* 949. *Hudſ. angl.* 460. *Wilber. arr. ed.* 3. 780. *Lightf. ſcot.* 678. *Sibth. oxon. n.* 751. *Hall. helv. n.* 1699. *Pollich pal. n.* 966. *Pallas, it.* 2. 26. *Weiſ. crypt.* 324. *Scop. carn. n.* 1276. *Villars dauph.* 3. 850. *Knipb. cent.* 12. *Bolton, fil.* 28.
Dryopteris Tragi, 538. *Ger.* 974. 2. *emac.* 1135. 3.
Filix pumila ſaxatilis prima Cluſii, *hiſt.* 2. 212. *Park. theat.* 1043. *t.* 1044. *f.* med.
F. ſax. ramoſa nigris maculis punctata. *Bauh. pin.* 358. *Mor. hiſt. f.* 14. *t.* 4. *f.* 19.
P. ramoſa minor. *Bauh. hiſt.* 3. 741. 1. *Raii hiſt.* 151. *ſyn.* 125.
Thelypteris minor pinnulis dentatis. *Amm. ad. petrop.* 10. 301. *t.* 22. *f.* 2.
Fronds ſuperdecompound, leaflets torn bipinnate.

114. Polypodium ſpelunceæ.
Lin. ſpec. 1555. *Reich.* 4. 428. *fl. zeyl. n.* 384. *Forſk. deſcr.* 185. *Leur. cochinch.* 677. *Burm. ind.* 234. *Pluk. phyt. t.* 244. *f.* 2. (Filix.)
Fronds ſuperdecompound hairy, leaflets lanceolate pinnate, pinnas oppoſite pinnatifid.

115. Polypodium capenſe. *Cape Polypody.*
Lin. ſyſt. 939. *ſuppl.* 445.
Cyathea capenſis. *Smith fil. dorſif.* 253.
Frond ſuperdecompound, leaves bipinnate, pinnas one-flowered at the baſe.

116. Polypodium æmulum. *Dwarf Madeira Polypody.*
Ait. kew. 3. 466.
Frond quadripinnatifid ſmooth, pinnas oblong-linear gaſhed, pinnules toothletted at the tip.

117. Polypodium denticulatum. *Toothletted Polypody.*
Swartz prodr. 134.
Frond quadripinnate at bottom, at top tripinnate ſmooth, pinnules wedge-ovate goſhed toothletted, fructifications ſolitary.

118. Polypodium armatum. *Armed Polypody.*
Swartz prodr. 134.
Fronds quadripinnate, pinnules lanceolate crenulate ſmooth above, birſute at bottom, fructifications crowded, branches and branchlets rough, trunk arboreous prickly.

119. Polypodium glaucum.
Swartz prodr. 134.
Fronds quadripinnate, branches and branchlets lanceolate, pinnas lanceolate pinnatifid, ſegments ovate acute glaucous underneath.

120. Polypodium diſſectum. *Cut Polypody.*
Swartz prodr. 134.
Lonchitis altiſſima globuligera minor. *Plum. fil. t.* 31.
Adianthum nigrum ramoſum max. *Sloan. jam.* 1. 96. *t.* 57. *f.* 1, 2.
Frond quadripinnatifid ſmoothiſh, pinnules ovate blunt gaſh-ſerrate, fructifications ſolitary, branches and branchlets pubeſcent.

121. Polypodium effuſum. *Spreading Polypody.*
Swartz prodr. 134. *Ait. kew.* 3. 467.
Adianthum nigrum ramoſum maximum follis ſ. pinnulis tenuibus longis acutis ſpinoſis. *Sloan. jam.* 1. 97. *t.* 57. *f.* 4.
Frond quinquepinnatifid ſmoothiſh membranaceous, pinnules acute finely ſerrate, rachis of the branches margined.

Species from Withering.

122. Polypodium ilvenſe.
Wither. arr. ed. 3. 774. *Dickſ. hort. ſicc.*
Acroſtichum ilvenſe. *Linn. & Dill. noſtr.*
Acr. alpinum. *Bolton, fil.* 42.
Fronds pinnate, leaflets oppoſite united blunt hairy underneath very entire at the baſe.

123. Polypodium arvonicum.
Wither. arr. ed. 3. 774. *Fl. dan. t.* 391. *Pluk. phyt. t.* 89. *f.* 5. (Filix.)
Acroſtichum ilvenſe. *Hudſ. angl.* 451.
Filix alpina pedicularis rubræ foliis ſubtus villoſis. *Llwyd in Raii ſyn.* 118.
Fronds pinnate, leaflets lanceolate pinnatifid hairy underneath, ſtipe hairy.

124. Polypodium dentatum.
Wither. arr. ed. 3. 776. *Dickſ. crypt. faſc.* 3. *t.* 7. *f.* 1, *hort. ſicc.*
Fronds pinnate, leaflets oppoſite pinnatifid, lobes ſparingly cut at the ſides, finely toothed at the ends, ſtipe very ſlender.

125. Polypodium ſpinuloſum.
Wither. arr. ed. 3. 778. *Fl. dan. t.* 707.
Fronds bipinnate, pinnas lanceolate, pinnules linear-ovate with ſharp-pointed teeth.

126. Polypodium trifidum.
Wither. arr. ed. 3. 779.
Cyathea incifa. *Engl. bot.* 163.
Fronds bipinnate, pinnas lanceolate blunt, pinnules of the lowermoſt pinnas moſtly trifid, ſtipe bordered.

Species from Forſter.

127. Polypodium veſtitum.
Forſt. prodr. n. 445.
Fronds ſubbipinnate, pinnas rhomb-ovate acute gaſh ſerrate, the loweſt lobed ſubpinnate, ſtipe covered with ſcariose ſcales.

128. Polypodium nudum.
Forſt. prodr. n. 446.
Fronds bipinnate, leaflets pinnate, pinnas rhombed goſh-crenate, ſtipe rugged naked.

129. Polypodium ſetoſum.
Forſt. prodr. n. 447.
Fronds bipinnate, leaflets ſubpinnate, pinnas linear gaſh-ſerrate, ſerratures ſetaceous, ſtipe villoſe.

130. Polypodium ariſtatum.
Forſt. prodr. n. 448.
Fronds bipinnate, lower leaflets pinnate, pinnas rhomb-oblong gaſhed, ſegments mucronate-ſerrate, ſtipe ſomewhat villoſe.

131. Polypodium adiantiforme.
Forſt. prodr. n. 4.9.
Fronds ſubbipinnate, leaflets ovate gaſhed, lobes ovate obtuſe crenate-ſerrate, the loweſt ſeparate, ſtipe ſcaleletted rough.

132. Polypodium medullare.
Forſt. prodr. n. 452. *eſcul.* 74. *n.* 48.

Fronds

Fronds bipinnate, leaflets pinnate very long-pointed, pinnas oblong subfalcate acute crenate, ſtipe rough, trunk arboreous biſpid.

133. Polypodium extenſum.
Forſt. prodr. n. 453.
Fronds bipinnate, leaflets pinnate acuminate ſerrate at the tip, pinnas oblong ſerrate, ſtipe rough with dots, ſtem arboreous.

134. Polypodium dealbatum.
Forſt. prodr. n. 454.
Fronds bipinnate, leaflets pinnate acuminate white underneath, pinnas oblong ſubfalcate ſerrate, ſtipe rough, trunk arboreous.

135. Polypodium affine.
Forſt. prodr. n. 455.
Fronds bipinnate, leaflets pinnate acuminate, pinnas linear-oblong crenate, ſtipe ſmooth.

136. Polypodium lunulatum.
Forſt. prodr. n. 456.
Fronds bipinnate, leaflets pinnate ſerrate at the tip ſetaceous, pinnas linear-oblong falcate ſerrulate at the tip, ſtipe rough.

137. Polypodium latifolium.
Forſt. prodr. n. 457.
Fronds ſubbipinnate, leaflets ovate acuminate pinnatifid and lobed, ſegments repand crenate, ſtipe very ſmooth ſhining.

DESCRIPTIONS, *&c.*

The inveſtigation of the ſpecies in this extenſive genus is attended with difficulties, from their general reſemblance in habit, the difference of their appearance at different ages, and the defect of their ſpecific characters. Nor have authors always been accurate in the terms uſed in deſcribing the fronds.

To remedy this in ſome degree, the plants ſhould not be gathered for examination, until they are in a ſtate of full fructification: and the attention ſhould be more particularly directed to the lower parts of the fronds, pinnas, &c. for there the characters are moſt conſtant and obſervable, the extreme parts generally running together ſo as to baffle every attempt at deſcription[x].

Add to this, that the far greater part of the ſpecies are of American growth, little known in Europe but from dried ſpecimens, not always collected with judgment enough to ſhow ſatisfactorily the true characters of the fronds and fructification. In Britain we have at moſt eighteen ſpecies; and very few more in all Europe.

We ſhould be ſcarcely juſtified, ſays Dr. Smith, in ſeparating *Polypodium vulgare* from the other ſpecies, becauſe it has no perceptible involucre. There might be more reaſon perhaps, conſidering the immenſity of the genus, for diſtinguiſhing thoſe in which the involucre is a part of a circle or reniform, from ſuch as have a perfectly umbilicated and circular involucre. But the limits are ſo difficult to define and deſcribe, that it ſeems much ſafeſt, until we get more information, to preſerve the genus as it is generally underſtood[y].

Dr. Smith, however, has removed ſeveral of the *Polypodiums* into his new genus *Cyathea*: and probably more of them will migrate into the ſame genus, when they are more accurately examined.

Linneus calls thoſe fructifications *ſolitary*, which are diſpoſed in one longitudinal row only on each ſide; *ſeriales* or in rows, which are digeſted tranſverſely, in a ſimple row, between each of the tranſverſe nerves; *ſcattered*, which are digeſted in two or more rows between the tranſverſe nerves.

1. Native of South America.

2. Stems many, very long ſlender and compreſſed, fixing themſelves to trees like Ivy, and putting out many branches, ſome very long, others ſhort, covered all over with little narrow acute ferruginous ſcales, interſperſed with abundance of ſmall filaments. Fronds alternate, four inches long, and ſeven or eight lines wide towards the lower part; they are gradually narrowed towards the tip, which is blunt, and the edges are waved; they are membranous, and the upper ſurface is ſmooth and of a bright green; the fructifications are hoary and in one row on each ſide of the midrib[a].

Native of the Weſt Indies, Jamaica, Martinico, Domingo.

3, 4, 5, 6. Natives of Jamaica.

7. Native of Hiſpaniola[b].

8. Native of the Society Iſlands[c].

9. Shoots ſlender, with ferruginous cloſe-preſſed hairs on them. Stipes ſcattered, two or three inches long, convex on one ſide, flattiſh on the other, hoary with villoſe cloſe-preſſed hairs not to be diſtinguiſhed without a magnifier. Fronds four inches long, attenuated at the baſe and acute, flat, hoary with minute ſtellate villoſe hairs underneath, but ſmooth above. Fructifications in a ſingle row along the edge, confluent, ferruginous, villoſe. It is the *P. ſerpens* of Forſter, but quite diſtinct from that of Swartz[d].—Native of New Zealand[e].

10. Root creeping, moſſy. Fronds rough with ſtiffiſh ſtrigæ. Fructifications bearded with fulvous wool[f].

Browne ſays, it creeps along the ground, and caſts its ſmall oval leaves on both ſides, in an alternate order; theſe ſeldom exceed an inch and quarter in length, and lie commonly cloſe upon the ground or rocks.

Native of South America: of Jamaica, according to Browne, but rare in that iſland.

11. Stipes ſeveral, aggregate, not more than an inch in length, flattiſh above, keeled underneath, ſmooth, even. Fronds three or four inches long, an inch wide, ſometimes widening in the middle to two inches, a little attenuated at the baſe, very blunt at the tip, thickiſh, ſcarcely veined. Fructifications large in proportion to the frond, diſpoſed longitudinally in a double row, and immerſed in the ſubſtance of the leaf. Found by Koenig in the Eaſt Indies[g].

12. Native of South America.

13. Native of South America. Swartz refers the firſt ſpecies of Browne to this: but he ſays the leaves are thin and delicate, which ill applies to the name of *craſſifolium*.

14. Root the thickneſs of a finger, five or ſix inches long, black on the outſide, having many fibres. Fronds ſix or ſeven, from two to three feet in length, acute at the end, narrow at the baſe, widening gradually, ſmooth, bright green on the upper ſurface; waved at the edge[h].

Native of South America, and the iſland of Jamaica, on the trunks of old trees, like our common Polypody.

15, 16. Natives of South America: and ſuſpected to be both very nearly allied to the preceding[i].

17. Root tomentoſe, fibroſe, not creeping. Fronds ſeveral, aggregate, erect, elliptic or attenuated at bottom and thence linear-lanceolate, acute very ſeldom biſid, entire with the margin rolled back, ſmooth, a ſpan long. Dots of the fructification in a ſingle row. —Native of Japan, flowering there in October[k].

18. Frond acuminate, erect, from a ſpan to a foot in length. Points of fructification ſcattered, ſolitary, next the midrib at the tip, two or more between the nerves in the middle, orbicular[l].—Native of Japan.

19. Stipe very ſmooth, black. The frond reſembles a flying bird and is three-lobed: lobes elongated, quite entire; the middle one twice as long as thoſe on the ſides, eared on both ſides at the baſe; the lateral ones have only one ear at the baſe. The fructifications are in ſcattered dots. Found in the iſland of Madaſcar by Sonnerat[m].

20. Frond ſimple trifid or quinquefid; the lobes lanceolate, quite entire, the middle one larger. The dots of fructification are rather large, ſcattered, remote. The upper ſurface above the dots gibbous and elevated[n].

According to Loureiro, the root is horizontal, fibroſe and creeping. Fronds half a foot long, ſimple,

[a] Plumier. [b] Swartz. [c] Forſter. [d] Vahl.
[e] Forſter. [f] Linn. ſpec. [g] Vahl. [h] Plumier.
[i] Linn. ſpec. [k] Thunb. jap. [l] Thunb. in Linn. tranſ.
[m] Linn. ſuppl. [n] Linn. mant.

[x] Withering. [y] Eſſay, 231.

petioled,

petioled, three-cleft or five-cleft; the segments quite entire, enſiform, acute or obtuſe. Fructifications ſcattered, remote: without any perceptible involucre, as in the common ſort, according to Dr. Smith.—Native of the Eaſt Indies and Cochinchina.

21. Native of Jamaica[a].

22. Root ſcaly with a brown villus on it. Stipe filiform, grooved, aſcending, ſmooth, a hand high. The lateral lobes of the frond ſmaller, the middle one twice the length of the two others, all lanceolate, acute, entire, ſmooth. Fructifications in a ſingle row on each ſide equidiſtant from the midrib. It differs from *P. trifurcatum* in having the baſe of the frond haſtate-trifid, and not three-forked at the tip.—Native of Japan; flowering from february to june[b].

23. Native of South America.

24. Native of Jamaica. This is the *P. ſcolopendroides* of Linnæus's firſt edition of his *Species Plantarum*, but not of his ſecond edition and *Syſtema Vegetabilium*. This therefore ought alſo to have been inſerted here under that name. The lower lobes in that are remote, whereas in this of Swartz they are united.

25, 26. Natives of Jamaica[c].

27, 28. Natives of South America. Suppoſed to be nearly allied[d].

29. Root creeps obliquely under the ſurface, ſending forth many fibres from little tubercles, it is about the thickneſs of the little finger or more ſlender, covered with brown moſſy ſcales, pale yellow on the outſide, greeniſh within. Stipes ſmooth, grooved on the inner ſide. Fronds from half a foot to a foot in length; the pinnas are ſlightly ſerrate at the edge, and paler underneath. Fructifications in two rows, one on each ſide of the midrib of the pinna or lobe, and parallel to it, in large yelloviſh brown round dots, pedicelled, of a roundiſh ſhape, with the ſurface granulated from the protuberance of the ſeeds, furniſhed with a ſhort elaſtic ſpring, and opening into two valves. Adanſon and Gleditſch, following Tournefort's figure, ſpeak of this fern as deſtitute of the ſpring, which ſeems common to all the ferns. Malpighi long ſince delineated it rudely, and Gleichen has ſince done it elegantly. The lower pinnas are frequently barren. In this ſpecies, the aſſemblages of capſules are not covered with an involucre, or if there be any, it ſoon falls off[e].

It is very common in woods and ſhady lanes on the old ſtumps of trees, and on rocks and walls: in fructification from june to october.

The root of Polypody was employed by the ancients as a purgative; and being thought uſeful in expelling bile and pituitous humours, was recommended in maniacal melancholical diſorders: but to act as a cathartic the root muſt be exhibited in its recent ſtate, and in a large doſe. As a demulcent or pectoral, its ſenſible qualities ſeem to promiſe more advantage: joined with liquorice its good effects have been experienced in coughs and aſthmatic affections. It is rarely uſed in this country[f].

Several varieties of Common Polypody are noticed. The ſmaller is ſcarcely deſerving of regard. Ray has one with the pinnas doubly ſerrate, found on the walls of Windſor Caſtle, and ſince by Dr. Stokes, in Worceſterſhire. Bolton has figured another (2. 5. *b.*) with the pinnas deeply ſcalloped. It was obſerved in a wood near Bingley in Yorkſhire, by Mr. Alexander. Dr. Withering has a third, which he names *acutum*; the pinnas being very long, diſtantly ſerrate, and tapering to an acute point. A ſpecimen of it was ſent him by J. W. Griffith, Eſq. from rocks in North Wales. But the moſt remarkable variety is that which has been long noticed under the name of Welſh Polypody, and is conſidered as a diſtinct ſpecies by Linnæus and others. In this the pinnas are pinnatifid, and the lobes ſerrate. It is certainly, ſays Mr. Lightfoot, no other than a variety of the common ſort, as I have had opportunities of determining, by obſerving its different gradations. In this ſtate it is analagous to a double flower among the more perfect plants, and therefore never produces fructifications. The ſame is obſervable in a variety of common Hart's tongue or *Aſplenium Scolopendrium*[g].

30. This very much reſembles the preceding, but is ſmaller and ſmooth underneath.—Native of Virginia and other parts of America.

31. Native of America[h].

32. Native of Jamaica, in low cool and ſhady places: it riſes in tufts, and ſeldom exceeds ten or twelve inches in length[i].

33, 34. Natives of the Society iſlands.

35. Native of Jamaica and Egypt.

36, 37, 38, 39, 40. Natives of South America[k].

41. Root or ſhoot creeping, wholly covered with brown tomentoſe radicles. Stipes angular, twiſted, ſmooth, erect, a ſpan high. Pinnas acuminate, ſmooth, remote, in four pairs with the end-lobe very large.—Native of Japan[l].

42. Root as thick as the thumb, and ſometimes a foot long, round, much branched, knobbed and fleſhy, green within, but without covered with very ſmall golden ſcales, with holes in the middle of the knots, occaſioned by fallen leaves. Fronds about a foot long, cut into ſeven or eight very deep ſegments, an inch wide, and three or four inches long, remote and acuminate; underneath is a double row of golden dots along the nerves of the ſegments[m].

Native of Jamaica and Martinico, on the trunks of large trees.—Cultivated here before 1742, by Robert James Lord Petre. It flowers in march[n].

43. Some of the leaves are entire, and wide, reſembling thoſe of the oak, others are laciniated, with the ſegments not reaching to the midrib, long, acute: the laciniate leaves are much longer than the others[o].

The fruiting frond is ſo like that of *P. aureum*, that it might be taken for the ſame; but the other leaves are ſhorter by half, wider, only ſinuated, like thoſe of the oak[p].—Native of the Eaſt Indies.

34. This fern riſes commonly to the height of twenty-four or thirty inches; its leaves are very large in proportion, and appear as if they had been torn at the margin[q]. The involucre is umbilicated, according to Dr. Smith.

Native of the Weſt Indies. Introduced in 1769, by Mr. George Houſtoun. It flowers here moſt part of the year[r].

45. Fronds in circles round the crown of the root, which is rough with the remains of decayed ſtipes, keeled from the pinnas being bent upwards on each ſide the leaf-ſtalks. Pinnas cloſely placed as to be imbricate, the lower edge covering the upper edge of the next beneath; ſerratures frequently but irregularly terminating in ſhort ſpine-like teeth, furrowed underneath with veins, the margin of the upper half of the baſe of each pinna parallel to the rachis or general ſtalk. Stipe furrowed above. Fructifications diſpoſed in two parallel lines on each pinna, with five or ſix dots forming two lines[s].

Dr. Withering obſerves, that the plant is about four inches long, and one inch broad, generally curved; and that the larger ſerratures of the pinnas end in ſemitranſparent thorns.

According to Lightfoot, the fronds vary from three to eight inches in length, and are ſtiff and rigid: the pinnas are ſupported on very ſhort but viſible foot-ſtalks, their upper edge ſlightly curved in a concave arch, the lower edge in a convex one, edged with ſerrated ſpinules. The pinnas are truncated at the baſe, their upper angle is elevated, but the lower one is as it were reſcinded, and deſtitute of ſpinules. The fructifications grow upon ten or twelve pairs of the uppermoſt pinnas, but the lowermoſt, which are about as many more, are barren. The ſcale or involucre, which covers each dot, is peltate. The capſules are globular, ſupported each on a foot-ſtalk, and containing each a ſingle ſeed, according to Gleditſch.

[a] Swartz. [b] Thunberg. [c] Swartz. [d] Linn. ſpec. [e] Curtis. [f] Woodville. [g] Fl. ſcot. p. 668 & 661. [h] Linn. ſpec. [i] Browne. [k] Linn. ſpec. [l] Thunberg. [m] Plumier. [n] Hort. kew. [o] Ray. [p] Linn. zeyl. [q] Browne. [r] Hort. kew. [s] Woodward in Withering.

Dr. Stokes remarks, that cultivation does not change the appearance of this fern.

Native of Britain, Norway, Switzerland, Dauphiné, Carniola, monte Baldo, and Virginia. The Virginian plant, according to Linneus, has the pinnas more elongated and leſs incurved, with the ſerratures leſs ciliate-ſpiny. In Wales, on the higheſt mountains of Caernarvonſhire and on Glydar near Llanberris: and in Scotland, at the foot of the rocks among the Highland mountains.

46. This has many long filaments and fibres for its roots, of a dark brown colour, having towards the top, where the root is round and ſolid, ferruginous hairs. Fronds from ſix inches to a foot and half in length: pinnas ſet alternately as thick as they can ſtand from the very root, each of an irregular figure like a trapezium, having very ſmall prickles at the corners, and a ſcarcely diſcernible midrib, on each ſide of which is a row of ſeeds in ſmall ferruginous ſpots.—Native of Jamaica[a].

47, 48. Natives of Jamaica[f].

49. This fern ſeldom riſes above two feet and a half or three feet in height; the ſtipe is very ſimple, and the pinnas pointed and entire; they are connected by very ſhort foot-ſtalks, and project backwards on each ſide of them[g]: they are about an inch in length, and half as broad. Fructifications in two rows of ferruginous ſpots, one on each ſide the midrib[h].

Native of Jamaica, and the continent of South America.

50. Native of Jamaica[i].

51. Native of the Eaſt Indies. Linneus informs us, that the whole plant, in his ſpecimen, is ſmooth[k]. According to Burman, the lower part of the ſtipe is very hirſute, being covered with ſpinules or ſmall ſcales, which diminiſh upwards, till it becomes quite ſmooth towards the top. Pinnas in the lower part commonly oppoſite, in the upper alternate, ſimple: the margin is ſcarce obſervably ſerrate, but each ſerrature is terminated by a very ſlender prickle or briſtle. Fructifications diſperſed in dots on the upper pinnas.

52. Stipe even, upright. Frond flat: pinnas lanceolate, acute, gradually decreaſing upwards, ſemipinnate. Lobes regular, ovate, ſubacute, crowded, ſlightly bowed on one ſide, decreaſing from the baſe of the pinnas towards the top, then confluent and becoming a narrow acute ſerrate appendix. Nerves tranſverſe, oblique, parallel. Fructifications in diſtinct approximating ſpots, in a ſingle row under the ſurface of each lobe, becoming rufous when ripe[l].

Native of the Eaſt Indies, and of Barbary near la Calle.

53. Frond a foot long or more, ſmooth: pinnas lanceolate, acute; ſerratures ovate, parallel-nerved, mucronate, frequently ſubfalcated by the revolute margins: the terminating pinna ſimple, gaſh-ſerrate. Fructifications near the margins of the inciſures. Thunberg at firſt took it for the *unitum*, which it very much reſembles, but it differs from that in having the pinnule or ſerrature at the baſe of the pinnas longer on the upper ſide. Native of Japan[m].

54. Native of South America[n].

55, 56. Natives of Jamaica[o].

57. Native of America[p].

58. Plant three feet high, upright, from an oblong thick horizontal ſimple root[q]. According to Sloane, five feet high. Stipe a foot and half long, roundiſh, dark brown or blackiſh. Pinnas about two inches long, and three quarters of an inch broad at the baſe, roundiſh and blunt at the end, not at all laciniated. On each ſide of the midrib many ferruginous round ſpots of fructifications.—Native of America and China.

59. Native of Jamaica, and other parts of the Weſt Indies.

60, 61. Natives of Jamaica[r].

62. Native of Jamaica. See *Acroſtichum ſaxatum*.

63. Native of America[s].

64. Native of Jamaica[t].

65. Theſe little plants riſe three or four together from a tufted fibrous root, and ſeldom exceed eight or ten inches in height: their foliage is divided very deep, and each lobe is again deeply crenated in the margin[u].—Native of Virginia and Jamaica.

66. This has the habit of *P. fragile*, but the leaflets are cloſer together, and not ſo deeply lobed. Fructifications in larger dots, proceeding not from a roundiſh ſcale, but from an oblong, linear, white valve or chink[x]. The plant is three or four inches high.

According to Gouan, it is eaſily known by its habit. The lower pinnas have the leaflets in threes or fours, ſubcuneiform palmate-toothed: but the middle ones conſiſt of five or ſeven longer acuter and narrower leaflets; finally the end ones are ſtill narrower and confluent.

Dr. Smith has removed this ſpecies into the genus of *Cyathea*. The frond is bipinnate and pinnatifid, its ſegments obovate and notched; the ſtalk winged; the flowers ſcattered; and the calyx torn[y].

Native of England, Germany, Switzerland, the South of France, Piedmont, Siberia, upon moiſt ſhady rocks. Above Hammerſham church, and near Wyburne in Weſtmoreland: alſo in Buckinghamſhire.

67. Stipe ſcaly eſpecially at the baſe, angular, ſtriated, cinereous, erect, a ſpan high: the ſcales are looſe and ferruginous. Pinnas alternate, petioled, wide at the baſe, very long pointed, ſomewhat waved about the edge; the upper ſurface deep green and even, the lower paler, netted, ſmooth; they are an inch or an inch and half in length; and the terminating pinna is three-parted[z].

It reſembles *P. lonchitis*, but the frond is larger, the leaflets on petioles though very ſhort ones, more pointed, and very bluntly ſerrate. The fructifications alſo are not in two rows, but ſcattered over the whole lower ſurface of the leaflets or pinnas, yet diſtinct[a].

Native of Japan, where it was found by Thunberg.

68. Stipes round, tomentoſe. Fronds pinnate below, pinnatifid above: pinnas enſiform, gradually ſhorter, gaſh-pinnatifid, eared upwards at the baſe: inciſures entire, with two fructifications on each ſide at the margin.—Native of Japan[b]. The involucre is nearly reniform[c].

69. Native of the Society Iſles.

70, 71, 72. Natives of the iſlands in the South Sea.

73, 74, 75. Natives of New Zealand[d].

76. Plant ſometimes nineteen, and ſtipe twelve inches high. The lowermoſt pair of leaflets not confluent, as all the reſt are, and placed an inch and half from the pair above it; in a vigorous plant bent almoſt back to back, in conſequence of which, when dried and gummed on paper, they form an acute angle with the ſtalk, and might lead ſuch as had not ſeen the plant growing, to ſuppoſe they were in the ſame plane with the reſt. Lobes ſemielliptical[e]. The whole plant is hairy[f]. The fructifications are diſpoſed in ſmall pale-brown dots, in two rows, near the edges of the pinnules[g].

Native of many parts of Europe and of Virginia, in the cleſts of rocks, moiſt and ſhady places and woods. With us in Devonſhire, Yorkſhire, Weſtmoreland, as Barrowfield wood near Kendal, and by the fall of Lodore near Derwent water; and in the lowlands of Scotland, as about Langholm and Pantonbridge, in Eſkdale, &c.

77. Native of America.

78. Stature of P. fragilis. When freſh-dried extremely fragrant. Stock dark purple, ſmooth and even, with pale red chaffs towards the baſe. Frond ſmooth and even. Pinnas oppoſite, ſeſſile, ovate, obtuſe, ſmooth on both ſides, pinnatifid; the margin thin, bent back, and at firſt covering the fructifications, as in *Pteris*. The fructifications, though marginal only, have the character of this genus, being

[a] Sloane. [b] Swartz. [c] Browne. [d] Sloane.
[e] Swartz. [f] Fl. zeyl. [g] Deſfontaines.
[h] Thunb. in Linn. tranſ. [i] Linn. ſpec. [k] Swartz.
[l] Linn. ſpec. [m] Loureiro. [n] Swartz. [o] Linn. ſpec.
[p] Swartz. [q] Browne. [r] Linn. ſpec.
[s] Eſſay, 255. [t] Thunberg. [u] Linn. ſuppl.
[x] Thunberg. [y] Smith, Eſſay, 255. [z] Forſter.
[a] Woodward in With. [b] Withering. [c] Lightfoot.

covered

covered with their proper ſcale or involucre, which is reniform; in other reſpects it approaches very near to Pteris [k].

Desfontaines deſcribes it as a dwarf plant, with fibroſe, brown, twiſted roots often pubeſcent; numerous, brown, filiform, erect, villoſe chaffy or naked ſtipes; frond ovate-oblong, flat; pinnules oppoſite, ſmall, linear ovate, decreaſing gradually, blunt, entire, lobed or even pinnate; the fructifications in a ſpherical granule are concealed under the folded margin of the pinnule as in *Pteris*, covered with pale membranes.

According to Loureiro, it is a foot high; the fronds radical, erect, ſubbipinnate, lanceolate, hairy; the leaflets crowded; the ſegments blunt, deeply ſerrate. Stipes chaffy, channelled, brown, ſcaly at bottom. Fructifications in rows. This can hardly be the ſame with the fern of Linneus's mantiſſa and Desfontaines.

Native of the South of France, and found by Koenig on the walls of Funſchal in the Eaſt Indies, according to Linneus in his mantiſſa. Desfontaines obſerved it in the fiſſures of rocks on mount Atlas: Loureiro, if his plant be the ſame, in Cochinchina.

The fern which Hudſon has under this name is ſuppoſed to be only a dwarf variety of *P. Thelypteris*; but Dr. Withering recommends farther attention to it from botaniſts who live near Keſwick, where Hudſon found it in moiſt cleſts of rocks.

79. Stipe even. Leaflets lanceolate, pinnatifid to the middle. Fructifications ſcattered.

Native of the Eaſt Indies, on trees [l]. Oſbeck found it in Java.

80. Stipe rough-haired. Frond pinnate, with the lateral leaflets pinnatifid at the baſe; all the pinnas ſeſſile, ſharply and very finely ſerrate; pinnules at the baſe turned downwards next the ſtipe, longer and ſemipinnatifid, by which mark this fern is very eaſily known. Thus the frond, which is ſimply pinnate at the tip, is bipinnate at the ſides, with the pinnule at the baſe elongated, pinnatifid. Found in China by Oſbeck [k].

81. This fern varies from ſix to eighteen inches or more in height; in a moiſt ſoil it is three or four feet high, and is tripinnate, on dry rocks and banks about a foot high, the firſt pair of pinnas the largeſt, the only pair triply divided. The ſtipe and nerves covered with brown filmy ſcales. Outline of the frond nearly triangular. The ſerratures end in ſhort awns. The terminating pinnas are confluent. Fructifications in numerous ſmall dots, in two rows, covered at firſt with a ſcaly involucre. Linneus ſays, that the lower pinnas are barren; but when the frond comes to maturity, the whole is generally fertile [l].

Native of the North of Europe, in moiſt woods and ſhady places in a gravelly ſoil; in chinks of moiſt rocks, on old walls, and in marſhy places at the foot of decaying oaks.

82. Not much more than a foot high, the twigs three inches long, and half an inch broad; the pinnules are a quarter of an inch long, and joined together almoſt to the end, with ferruginous dots on the back, and of a yelloviſh green colour on the upper ſide.

Native of Jamaica on the banks of Rio Cobre, below St. Jago de la Vega [m]. Introduced in 1784, by Mr. Lindſay [n].

83. Common Male Fern, as it is abſurdly called, is from a foot and half to four feet in height. The leaves grow in large circular tufts: they are firſt alternately pinnate, the pinnas increaſing in ſize from the baſe towards the middle, and afterwards gradually decreaſing upwards towards the ſummit of the leaf. Theſe pinnas are again pinnatifid, or ſubdivided almoſt to the nerve into linear obtuſe parallel lobes, crenate on the edges. The ſtipes are covered with brown filmy ſcales. Fructifications kidney-ſhaped, from three to eight on each lobe, in two rows near the baſe and diſtant from the edges; none at the end: they are covered with a permanent ſcaly ſhield or involucre, of a nearly reniform ſhape. Capſules a pale brown, ſurrounded with a ſaffron-coloured elaſtic ring [o].

Native of moſt parts of Europe, Barbary, &c. in woods, heaths, and ſtony places.

It ſeems to have the ſame qualities with the common Brake or *Pteris aquilina*. Both are burnt for their aſhes, which are ſold to the ſoap and glaſs-makers. The Biſhop of Drontheim relates, that the young curled leaves, at their firſt appearance, are boiled and eaten like Aſparagus; and that the poorer Norwegians cut off thoſe ſucculent laminæ, like the nails of the finger at the crown of the root, which are the baſes of the future ſtalks, and brew them into beer, adding a third part of malt: in times of great ſcarcity they mix it with their bread. He adds, that cut green and dried in the open air, it affords not only an excellent bitter, but infuſed in hot water, becomes no contemptible fodder to goats, ſheep, &c. which will readily eat, and ſometimes grow fat upon it [p].

The root of this Fern has lately been greatly celebrated for its effects upon the *Tænia* or Tape-worm. This vermifuge power of fern-root ſeems to have been known to Theophraſtus, Dioſcorides, Galen and Pliny; and was recommended by Hoffman and others among the moderns. Its uſe however was very generally neglected, till Madame Nouſer, a Surgeon's widow in Switzerland, employed a ſecret remedy as a ſpecific in the cure of the Tape-worm. The principal phyſicians at Paris having been deputed to make a complete trial of its efficacy, it was purchaſed by the King of France, and afterwards publiſhed by his order.

After the patient has been prepared by an emollient clyſter, and a ſupper of panada with butter and ſalt, he is directed to take in the morning, while in bed, a doſe of two or three drams of the powdered root (if an infant one dram.) The powder muſt be waſhed down with a draught of water, and two hours after a ſtrong cathartic, of calomel and ſcammony, is to be given, proportioned to the ſtrength of the patient. If this does not operate in due time, it is to be followed by a doſe of purging ſalts; and if the worm be not expelled in a few hours, the proceſs is to be repeated at proper intervals. For the ſucceſs of this, or a ſimilar mode of treatment in this country, ſee Dr. Simmons's account of the Tœnia: but whether the Fern-root or the ſtrong cathartic is the principal agent in the deſtruction of the worm, may admit of a queſtion; it appears however from ſome experiments made in Germany, that the Tœnia has in ſeveral inſtances been expelled by the repeated exhibition of the root, without the aſſiſtance of any purgative [q].

Dr. Withering informs us, that he has frequently uſed it, and ſeldom without the deſired effect. But he does not ſay whether he exhibited the fern-root, with or without cathartics.

84. Fronds a cubit high; the ſtalk generally waved and ſmooth, but ſometimes ſcaly. The firſt diviſion of the pinnas is diſtinct and diſtant, thirty or more in the ſeries; the nerves ſmooth, fine, and ſlender: the ſecond diviſion, or the pinnules upon theſe nerves, are alſo diſtinct, very fine, delicate and numerous, being upwards of thirty pairs upon each nerve, of a linear-lanceolate form and ſemipinnate, the lobes having generally two or three acute ſerratures at the extremity, often ending in a ſhort awn. Theſe lobes are tender and pellucid, commonly nine or ten pairs, varying much in figure, being ſometimes acute and falcated, which is their moſt uſual appearance, at other times truncated, and more deeply and acutely ſerrate [r].

The lower pair of leaflets on each pinna, that is the pair next to the principal or primary leaf-ſtalk, ſtands cloſe to it, and parallel with it, pointing upwards and downwards. The breadth of the leaflets varies conſiderably in different plants, but when they are narrow and the wings diſtant, the whole has a remarkably light and elegant appearance. There is one cluſter of capſules on each lobe of the leaflet, appearing at firſt in diſtinct round dots, each covered with a ſcale, which is deciduous. In a ripening

[k] Linn. mant. [l] Linn. ſpec. [m] Id. ib.
[n] Lightfoot, Withering. [o] Sloane. [p] Hort. kew.

[q] Lightfoot. [r] Idem. [s] Woodville. [t] Lightfoot.

ſtate

ſtate the whole of the leaflet ſeems covered by them; whilſt in *P. Filix mas* the upper end is always bare[s].

Dr. Smith remarks, that the involucre is creſcent-ſhaped, and ſeems inclined to refer this ſpecies to his genus *Darea*.

Native of the northern, and ſome of the more ſouthern parts of Europe, in moiſt and ſhady marſhy places, moiſt rocky woods, about rivulets and on heaths. By no means ſo common with us as the preceding.

85. Stem ſmooth with two furrows, ten or fifteen inches high. Pinnas alternate; ſegments linear-lanceolate, blunt, either entire or finely ſerrate: the two or three lower pairs of wings gradually ſhorter, and the loweſt pair often pointing downwards[t].

Some of the moſt remarkable particulars in which this ſpecies differs from *P. Thelypteris*, with which it has been confounded, as well as with *P. Filix mas*, are theſe. Firſt, *P. Thelypteris* has a ſmall creeping root. *P. Oreopteris* has a large ſcaly root, wrapped and tied together with ſmall ſtrong fibres which cannot be ſeparated without difficulty. Secondly, when *P. Thelypteris* grows old, the under ſide of the leaf is totally covered with the confluent fructifications, and the edges of the pinnules are reflexed or contracted. In *P. Oreopteris* the fructifications are always on the margins, both in a young and old ſtate, and never run into one another; the lobes are oval and plane. Thirdly, this plant is four times as large as *P. Thelypteris*, and the latter always grows in boggy places; whereas *P. Oreopteris* grows in dry woods, on moors and hills, very rarely near water[u].

Mr. Dickſon found it both in England and Scotland, moſt plentifully in the latter. Mr. Teaſdale, in woods at Caſtle Howard and Hornby. He mentions, that this fern has a very agreeable ſcent; and ſuggeſts, that perhaps *P. fragrans* of Hudſon may be a variety of it. Mr. Robſon, in moiſt woods near Darlington, never on dry hills in that neighbourhood. Miſs Read, in a wood at Old Foot's well near Bromſgrove. Dr. Sibthorp, on the north ſide of Shotover hill. According to Mr. Griffith, it is more frequent in mountainous ſituations than any other ſpecies.

86. This has the habit of *P. Filix mas*. The ſtipe is ſmooth; the barren leaves wider and more blunt. Old leaflets covered with capſules[x].

The pinnas are deeply divided, but the diviſions do not reach to the midrib: the lobes, when in ſeed are much contracted, and narrower than before the capſules are fully formed; but this is very general through the whole tribe[y].

Native of the northern parts of Europe in bogs. Near Bungay in Suffolk. In St. Faith's Newton bogs near Norwich. At the foot of Snowdon near Llanberris.

87. Leaves generally near a cubit high, of a firm and rigid texture. Stipe remarkably ſcaly, the baſe eſpecially is covered with numerous broad fuſcous membranes: the rib and nerves have a ſlight filmy down of the ſame colour. The primary pinnas are longeſt near the middle of the rib, and thence decreaſe gradually towards the top and baſe, from thirty to forty pairs in number. Theſe are again pinnated with about twenty pairs of irregularly oval, (or rhomboidal) acute, nerved, auriculated pinnules, (or having a projecting angle on the upper edge near the midrib) edged with ſharp prickly teeth. The firſt or loweſt of theſe pinnules, on the upper ſide, at the baſe of the nerve, is larger than any of the reſt. The extreme pinnules are confluent. The fructifications are as uſual in a double row, and are covered with peltate ſcales. Ten or more of the loweſt pairs are generally barren[z].

Native of moſt parts of Europe, of Barbary, Egypt, &c. in woods and ſhady places.

β. The young leaves put on a different appearance from the full grown ones. They vary from ſix inches to a foot in height, and are only ſimply pinnate; the pinnas of a lanceolate and falcate form, ſemipinnate, and edged with prickly ſerratures. The auricles at the baſe of the pinnas are conjoined at the top of the leaf, but often ſeparate at the bottom of it. In this ſtate, if there are any fructifications, they are only to be found upon ſix or eight of the uppermoſt pairs of pinnas. It grows in ſhady places[a].

88. Native of Jamaica[b].

89. Seven or eight inches high. Stipe red, ſmooth, ſlender, convex on one ſide, bare for two or three inches from the baſe. Pinnas acute. Leaflets linear-lanceolate. Mr. Bolton has well obſerved, that the pinnas are diſtinct all the way up, not becoming confluent at the top, and that the leaflets on the upper ſide the ſecondary midrib are larger than thoſe on the lower, by which it may be diſtinguiſhed from *P. fragile*. The regular ſerratures on the ſides of the lobes alſo afford a good diſtinction, the lobes in *P. fragile* being only ſerrate, towards the end, and that very irregularly[c].

Native of England, France, Germany, Switzerland, Carniola, Siberia. With us in Derbyſhire, Weſtmoreland, Wales and Scotland.

90. Native of Madeira and the Azores. Found there by Mr. Francis Maſſon. Introduced in 1779[d].

91. Habit and ſtructure of *P. Filix mas*, but the pinnas more approximating, quite entire, and having a great abundance of very ſmall floriferous dots; the ſtipe alſo is ſmooth and even. Found in Canada by Kalm[e].

92. This ſeldom riſes above eight or ten inches, and ſpreads into a branched foliage above the middle: theſe are ſimple, and furniſhed with oval alternate and jagged leaves: both the foliage and branches of the plant are adorned with a fine down.—Native of Jamaica, but not common there[f].

93. This has the habit of *P. Filix mas*, but the pinnas are oblong, not crenate, but bluntly ſerrate towards the baſe; it is plainly diſtinguiſhed by the pinnas having at each margin underneath two or three larger diſtinct dots, inſtead of many in the diſk, as in *Filix mas*[g].

According to Dr. Smith, the involucre is nearly reniform, as in that ſpecies.

Native of Canada; introduced in 1772, by Samuel Martin, M. D.[h]

94. Root of many capillary brown fibres. It is a ſlender plant, with narrow pinnules like thoſe of *P. Filix Fœmina*, but ſmaller, and of a yellowiſh green. Among the fructifications are round globules, firſt green, then black, of a ſweetiſh taſte, like the root of the common Polypody, which according to Cornutus when they are ripe fall to the ground, and ſtrike root; accordingly Linnæus calls them bulbs. Bobart rather conceives theſe globules, bulbs or tubers, to be the work of inſects, becauſe it is unuſual to find two ſorts of ſeeds on the ſame plant: but there are ſeveral plants which increaſe both by ſeeds and bulbs[i]. Native of Canada.

95. From four to ſeven inches high, or according to Lightfoot, from two to ten or twelve inches, but its moſt common ſtature about half a foot. Stipe red (at leaſt near the baſe, where it is bare for about two inches) ſmooth, ſlender, brittle. Pinnas nearly oppoſite, from ten to fifteen pairs, the lowermoſt very remote, ſhorter than the middle ones, all placed nearly at right angles with the rib. The pinnules in the ſecond diviſion ſix or eight pairs, each ſemipinnate, their lobes obtuſely oval, toothed on the edges, and about four or five pairs on each pinnule, with an odd one at the end. Leaflets more than twice as long as they are broad. Fructifications white at firſt, large for the ſize of the lobes, brown and confluent when ripe, covering the under ſide of the leaf, as in *Acroſtichum*.

Haller and Weis are of opinion, that *P. Rhæticum* of Linnæus is no other than a variety of this. In habit it approaches near to it, but it is not diſtinctly bipinnate like that plant, nor are the lobes of the leaflets regularly ſerrate at the edges, as in that[k].

[s] Withering. Lightf. [t] Withering.
[u] Dickſon in Linn. tranſ. [x] Linn. [y] Withering.
[z] Lightfoot.

[a] Lightfoot. [b] Swartz. [c] Withering. [d] Hort. kew.
[e] Linn. ſpec. [f] Browne. [g] Linn. ſpec.
[h] Hort. kew. [i] Cornutus and Moriſon.
[k] Lightf. Wither.

According to Dr. Smith, who makes our *P. fragile* a *Cyathea*, the frond is bipinnate and pinnatifid, its ſegments obovate and notched, the ſtalk winged, the flowers ſcattered, and the calyx torn.

Native of Europe on rocks. In England, Peak's hole, and on walls about Buxton in Derbyſhire, near Hyde in Gloceſterſhire, in the road from Bourn Heath to Worms aſh near Bromſgrove. In Wales and in Scotland.

Dr. Withering has three varieties, but they have been all gathered from the ſame root. Villars unites the *fragile*, *regium*, *rhæticum*, and another which he names *laciniatum*, under the name of *polymorphum*.

96. Linneus remarks, that the globules of fructifications in this are larger than in the ſpecies allied to it.

According to Villars, it is about ſix inches high, the leaves are jagged in obtuſe ſegments, wider, rounded, little cut.

Scopoli deſcribes the ſtipes as a ſpan high, ſlender, red, ſmooth. Branches on each ſide to ſixteen; the firſt branches the length of the laſt joint of the thumb, and at the ſame diſtance; to theſe adhere alternate pinnules, to ſeven on each ſide, four or five lines in length, divided into oblong ſegments, three-cleft or four-cleft, ſimple, bluntiſh, a line long. At the origin of each ſegment is placed a yellowiſh globule of ſeeds.

Haller and Weis refer Vaillant's plant to *P. fragile*.

Native of France, Carniola and Piedmont.

97. This is a ſmooth, delicate plant, almoſt diaphanous. The barren leaves are much ſhorter than the fertile ones, and pinnate. Stipe capillary. Pinnules fan-ſhaped, gaſh-lobed; ſegments blunt, unequal. Fruiting leaves erect, on an even, brown, filiform ſtipe. Leaf bipinnate; leaflets often lobed-pinnatifid; lobes ſmall, obovate, blunt, ſometimes toothed at the tip, unequal. Granules very ſmall, aggregate ſcattered over the back of the frond [1].

Linneus, who doubted whether this fern is a *Polypodium*, ſays that it is a middle ſpecies between this genus, *Acroſtichum* and *Oſmunda*, Magnol and Barrelier make it an *Adiantum*, and Swartz affirms it to be a genuine *Aſplenium*; with bipinnate and tripinnatifid fronds, remote pinnas, cuneiform gaſhed lobes, and ſolitary fructifications.

Native of Spain, Portugal, Provence, and Barbary, near Algiers, in the fiſſures of rocks.

98. Root decumbent, thick, clothed with a very ſoft cloſe wool of a deep yellow colour. Stipes from a foot and half in height, green, even, obſcurely angular. Leaflets oblong, the loweſt oppoſite, the reſt alternate, with patulous axils: pinnas acute, with acute lobes ſerrate at the tip. The fronds are ſmooth [2].

Root oblong, horizontal, above a foot long, thick, roundiſh, fleſhy, many-formed, appearing above ground, to which it is faſtened by a few thick fibres: it is entirely covered with very cloſe, ſlender ruſous hairs. Fronds ſix feet high, radical, erect, few, unarmed: leaflets ſmooth, ſeſſile, oppoſite or alternate. Loureiro could not find any fructifications, though he ſearched diligently for them in the month of may, which probably was not the proper ſeaſon: Linneus's ſpecimens had no fructifications, we muſt yet therefore remain uncertain, whether this ſpecies be a *Polypodium*, though there is little doubt of it.

Many authors have writ upon the Barometz or Scythian Lamb, and moſt of them fabulouſly. Some, among whom is Kircher, have given a figure of it much reſembling a lamb, as the fruit of ſome plant on the top of the ſtalk. It is well known however to be the root, which from the variety of its form is eaſily made by art to take the form of a lamb, which the Tartars call *Borametz*, or rather that of a ruſous dog, which the common names in China and Cochinchina imply, namely *Cau-tieh* and *Keu-tſie*. The root riſes above the ground in an oblong form, covered all over with hairs; towards one end it frequently becomes narrower and then thicker, ſo as to give ſomewhat of the ſhape of a head and neck, and it has ſometimes two pendulous hairy excreſcences reſembling ears; at the other end a ſhort ſhoot extends out into a tail; four fronds are choſen in a ſuitable poſition, and are cut off to a proper length, to repreſent the legs, and thus a vegetable lamb or dog is produced, which at a due diſtance it may be eaſy to miſtake for a real animal. It is ſcarcely neceſſary to contradict the fables that have been related of this ſingular root of a fern; ſuch as that no graſs will grow near it, as if the Scythian Lamb had fed it bare. Loureiro, who had an opportunity of examining it in a living ſtate, in its native place of growth, affirms that the root when freſh cut yields a tenacious juice, very like the blood of animals in colour and ſubſtance, but that all the other wonderful ſtories that are told about it are fabulous. He ſays that the root is aſtringent, and will ſtop bleeding; and that it is of ſervice in the gonorrhœa and fluor albus [3].

In the account of the Tartarian Lamb in our Philoſophical Tranſactions, it is ſaid that the down of the root is commonly uſed for ſpitting of blood, about ſix grains going to a doſe, and three doſes pretended to cure ſuch a hæmorrhage: and that in China this down is uſed for ſtopping of blood in freſh wounds as cobwebs are with us; that they have it in ſo great eſteem there, that few houſes are without it. This down is of a dark yelloviſh ſnuff-colour, ſhining like ſilk, ſome of it a quarter of an inch long. The account ſays, that the root ſeemed to have been ſhaped by art, the climbing parts being made to reſemble the body, and the extant foot-ſtalks the legs; that it was more than a foot long, as big as one's wriſt, having ſeveral protuberances, and towards the end ſome ſtalks three or four inches long, exactly like foot-ſtalks of fern both within and without.

Bell, in his journey to Iſpahan, informs us that he walked many a weary mile accompanied by Tartars, in ſearch of this wonderful plant, but from his imperfect deſcription it does not appear that he ſaw the true plant.

Darwin thus characteriſes the Tartarian Lamb, adopting with poetic licence the fable related concerning it:

" Cradled in ſnow and fann'd by arctic air
" Shines, gentle Barometz! thy golden hair;
" Rooted in earth each cloven hoof deſcends,
" And round and round her flexile neck ſhe bends;
" Crops the grey coral moſs, and hoary thyme,
" Or laps with roſy tongue the melting rime;
" Eyes with mute tenderneſs her diſtant dam,
" Or ſeems to bleat, a *Vegetable Lamb* [4]."

Dr. de la Croix has alſo celebrated this Fern in the following Latin verſes.

" Surgit humo Boramez. Præcelſo in ſtipite fructus
" Stat quadrupes. Olli vellus. Duo cornua fronte
" Lanea, nec deſunt oculi, rudis accola credit
" Eſſe animal, dormire die, vigilare per umbram,
" Et circum exeſis paſci radicitus herbis:
" Carnibus ambroſiæ ſapor eſt, ſuccique rubentes,
" Poſthabeat quibus alma ſuum Burgundia nectar;
" Atque loco ſi ferre pedem Natura dediſſet,
" Balatu ſi poſſet opem implorare, voracis
" Ora lupi contra, credas in ſtirpe ſedere
" Agnum equitum, gregibuſque agnorum albeſcere colles."

The falſe figure in the Philoſophical Tranſactions will ſerve to explain in ſome meaſure the above lines.

Sir Richard Clayton has given this figure, together with thoſe of Dr. Hunter, and Dr. De La Croix, in the frontiſpiece to his elegant edition of the latter's *Connubia Florum*.

This ſingular fern is a native of Tartary, China and Cochinchina.

99. Root creeping, ſcaly; ſcales cloſe, membranaceous, brown, ſmooth. Stipe grooved, with remote torn ſcales, erect, two feet high. Fronds ſmooth: pinnas alternate: lower pinnules nearly diſtinct, upper united, loweſt ſubauriculate, very finely ſerrate, not ciliate, gradually ſhorter. Fructifications at the tip of the frond.—Native of Japan, flowering from may to november.

100. Stipe round, ruſeſcent, wholly covered with dark long looſe hairs. Loweſt pinnas bipinnate, upper

[1] Deſfontaines. [2] Linn. ſpec.

[3] Fl. cochinch. 675. 676.

[4] Loves of the plants, 2. p. 24. l. 249—256.

pinnate. Fructifications in the middle of the leaf in a ſingle row.—Native of Japan.

101. Stipe half round, ſmooth, a ſpan high and more, bifid at the top with the rudiment of a frond at the diviſion. Frond ſmooth: pinnas enſiform, pinnatifid; ſegments lanceolate, blunt, entire with a reflex margin. Fructifications in a ſingle row, at the margins of the ſegments, minute.—Native of Japan, flowering in june.

102. Shoot creeping, flexuoſe. Stipe round, ſmooth, flexuoſe-erect, commonly dichotomous, ſometimes but rarely trichotomous. Frond dichotomous-ſubpedate, bipinnate, ſmooth above, glaucous beneath. Pinnules united, acute. Fructifications ſmall in a ſingle row [r].

Native of Jamaica, Japan, and in the dry mountains of New Zealand and the Society Iſles.

The aſhes of this with powdered alum are exhibited in Aphthas and excoriations of the mouth in Japan [s].

The New Zealanders ſuck out the ſweetiſh farinaceous part of the root, having firſt roaſted it, and beat it well with a ſtone or club [t].

103. This fern riſes by a conſiderable hard ſimple and woody trunk to the height of twenty or twenty-five feet; it is, like the other ferns and palms, furniſhed only with ribs, which fall off gradually as it riſes, while the new ſhoots ſpring up from the top: it reſembles the Palm tribe alſo both in the form and ſtructure of its trunk, being very hard immediately under the bark, but looſe ſoft and fibrous in the middle. It holds for many years, bears all the inclemency of the weather with eaſe, and is frequently uſed for poſts, where the ſmaller palms are not at hand [u].

Loureiro ſays that the trunk is ſometimes armed with ſpinules: that the fronds are eight feet long, on roundiſh unarmed ſtipes: that the leaflets are lanceolate, ſerrate, ſmooth, bright green; and the fructifications in orbicular, rufous, ſcattered dots. In Cochinchina the trunk is uſed for rafters in building, and is accounted excellent for that purpoſe.

Dr. Smith removes it into his genus *Cyathea*, and deſcribes it as having an arboreſcent ſcaly trunk, a bipinnate frond, ſeſſile ſerrate pinnules with many flowers at their baſe, and an entire calyx.

Native of South America, Jamaica, Amboina, Cochinchina on the ſouth next Cambodia.

104. Trunk twenty feet high, as big as the human leg, undivided, covered with the ends of the fallen petioles, which are dark brown, as big as the finger, two or three inches long, thick ſet with ſhort and ſharp prickles. At the top of the trunk five or ſix fronds ſtand round, about ſix feet long, having a purple ſtipe, very thick ſet with ſhort ſharp prickles on its back. At about a foot from the trunk, each frond divides into oppoſite branches, placed near the bottom, at about ſix inches diſtance from each other. The branches are a foot long in the middle. The twigs come out alternately, being an inch and half long, and about two thirds of an inch broad, in the middle; they are made up of pinnules one third of an inch long, and half as broad, blunt, indented, dark green above, pale green below, very thin, and ſo cloſe ſet that there is no ſpace between them [x].

Native of South America and the Iſlands. According to Swartz it is a *Pteris*.

105. The lateral nerves of the fronds are branched again. The ſeminal dots are ſcattered near the margin [y].

Cyathea horrida of Smith; with the trunk thorny, the fronds bipinnate and pinnatifid, the ſegments acuminate, ſerrate at the tip, flowering near the margin, and furniſhed with interramifying veins at their baſe.—Native of the Weſt Indies.

106, 107, 108. Natives of America.

109. Stalks many, about two feet high, each as big as a finger, very hairy, and at about a foot from the ground divided into branches, the lowermoſt whereof are about nine inches long, almoſt oppoſite. Twigs more than an inch long, alternate, made up of broad, ſhort, moſtly entire, but ſometimes notched pinnules, roundiſh at the end, often united for ſome ſpace by their edges, pale green; covered, as well as the ſtalks branches and midribs with a whitiſh ſtrong ſhort hair [z].

Native of the Weſt Indies—Jamaica, Martinico, Dominica.

110. Native of the Eaſt Indies.

111, 112. Natives of the iſland of Madeira. Found there by Mr. Francis Maſſon. Introduced in 1779 [a].

113. Plant from five to eight inches or a foot high. Stipe ſlender, ſmooth, brittle, naked above half way up. The outline of the frond approaches near to an equilateral triangle. Pinnas about twelve or fifteen pairs, oppoſite; their ſubdiviſions nearly the ſame, ſmooth, of a pale green colour. Pinnules ſubdivided almoſt to the nerve; lobes linear, obtuſe; the lower ones crenate, the upper ones often entire, and running together. The pinnas do not grow exactly perpendicular, but decline towards the horizon. Fructifications in two rows of round dots upon each lobe; theſe, when ripe, cover the whole lower ſide of the leaf [b].

According to Scopoli, Tragus was the diſcoverer, Cluſius the illuſtrator of this ſpecies.

Native of many parts of Europe, on rocks and in dry ſtony places. With us chiefly in the northern counties, Scotland and Wales. Cornbury quarry in Oxfordſhire; in woods N. E. of the road up Froceſter hill, Gloceſterſhire; in Yorkſhire about North Bierly; among the rocks at the fall of Lodore on the ſide of Derwent-water, Cumberland. Barrowfield-wood near Kendal, and other rocky woods. In Scotland, at Langholm and Broomholm in Eſkdale, about Dunkeld, in Stormount, &c. In Wales, near Tintern-abbey in Monmouthſhire.

Bolton figures a variety with larger leaves: the largeſt lobes divided half way down to the midrib: the ſtalk taller, firmer, white, opaque. He found it in White-ſcars, near Ingleton, Yorkſhire, and in the Peak of Derbyſhire.

114. A foot and half high and unarmed. Fronds radical, ſuberect: pinnas deeply toothed [c].—Native of both Indies, Cochinchina and Egypt.

115. Leaflets lanceolate, alternately pinnate. Pinnas oblong, ſerrate, ſharpiſh, approximating at the baſe. Fructifications ſolitary at the baſe of the pinna [d].

Dr. Smith has removed it to his genus *Cyathea*, and deſcribes it as having a tripinnate frond; the leaflets ſeſſile, acute, ſerrate, bearing a ſolitary flower at their baſe; and the calyx torn. Gathered at the Cape of Good Hope by Dr. Sparrman.

116. Found in the iſland of Madeira by Maſſon. Introduced in 1779 [e].

117, 118, 119. Natives of Jamaica [f].

120. This riſes four or five feet high, having a ſmooth, reddiſh brown, ſhining ſtalk, the ſize of a finger, divided into alternate branches. Pinnules thick, blunt, variouſly ſinuated or deeply cut, eſpecially on their upper ſides, and indented about their round ends, of a dark green colour and ſhining on the upper ſide. Fructifications in ferruginous ſpots, eſpecially near the greater ſinuations by the edges.—Native of Jamaica [g].

121. This riſes three feet high, having a reddiſh ſmooth ſtalk, divided at one foot and a half from the ground into ſeveral branches, having their twigs, and they their pinnules, after the manner of *Adiantum nigrum*, only they are longer, thinner and ſharper at the point, having there a very little prickle, as well as others much ſmaller along their margin, where are no inciſures or very ſmall ones. It is ſometimes of a pale green colour, with almoſt pellucid thin leaves.—Native of Jamaica [h].

Introduced in 1769, by Mr. George Houſtoun [i].

122. Leaflets ſix or ſeven on each ſide the ſtem: the lower ones oppoſite, the upper alternate, thick and opaque, generally cloven into five or ſeven ſegments, rounded at the ends. See *Acroſtichum ilvenſe*.

[r] Thunberg. [s] Idem. [t] Forſter, eſcul. [u] Browne. [x] Sloane. [y] Linn. ſpec. [z] Sloane. [a] Hort. kew. [b] Lightfoot. [c] Loureiro. [d] Linn. ſuppl. [e] Hort. kew. [f] Swartz. [g] Sloane. [h] Hort. kew.

On Ben Lawers in Scotland, and Clogwyn y Garnedd in Wales.

123. From three to five inches high. Leaflets from seven to fifteen pairs, cloven on each side into five or six segments, spear-shaped, hairy underneath. It is a very rare plant even on Snowdon, where it was found by Mr. Lhwyd. Dr. Richardson also found it almost at the top of Clogwyn y Garnedd.

This seems sufficiently distinct from *P. ilvense* found on the Scottish alps by Mr. Dickson. Mr. Griffith thinks that Bolton's fern figured in t. 9. is only a very small and stiff plant of *P. fragile*, gathered in a high exposed situation, and that it is not the plant found by Lhwyd[g].

124. This nearly resembles *P. fragile* in size and habit. Root small, fibrous, bundled, a little woolly. Stipes several, slender, pale brown, shining, somewhat scaly at the base. Fronds bipinnate, lanceolate: leaflets remote, lanceolate, mostly alternate: pinnas ovate, obtuse, gashed, unequally toothed; teeth rather distant, obtuse, pale brown. Fructifications towards the edge, near the incisions[h].

Such is the account given by Mr. Dickson of this new species, which he first discovered in clefts of rocks in the highlands of Scotland; but though his description and specific character mention its being bipinnate, neither his own figure, nor the specimens in his fasciculi of dried plants, authorise us to say that they are so. They are only simply pinnate, and the pinnas divided into lobes, nor have they any proper midrib. *P. dentatum* of Forsk. in Gmel. syst. is a different plant[i].

125. This has been taken for *P. cristatum*, but it is very different from that: of a more delicate and transparent texture; the leaf-stalk but little if at all scaly, the opposite leaflets on the wings not unequal in size, and the midrib serpentine. It agrees with it in the disposition of the fructifications, and in the serratures ending in short awns.

Found on bogs on Birmingham heath; and Holloways in Devonshire[k].

126. Three or four inches high. Stem brown green, slender, bare for an inch or more at the base, edged with a narrow border on each side. Pinnas nearly triangular. Leaflets three-cleft, the middle segment sometimes notched[l].

The chief difference between this and *P. fragile*, which it much resembles in habit, consists in the divisions of the leaves being obtuse in this, and perfectly destitute of the bristly point observable in the other. There is also some difference in their habit and appearance, and the fructification of *P. fragile* is blacker. Dr. Smith has been inclined to believe it the *P. regium* of Linneus, but the original specimen of that in the Clifortian herbarium has a triangular, not lanceolate frond. Neither is ours *P. alpinum* of Jacquin, the divisions of which are linear, or nearly so.

Dr. Smith has removed this and *fragile*, into his genus *Cyathea*, in which the young captules are enveloped in a globular membrane, which goes underneath them, and bursts either at the top in an even and lacerated manner, or at the side, as in this species and some others[m].

In some specimens the fronds are broader and more dilated than in the figure given in English Botany.

Found by J. Wynne Griffith, Esq; of Garn near Denbigh, on Cwm Idwel; and by Mr. T. F. Forster, jun. on a wall near Walthamstow in Essex.

127 to 137. Natives of the islands in the great South Sea: 132 and 134, in New Zealand. N. 132. *P. medullare* is thus described by Forster. Trunk a fathom in height, spongy, full of pith, on the outside hispid and black from the fall of the stipes, crowned at the top with very large fronds spreading out almost horizontally. Frond a fathom and more in length; the stipe rough all over with small callous red tubercles or dots. Leaflets crowded, pinnate, the lower ones two inches long, narrow, very long pointed. All the pinnules sessile, oblong-crescent-shaped, acute; the lowest separate, crenate; the upper ones gradually shorter, connected, so that the apex of the leaf is plainly serrate, with deep sharp teeth. Fructifications globular, biggish, on the disk in a single row.

It is frequent in the woods of New Zealand, where it is called *Mamaga*. The inhabitants eat the pith of the root and lower part of the trunk roasted. It has a taste like that of the Turnep, but better, and approaches to the Sago. The pith abounds in a glutinous red juice, such as was noticed in *P. Barometz*[n].

Allioni and Villars have several species not noticed above:

1. Polypodium Pontederæ.
   Allion. pedem. n. 2405. *Hall. helv. n.* 1702.
   Filicula alpina fol. rotundioribus crenatis. *Ponted. compend.* 19. *Segnier suppl.* 54. *t.* 1. *f.* 2.
   Pinnas few, semipinnate very short acutely serrate.
2. Polypodium molle.
   Allion. pedem. n. 2406. *Villars dauph.* 3. 845. *Hall. helv. n.* 1703.
   Filix mollis f. glabra, vulgari non ramosæ accedens. *Bauh. hist.* 3. 738.
   Fronds subbipinnate, pinnas lanceolate bluntish, crenulate at the tip.
3. Polypodium alpinum.
   Allion. pedem. n. 2409. *Hall. helv. n.* 1709.
   Filicula alpina crispa. *Bauh. pin.* 358. *Segnier suppl.* 55. *t.* 1. *f.* 3.
   Fronds bipinnate, very loosely divided, lobes blunt toothed.
4. Polypodium montanum.
   Allion. pedem. n. 2410. *Hall. helv. n.* 1710.
   Cyathea montana. *Smith fil. dorsif.* 254.
   Filix rhœtica tenuissime divisa. *Bauh. hist.* 3. 740.
   Frond trifid bipinnate pinnatifid, segments slightly crescent-shaped toothed at the tip, rachis winged, fructifications scattered.
5. Polypodium pterioides.
   Villars dauph. 3. 841.
   Filix pyrenaica neque ramosa neque dentata. *Tournef. herb.*
   Fronds bipinnate, wings bowed upwards, leaflets blunt dotted underneath at the edge, with nine simple veins running along them above.
6. Polypodium carthusianum.
   Villars dauph. 3. 842.
   Fronds alternately bipinnate remote, leaflets acutely serrate, teeth often awned and bifid.
7. Polypodium aristatum.
   Villars dauph. 3. 844. *Hall. helv. n.* 1705.
   Fronds subtripinnate, pinnules serrate on both sides.
8. Polypodium myrrhidifolium.
   Villars dauph. 3. 851. *t.* 53.
   Fronds triangularly quadripinnate, leaflets gash-serrate confluent at the tip.

DESCRIPTIONS, &c.

1. Native of Switzerland and Italy.

2. Height from eight inches to a foot. Stem weak and thin. Leaves almost transparent, bipinnate with two or three divisions at the extremity of each leaflet. The dots of fructification are placed before the last division of the leaflets, and are round, not oblong, as in *P. Filix formina*, which this resembles. The plant is also thinner, less compounded, and only half the size[o].

3. Native of Switzerland and Italy. Jacquin has a fern with the same name[p].

4. Native of the European Alps. The calyx of this is torn. It belongs to the genus *Cyathea*, with several of the other species[q].

5. Height about two feet: it has only one sort of bipinnate leaves, with raised pinnas, the blunt leaflets of which have the fructifications very near the margin; and marked with nine pairs of simple nerves above.—Native of Dauphiné and Savoy but not common.

6. This is perhaps only a variety of *P. fragrans*, but it is less cut, higher, glaucous underneath, the leaves are alternate and less remote.—Native of Dauphiné.

[g] Withering. [h] Dickson. [i] Withering. [k] Idem. [l] Idem. [m] Engl. bot.

[n] Forst. fscul. [o] Villars. [p] Collect. 2. 172. [q] Smith, Essays.

7. This fern reſembles *P. Lanchitis* in the darkneſs of its green colour, and in the little ſpines at the end of the leaflets and ſerratures; but the leaf of this is triangular, wider, black at its baſe, and loaded with a great quantity of ſcales.—Native of Dauphiné and Switzerland.

8. This ſpecies has the moſt decompounded leaves of any; in the triangular outline and diviſions it reſembles much *P. Inſitanicum* of Linneus, but the extremities of the leaflets are much finer, and the plant thinner and lower. The fine cut of the leaves, like *Myrrhis odorata*, makes it eaſily known. Dauphiné, near the Grande Chartreuſe *.

Villars gives Allioni's *P. montanum* as a ſynonym, and n. 3. p. 124. of Ray's ſynopſis, which Hudſon refers to *P. rhæticum*.]

PROPAGATION AND CULTURE.

The common Polypody, and all the other ſorts which are hardy enough to bear the open air, being perennial plants may be propagated by parting their roots in the ſpring before they ſhoot, and ſhould be planted in a poor moiſt ſoil under the ſhade of a wall, for if they are expoſed to the ſun, they will not thrive. Many of them grow out of the joints of walls and old buildings, and the fiſſures of rocks, but are commonly found expoſed to the north. [They are well adapted therefore to ornament ruins and rock-work.

POLYPODIUM. See *Acroſtichum, Meniſcium, Onoclea, Ophioglooſſum, Trichomanes.*

POLYPODY. See *Polypodium.*

POLYPORUS. See *Boletus.*

POLYPREMUM. (*From πολυς much, and πρεμνον, a trunk.*)

Lin. gen. n. 137. *Reich. n.* 143. *Schreb. n.* 178. *Gærtn. t.* 62. *Juſſ.* 122.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Caryophyllei? Scrophulariæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved, permanent: *leaflets* lanceolate, keeled, coloured within.

COR. one-petalled, wheel-ſhaped: *limb* four-cleft, lobes obcordate, the length of the calyx.

STAM. *Filaments* four, very ſhort, in the throat of the corolla. *Anthers* roundiſh.

PIST. *Germ* obcordate. *Style* ſhort, permanent. *Stigma* truncate.

PER. *Capſule* ovate, compreſſed at the tip, emarginate, two-celled, two-valved; the partition contrary.

SEEDS numerous; faſtened to an oblong, aſcending receptacle, connected with the partition below.

ESSENTIAL CHARACTER.

Cal. four-leaved. *Cor.* four-cleft, wheel-ſhaped: with obcordate lobes. *Capſ.* compreſſed, emarginate, two-celled.

SPECIES.

1. Polypremum procumbens.

Lin. ſpec. 161. *Reich.* 1. 315. *Willd.* 623. *Act. upſ.* 1741. *p.* 78. *Lamarck encycl. t.* 71. *Gærtn. fruct.* 1. 294.

Linum carolinianum. *Pet. gaz. 9. t. 5. f. 6.*

DESCRIPTION, *&c.*

1. Root annual. Stem procumbent. Leaves linear-ſubulate in whorls. Peduncles one-flowered, ſolitary, in the whorls of leaves.—Native of Carolina and Virginia*.

POLYSPORON. See *Chenopodium.*

POLYTRICHUM. (*From πολυς, much, and θριξ, τριχος, hair.*)

Lin. gen. Schreb. n. 1660. *Hedw. fund.* 2. 90. *Curt. lond.* 2. 68. *n.* 102. *Menzies in Linn. tranſ.* 4. *t.* 6, 7. *Schmid. ic. t.* 51. Catharinea. *Ehrh. beytr.* 1. 178.

Claſſ. 24. 3. Cryptogamia Muſci.

Nat. order of *Muſci* or *Moſſes.*

GENERIC CHARACTER.

Capſ. oblong, ſometimes quadrangular, placed on a quadrangular apophyſis. *Periſtome* double: *outer* with thirty-two ſhort teeth, united at the baſe, incurved; *inner* a flat membrane, tranſverſe, glued to the apexes of the teeth of the inner one. *Calyptre* hairy.—*Male* flowers diſcoid, or a circular bud, on a different plant, terminating.

ESSENTIAL CHARACTER.

Capſ. lidded, on a very ſmall apophyſis or receptacle. *Capſ.* villoſe.

SPECIES.

There are only five ſpecies of this Moſs in the fourteenth edition of Syſtema Vegetabilium. Dr. Withering in his third edition of the Arrangement of Britiſh Plants has ſix ſpecies, beſides ſeveral varieties. Dillenius, Hedwig and others, have figured them. Polytrichum commune. Great Golden Maidenhair or Goldilocks, is figured by Micheli, Gerarde, Parkinſon, &c. &c. It is found abundantly in woods and on moors in boggy places. When the Laplanders ſleep all night in the woods, they make themſelves beds of this Moſs; the bears collect it for the ſame purpoſe; ſquirrels and birds alſo uſe it in making their neſts*. Other ſpecies are figured by Vaillant, and in *Flora danica*. Mr. Curtis has detailed the characters very ſatisfactorily in his plate of *P. ſubrotundum*; and Hedwig, *ſtirp.* 1. 13, 14, 15.

Mr. Archibald Menzies has new-modelled this genus, diſtinguiſhed and deſcribed the ſpecies, and added ſeveral new ones. His eſſential character is this:

Capſ. operculate or lidded, roundiſh oblong or quadrangular.

Periſt. toothed: teeth incurved (thirty-two to ſixty-four) glued together at the tips by a tranſverſe membrane.

Calypt. or Veil double: inner ſmooth membranaceous ſmall; outer floccoſe with the tips united.

Male diſk-form, on a diſtinct plant.

Obſ. Linneus's character from the *apophyſis* is excluded, being found only in *P. commune*, and a few others.

Mr. Menzies has given nineteen ſpecies, ſeveral of them are inhabitants of North America, and ten are natives of Britain. The ingenious author has characterized and deſcribed them in the moſt ſatisfactory manner; and has figured eleven with the utmoſt accuracy. For the others he refers to the figures of Dillenius, Vaillant, Hedwig, &c.

The following extract from this very valuable monograph, is as much as is conſiſtent with the plant of this work, in the claſs Cryptogamia.

SPECIES.

* *Stemleſs.*

1. Polytrichum tenue. *Dill. muſc. t.* 55. *f.* 12.
Mnium polytrichoides γ. *Lin. ſpec.* 1577.
Nova Scotia.

2. P. ſubrotundum. *Dill. t.* 55. *f.* 6. *Vaill. par. t.* 26. *f.* 15. *Hudſ. angl.* 2. 400.
P. pumilum. *Swartz, act. ſtockh.* 1795. *p.* 275.
England, &c.

3. P. nanum. *Dill. t.* 55. *f.* 6. G—L? *Hedw. crypt. t.* 35. *t.* 13.
England, &c.

** *With a ſimple ſtem.*

4. P. aloides. *Dill. t.* 55. *f.* 7. *Vaill. t.* 29. *f.* 11. *Hedw.* 1. 37. *t.* 14.
P. nanum. *Lightf. ſcot.* 701. *Hudſ.* 2. 470.
Mnium polytrichoides β. *Linn. ſpec.* 1577.
England, &c.

5. P. convolutum. *Linn. fil. muſc. t.* 1. *f.* 3. *Swartz prodr.* 139.
Weſt Indies.

6. P. magellanicum. *Linn. ſuppl.* 449. *Menzies t.* 6. *f.* 1.
Straits of Magellan and New Zealand.

7. P. attenuatum. *Menzies, t.* 6. *f.* 2.
On the weſt coaſt of North America.

8. P. gracile. *Menzies, t.* 6. *f.* 3.
Found on the Highlands of Scotland by Mr. Dickſon, and in Sweden by Swartz.

9. P. commune. *Dill. t.* 54. *f.* 1. &c.
Europe.

10. P. piliferum. *Schreb. ſpicil.* 74. *n.* 1031. *Dill. t.* 54. *f.* 3.
P. commune γ. *Linn. ſpec.* 1573.
England, &c.

* Villars. * Wildenow. * Withering.

11. P. juniperinum. *Menzies, t. 6. f. 4. Willd. berol.* 305.
On the weſt coaſt of North America.
*** *With a branched ſtem.*
12. P. ſtrictum. *Menzies, t. 7. f. 1. Vaill. t. 23. f. 6.*
Britain and other parts of Europe, North-weſt coaſt of America.
43. P. contortum. *Menzies, t. 7. f. 2.*
North-weſt coaſt of North America.
14. P. rubellum. *Menzies, t. 7. f. 3.*
Britain.
15. P. dentatum. *Menzies, t. 7. f. 4.*
North-weſt coaſt of North America.
16. P. urnigerum. *Linn. ſpec.* 1573. *Dill. t. 55. f. 5.*
England, &c.
17. P. ſeptentrionale. *Menzies, t. 7. f. 5. Swartz act. ſtockh.* 1795. *t.* 270.
P. ramoſum. *Gunn. norv.* 814. *Fl. dan. t.* 297.
Norway.
18. P. alpinum. *Linn. ſpec.* 1573. *Dill. t. 55. f. 4.*
Northern parts of Europe.
19. P. ſylvaticum. *Menzies, t. 7. f. 6.*
In fir woods on the north-weſt coaſt of North America.

POLYTRICHUM. See *Aſplenium, Bryum, Mnium.*

POMA. See *Pyrus.*

POMAX. See *Opercularia.*

POMEGRANATE. See *Punica.*

POMETIA. (*So named by Forſter, in memory of Pomet, a Frenchman, author of Hiſtoire des Drogues.*)
Lin. gen. Schreb. n. 1436. *Forſt. gen. t.* 55.
Aporetica. *Forſt. gen. t.* 66. *Juſſ.* 247.
Claſſ. 21. 6. Monoecia Hexandria.

GENERIC CHARACTER.

* *Male* Flowers.

CAL. *Perianth* one-leafed, wheel-ſhaped, ſix-cleft, very ſhort: *ſegments* rounded.

COR. *Petals* ſix, orbicular, erect, a little longer than the calyx. *Nectary*, a raiſed rim, with ſix little ſwellings.

STAM. *Filaments* ſix, awl-ſhaped, erect, three times as long as the corolla, placed on the margin of the nectary. *Anthers* parabolical, biſid at the baſe.

PIST. *Rudiment* in the centre of the flowers.

* *Female* Flowers, in the ſame raceme with the Males.

CAL. and COR. as in the Males.

PIST. *Germ* obcordate, twin, two-celled. *Style* filiform, four times as long as the corolla. *Stigma* ſimple, compreſſed.

PER. *Berry* globular, fleſhy, ſuperior.

SEED ſingle, ovate, in the centre of the berry.

OBS. *Sometimes rudiments of ſtamens are obſerved in the female flowers. One cell of the germ is entirely obliterated in the ripe fruit.*

ESSENTIAL CHARACTER.

Cal. one-leafed, ſix-cleft. *Pet.* ſix.

MALE. Stamens ſix.

FEM. *Berry* globular, with one ſeed in the centre.

SPECIES.

1. Pometia pinnata.
Forſt. prodr. n. 392.
Palorum arbor alba latifolia. *Rumph. amb. 3. t. 65.*
Leaves pinnate, raceme ſuperdecompound terminating.
2. Pometia ternata.
Forſt. prodr. n. 393.
Leaves ternate, racemes almoſt ſimple axillary.

DESCRIPTIONS, *&c.*

1. Native of the iſlands of Tanna and Namoka, in the South Seas[1]. Juſſieu doubts whether it may not be of the ſame genus with Commerſon's Euphoria, which comprehends the celebrated fruits of the Chineſe, *Lit-chi* and *Lon-gan*[2].

2. The parts of fructification are not ſix, as in the preceding; but two, and multiples of that number. The calyx is four-leaved; the corolla four-petalled, with a four-cleft nectary; eight ſtamens; germs and ſtyles two, the former one-celled, valveleſs, incloſing one ſeed.—Native of New Caledonia[3].

Forſter named this *Aporetica*, ſignifying doubtful or ambiguous, the characters being ſo ſmall, that it is difficult to determine the genus. The flowers are male and hermaphrodite.

POMIFERA. See *Anacardium* and *Genipa.*

POMMEREULLIA. (*So named by the younger Linnæus, in memory of the very illuſtrious lady Du Gage de Pommereull who laboured at the inveſtigation of Graſſes with indefatigable induſtry.*)
Lin. gen. Schreb. n. 96. *Linn. fil. nov. gen. gram.* 31. *ſuppl.* 12.
Claſſ. 3. 1. Triandria Monogynia.
Nat. order of *Gramina, Gramineæ* or *Graſſes.*

GENERIC CHARACTER.

CAL. *Glume* turbinate, three or four-flowered, two-valved. *Valves* equal, wedge-ſhaped, divaricate at the baſe: *claw* incurved, linear, gradually widening, four-cleft: *ſegments* dilated in a ring and involving the florets, unequal; the ſide ones larger, lanceolate, acute; the inner or middle ones ſhorter by half, awl-ſhaped, awned. *Awn* dorſal, inſerted betwen the ſmaller ſegments, ſolitary, ſtraight, upright, longer than the valves.

COR. *Glume* two-valved: *valves* unequal: the *outer* very like the calycine glumes, awned; the *inner* very ſhort, quite ſimple or undivided, ovate, flat, awnleſs.

STAM. *Filaments* three, very ſhort. *Anthers* linear, the length of the valves.

PIST. *Germ* linear. *Style* ſimple. *Stigmas* two, villoſe at the ſide.

PER. none. Corolla unchanged, contains the ſeed till it is ripe, then gapes and lets it drop.

SEED ſingle, oblong, flat on the inner ſide, on the outer convex, pellucid, very ſmooth.

OBS. *The flower reſembles the figure of the Dianthus, with a narrow tube, and a ſpreading ſubradiate border; for the florets in the centre of the flower converge to a point.*

ESSENTIAL CHARACTER.

Cal. turbinate, two-valved, three or four-flowered: *valves* four-cleft awned at the back. *Cor.* two-valved, awned.

SPECIES.

1. Pommereullia Cornucopiæ.
Lin. ſpec. ed. Willd. 314. *ſuppl.* 105.

DESCRIPTION, *&c.*

1. This is a ſmall and very ſingular Graſs. Root creeping, fibrous, white. Leaves equitant imbricate in two rows, compreſſed, ſcarcely a finger's length, even. Culms branched, ſcarcely longer than the leaves. Spike ſubracemed, white, defended at the baſe with a leaf ſomewhat in form of a ſpathe. The whole flower or aggregate of florets reſembles in ſome meaſure a double Pink, or rather a ſhuttle-cock. The ſeed is rufous.

Native of the Eaſt Indies, where it was found by Koenig[1].

Willdenow obſerves, that in his ſpecimen the flowers are all directed one way (ſecundi.)

POMPION. See *Cucurbita.*

POMUM. See *Pyrus.*

POMUM AMORIS. See *Solanum.*

PONÆA. (*So named by Schreber, in memory of John Pona, apothecary at Verona, author of* Il monte Baldo deſcritto, Ven. 1617. 4to. *and other works.*)
Lin. gen. Schreb. n. 682.
Toulicia *Aubl. guian. t.* 140. *Juſſ.* 248.
Claſſ. 8. 3. Octandria Trigynia.
Nat. order of *Sapindi*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted: *ſegments* roundiſh, concave, ſpreading.

COR. *Petals* four, lanceolate, acute, with a few piliferous glands at the tip, longer than the calyx, faſtened to a gland ſurrounding the germ.

STAM. *Filaments* eight, capillary, inſerted into the gland ſurrounding the germ: alternate (oppoſite to the petals), larger, the length of the corolla. *Anthers* ovate.

PIST. *Germ* pedicelled? long, three-ſided, placed on a depreſſed gland. *Styles* three, ſhort. *Stigmas* acute.

[1] Forſter. [2] Gen. 243. [3] Forſter.

[1] Linn. ſuppl.

PER. *Capſule* three-celled, three-winged, each wing two-valved.
SEEDS ſolitary, ovate.

ESSENTIAL CHARACTER.

Cal. five-parted, ſpreading. *Pet.* four, with pilliferous glands at the tip. *Germ* three-ſided. *Capſ.* three-winged, three-celled, with one ſeed in each cell.

SPECIES.

1. Ponæa guianenſis.
Lin. ſyſt. ed. Gmel. 630.
Toulicia guianenſis. *Aubl. guian.* 359. *t.* 140.

DESCRIPTION, *&c.*

1. This is a tree, with a middle-ſized trunk of twenty or thirty feet high; and branched at the top into three diviſions, each of which is garniſhed throughout its whole length with leaves growing pretty near each other: they are of a pinnated appearance, and the leaflets are placed in nearly oppoſite rows: they are divided by a midrib, and are entire, ſmooth, green, firm, oval, and waved at the edges: the largeſt are eight inches long, and about three inches wide: the rib on which they grow is about two feet long; and is ſomewhat ſwelled at its origin; at firſt cylindric, and then triangular; the number of leaflets is eight on each ſide. The flowers, which are very ſmall, and of a whitiſh colour, are produced at the extremities of the branches on large ſpreading panicles: they are ſeſſile, and are placed on the panicle in little approximated heaps. This tree is a native of Guiana, growing near the borders of rivers, and flowering in the month of november[a].

POND-WEED. See *Potamogeton.*
PONNA. See *Calophyllum.*
PONNAM-POU MARAVARA. See *Epidendrum.*
PONNAM-TONGERA. See *Caſſia.*
PONTALETSCHE. See *Lawſonia.*]
PONTEDERIA. (*So named in memory of Julius Pontedera Profeſſor of Botany at Padua. Author of* Tabulæ Botanicæ, 1718; *and* Anthologia, 1720.)
Lin. gen. n. 399. *Reich. n.* 431. *Schreb. n.* 545. *Juſſ.* 55. Michelia *Houſt. reliqu.* 8.
Claſſ. 6. 1. Hexandria Monogynia.
Nat. order of *Enſatæ. Narciſſi*, Juſſ.

GENERIC CHARACTER.

CAL. *Spathe* common oblong, opening on the ſide.
COR. one-petalled, two-parted, tubular. *Upper lip* ſtraight, three-parted, outwardly equal. *Lower lip* reflex, three-parted: *ſegments* equal.
STAM. *Filaments* ſix, inſerted into the corolla, three of them awl-ſhaped, longer, inſerted into the mouth of the tube; the three others into the baſe of it. *Anthers* erect, oblong.
PIST. *Germ* oblong, ſuperior. *Style* ſimple, declined. *Stigma* thickiſh.
PER. *Capſule* fleſhy, conical, with the tip wide and bent in, three-celled, triangular, three-grooved.
SEEDS roundiſh, very many.

OBS. P. vaginalis *has ſix petals, a club-ſhaped ſtyle, and a ſuperior germ.* P. haſtata *has alſo a ſuperior germ, and a ſix-parted regular corolla.*

ESSENTIAL CHARACTER.

Cor. one-petalled, ſix-cleft, two-lipped. *Stam.* three inſerted into the top, three into the tube of the corolla. *Capſ.* three-celled.

SPECIES.

[1. Pontederia ovata. *Ovate-leaved Pontederia.*
Lin. ſpec. 412. *Reich.* 2. 13.
Narukiio. *Rheed. mal.* 11. 67. *t.* 34. *Raii ſuppl.* 573.
Leaves ovate, flowers in heads.
2. Pontederia rotundifolia. *Round-leaved Pontederia.*
Lin. ſyſt. 315. *ſuppl.* 192.
Leaves orbicular-cordate.
3. Pontederia azurea. *Blue-flowered Pontederia.*
Swartz, prodr. 57. *deſcr.* 609. *Brown. jam.* 195. *n.* 1.
Leaves roundiſh-elliptic, thickened at the baſe and petioles, flowers in ſpikes.

[a] Aublet guian.

4. Pontederia vaginalis.
Lin. ſyſt. 315. *Reich.* 2. 13. *mant.* 222. *Thunb. jap.* 130. *Burm. ind.* 80. *Plak. phyt. t.* 215. *f.* 4.
Olus paluſtre. *Rumph. amb.* 6. 178. *t.* 75. *f.* 1.
Leaves cordate, raceme drooping.
5. Pontederia limoſa. *Blue and yellow Pontederia.*
Swartz, prodr. 57. *deſcr.* 611. *Sloan. jam.* 1. *t.* 149. *f.* 1. (Nymphææ affinis.)
Leaves cordate-ovate, ſcapes lateral one-flowered, flowers triandrous.]
6. Pontederia cordata. *Heart-leaved Pontederia.*
Lin. ſpec. 412. *ſyſt.* 316. *Reich.* 2. 13. *Loeſl. it.* 54. *hort. cliff.* 133. *Gron. virg.* 37. *Cold. noveb.* 69. *Laur. cochinch.* 198. *Pet. gaz. t.* 1. *f.* 12. (Gladiolus.) *Mor. hiſt.* 3. 618. *ſ.* 15. *t.* 4. *f.* 8. (Sagittæ ſimilis.) *Plak. mant. t.* 349. *f. ult.*
Leaves cordate, flowers in ſpikes.
7. Pontederia haſtata. *Heſtate-leaved Pontederia.*
Lin. ſpec. 412. *ſyſt.* 316. *Reich.* 2. 14. *ſuppl.* 192. *fl. zeyl. n.* 129. *Laur. cochinch.* 199. *Burm. zeyl.* 208. (Sagittaria.) *Plak. phyt. t.* 220. *f.* 8. *Mor. hiſt.* 3. 618. *ſ.* 15. *t.* 4. *f.* 7. (Sagittæ ſimilis.)
Leaves haſtate, flowers umbelled.

DESCRIPTIONS, *&c.*

[Theſe are aquatic herbaceous perennial plants, with fibrous roots, moſtly natives of the Eaſt Indies. Both root and ſtem-leaves ſheathing, frequently ſagittate. Flowers in ſpikes or umbels terminating, or put forth from the cloven ſheath of the leaves, each having a ſpathe. Some of the ſpecies have a ſuperior or half-ſuperior germ, and are more nearly allied to the *Juncі*[b].

1. Native of ſhady moiſt places in Malabar and Cochinchina. But it belongs to the claſs *Monandria*, and is very nearly allied to *Thalia*, if it be not a ſpecies of that genus[c].

2. Root-leaves petioled, orbicular-cordate or reniform, obtuſe, veinleſs. Stem-leaf ſingle, from the ſheath of whoſe petiole iſſues a half round petiole, the length of a finger. Spathe one-leafed, ovate, permanent, terminating. Spadix hiſpid. Spike pedunculed, ovate with the flowers on pedicels, very ſhort, almoſt imbricate in a head. Corolla ſix-cleft, unequal, having the ſize and appearance of the neuter florets of *Centaurea Cyanus*, or Blue-bottle. Stamens ſix. Germ ſuperior, three-ſided. Style ſimple.—Native of Surinam[d].

3. This is a ſtemleſs aquatic plant. Root jointed, with long capillary whitiſh fibres at the joints. Leaves petioled, radical, half a foot long, roundiſh with the baſe drawn out into a thickened petiole and an acuminate tip, entire, the margin waved, ſtriated, veinleſs, nerveleſs, ſmooth. Petioles thickened, ſuberous, longer than the leaves, round, ſmooth, ſheathing at the baſe, producing the ſcape in the middle from a lateral ſheath. Scape ſhort, terminated by a looſe, ſpreading, many-flowered ſpike. Flowers alternate, approximating; under which one common ovate-cordate, blunt, open ſpathe. Corolla ſalver-ſhaped, ſix-cleft, after flowering ſexpartile, almoſt regular, blue: three of the ſegments exterior, dotted, ſomewhat rough-haired; the middle one ſuperior, wider, ovate. Filaments ſix. Anthers incumbent, haſtate at the baſe. Germ three-ſided. Style longer than the ſtamens. Stigma thickened. It bears ſome ſimilitude to *P. cordata*, but the cordate leaves in that ſpecies diſtinguiſh it very clearly[e].

Native of Jamaica, in moſt of the Lagoons and rivers about the Ferry. Browne calls it round-leafed Water-Plantain or Pontederia; and ſays that the leaves are roundiſh thick and ſmooth; the flowers moderately large; the ſtalk about an inch in diameter; that it grows luxuriantly, and throws up its flower-ſpike a good way beyond the ſurface of the water.

4. Leaves radical, cordate, acuminate, nerved, even, on very long petioles widening a little above the

[b] Juſſieu gen. [c] Swartz obſ. [d] Linn. ſuppl. [e] Swartz, deſcr.

middle or sheathing with a lateral cleft. Raceme lateral, simple, shorter than the leaf, from the sheath of the petiole, erect, but bent back when the flowering is over. Flowers four or five, alternate, on short pedicels. Petals six. Stamens six. Style club-shaped. Germ certainly superior.—Native of the East Indies in watery places*.

Thunberg, who found it about Nagasaki in Japan, describes the root as fibrous, in bundles, rust-coloured: the leaves radical, scarcely cordate, acute, entire, sinooth: petioles loose at bottom, sheathing, weak, erect, a foot long, floriferous. Stem or scape none. Flowers from the sheath of the petioles above the middle, racemed, pedicelled, directed the same way, drooping. Peduncle scarcely a finger's length. Pedicels one-flowered, a quarter of an inch in length. He found a specimen in Java with subcordate leaves, in other respects much resembling the above.

5. This is only two or three inches in height. Roots long, jointed, with whitish, capillary, aggregate fibres at the joints. *Leaves radical, emarginate at the base but scarcely cordate, entire, smooth, nerveless, an inch in length. Petioles sheathing at the base, longer than the leaves, fistular, round, smooth; from which issues, in a cleft or lateral sheath, a scape which is an inch long, round, naked, one-flowered. Spathe lanceolate, one-valved, one-flowered. Corolla blue: tube narrow, cylindrical, inclosed within the spathe: border equal, six-parted: segments lanceolate; the three upper ones all of the same blue colour; the three inner ones having a yellow spot at the base near the throat. Filaments three, inserted into the throat of the tube, short. Anthers sagittate, erect, blue, above the tube. Germ oblong, cylindrical. Style erect, the length of the tube and the stamens. Stigmas six, linear, villose. Capsule elongated, round, acuminate, within the spathe, three-celled, three-valved, three-grooved. Seeds very many, small, roundish, brown. This species is very distinct from the rest, by its one-flowered scape and spathe.

Native of Jamaica and Hispaniola on the muddy banks of rivers†.]

6. This grows naturally in marshy places in Virginia, and most parts of North America, and Dr. Houstoun found it growing plentifully at La Vera Cruz. This has a perennial root, from which arise two or three herbaceous thick stalks a foot high, each having one heart-shaped leaf about five inches long, and two and a half broad, of a pretty thick consistence. The base is deeply indented, and the two ears are rounded; the foot stalk of the leaf closely embraces the stalk like a spatha or sheath, for near three inches in length; above this is another sheath which includes the spike of flowers; this opens on one side, and the stalk rises near two inches above it, where the spike of flowers begins. The spikes are about three inches long; the flowers are blue, sit very close together, and have the appearance of lip flowers. These appear in june, but are not succeeded by seeds in England.

[Loureiro found it in the marshes of Cochinchina. According to him, the plant is almost stemless; the leaves cordate-sagittate, long, smooth, on awl-shaped petioles, two feet in length; scape naked, four feet long, spikes long, upright, terminating: corolla blue, spreading very much, six-parted; the three inner segments ovate, the three outer oblong, all of equal length.]

7. This grows naturally about Madras in watery places. It rises with a single stalk eight or nine inches high, having one arrow-pointed leaf, whose base embraces the stalk like a sheath, and from the open side of the sheath come out the flowers, which are at first inclosed in another smaller sheath: these grow in a small kind of umbel; they are composed of six acute-pointed petals which spread open. Each flower stands upon a slender foot-stalk about an inch long; the foot stalk of the leaf rises a considerable height above the flowers, so that they appear to come out from the middle of the stalk.

* Linn. mant. † Swartz, dekr.

Loureiro found this also in Cochinchina, on the banks of the river that flows through the metropolis. He describes it as almost stemless, like the preceding; the leaves subhastate, smooth, on thick, diffused petioles, two feet long; scape none; flowers blue, in a sessile umbel, bursting out near the top of the petiole which is dilated into a membrane. Partial peduncles long. Corolla superior, six-parted, unequal. Filaments six, placed upon the corolla. Capsule ovate, three-celled, many-seeded.

The sixth species was cultivated by Mr. Miller in 1759*.

PROPAGATION AND CULTURE.

6. As this plant grows naturally in moist boggy places, it is very difficult to be preserved in England; nor does the plant arise from seeds here, for I have sowed the seeds in various situations, and managed them differently, but could never get up any of the plants; but I had three or four of the plants sent me, inclosed in large clods of earth from New England, which I planted in pots, covering them with Moss, and constantly supplied them with water. With this management two of them flowered, but the following winter destroyed them, as they were not put under shelter; so that to preserve them, they should be placed under a hot-bed frame in winter, where they may be exposed to the open air at all times when the weather is mild.

7. This sort is much more difficult to preserve in England, because it is a native of hot countries, and grows always in places flowed with water. A plant of it was formerly brought over to Charles Dubois, Esq; at Mitcham, but it was not long-lived here.

[POPLAR TREE. See *Populus*.

POPPY. See *Papaver*.

———, Horned. See *Chelidonium*.

———, Prickly. See *Argemone*.

———, Spatling. See *Cucubalus*.

POPPYA. See *Momordica*.]

POPULAGO. See *Caltha*.

POPULUS. (*Derivation uncertain. Some derive it from πολυς, on account of the multitude of its leaves: Martinius, from πταλλω, to tremble.*)

Lin. gen. n. 1123. *Reich. n.* 1228. *Schreb. n.* 1531. *Gærtn. t.* 90. *Tournef. t.* 365. *Juss.* 409.

Class. 22. 7. Dioecia Octandria.

Nat. order of *Amentaceæ*.

GENERIC CHARACTER.

* *Male.*

CAL. *Ament* oblong, loosely imbricate, cylindrical, composed of one-flowered, oblong, flat scales, torn at the edge.

COR. *Petals* none.

Nectary one-leafed, turbinate below, tubular, ending at top obliquely in an ovate border.

STAM. *Filaments* eight, extremely short. *Anthers* four-cornered, large.

* * *Female.*

CAL. and *Scales* as in the male.

COR. *Petals* none. *Nectary* as in the male.

PIST. *Germ* ovate-acuminate. *Style* scarcely manifest. *Stigma* four-cleft.

PER. *Capsule* ovate, two-celled, two-valved: valves reflex.

SEEDS numerous, ovate, flying with a capillary pappus.

ESSENTIAL CHARACTER.

Cal. of the ament a flat scale torn at the edge. *Cor.* turbinate, oblique, entire.

FEM. *Stigma* four-cleft. *Capf.* two-celled. *Seeds* many, pappose.

SPECIES.

1. Populus alba. *White Poplar.*

Lin. spec. 1463. *Reich.* 4. 262. *hort. cliff.* 460. *fl. suec. n.* 910. *Hudf. angl.* 433. *Wither. arr. ed.* 3. 375. *Lightf. scot.* 616. *Relh. cant. n.* 727. *Sibth. oxon. n.* 374. *Hall. helv. n.* 1634. *Neck. gallob.* 400. *Leers, herborn. n.* 763. *Pollich pal. n.* 928. *Villars dauph.* 3. 790. *Pallas, ross.* 66. *Gmel. sib.* 1. 151. *Du Roi harbk.* 2. 148. *Desfont. atlant.* 368. *Dubam. arb.* 168. *t.* 36.

* Hort. kew.

Hunt. Evel. ed. 1. 208. *ed.* 2. 201. *Blackw. t.* 548.

P. alba. *Dod. pempt.* 835. *Camer. epit.* 65. *Matth.* 136. *Lob. obf.* 609. 1. *ic.* 2. 193. 1. *Tabern. ic.* 977. *Ger.* 1301. 1. *emac.* 1486. 1. *Park. theat.* 1410. 1. *Baub. hift.* 1. 160. 1. *Raii hift.* 1418. *fyn.* 446.

P. alba majoribus foliis. *Baub. pin.* 429. *Tournef. inft.* 592.

α. P. alba canefcens. *Common White Poplar.*

Ait. kew. 3. 405.

P. alba. *Mill. dict. n.* 1.

Leaves angular-toothed, tomentofe and afh-coloured underneath.

β. P. alba nivea. *Great White Poplar*, or *Abele.*

Ait. kew. 3. 405.

P. major. *Mill. dict. n.* 4.

Leaves fublobed-toothed, tomentofe and fnow-white underneath, lobes acute patulous.

Leaves roundifh tooth-angular, tomentofe underneath.

2. Populus tremula. *Trembling Poplar Tree* or *Afp.*

Lin. fpec. 1464. *fyft.* 889. *Reich. n.* 262. *hort. cliff.* 460. *fl. fuec. n.* 909. *Hudf. angl.* 434. *Wither. arr. ed.* 3. 375. *Lightf. fcot.* 616. *Relh. cant. n.* 728. *Sibth. oxon. n.* 375. *Hall. helv. n.* 1633. *Neck. gallob.* 401. *Leers, herborn. n.* 764. *Pollich pal. n.* 929. *Villars dauph.* 3. 791. *Gmel. fib.* 1. 151. *Pallas roff.* 65. *Du Roi harbk.* 2. 148. *Duham. arb.* 2. 182. *n.* 7. *Blackw. t.* 248. *Kniph. cent.* 6. *n.* 73. *Baub. pin.* 429.

P. lybica. *Dod. pempt.* 836. 2. *Matth.* 138. *Camer. epit.* 67. *Lob. obf.* 610. 1. *ic.* 2. 194. 2. *Trag.* 1083. *Lonic.* 1. 26. 2. *Cord. hift. c.* 110. *Dalech.* 87. *Tabern. ic.* 978. *Baub. hift.* 1. 163. *Raii hift.* 1419. *fyn.* 446. *Ger.* 1302. 3. *emac.* 1487. 3. *Park. theat.* 1411. 4.

Leaves roundifh tooth-angular fmooth on both fides.

3. Populus nigra. *Black Poplar Tree.*

Lin. fpec. 1464. *fyft.* 889. *Reich.* 4. 263. *hort. cliff.* 460. *fl. fuec. n.* 911. *mat. med.* 215. *Gærth. fruct.* 2. 56. *Hudf. angl.* 434. *Wither. arr. ed.* 3. 376. *Lightf. fcot.* 618. *Relh. cant. n.* 729. *Sibth. oxon. n.* 376. *Hall. helv. n.* 1632. *Neck. gallob.* 401. *Scop. carn. n.* 1223. *Leers herborn. n.* 765. *Pollich pal. n.* 930. *Du Roi harbk.* 2. 139. *Villars dauph.* 3. 791. *Allion. pedem. n.* 1977. *Gmel. fib.* 1. 151. *Pallas roff.* 66. *Gron. virg.* 194. *Blackw. t.* 248. 1. *Mill. illuftr.*

P. nigra. *Baub. pin.* 429. *Dod. pempt.* 836. 1. *Matth.* 137. *Lob. obf.* 609. 2. *ic.* 2. 194. 1. *Lonic.* 1. 26. 1. *Camer. epit.* 66. *Trag.* 1080. *Dalech.* 86. *Ger.* 1301. 2. *emac.* 1486. 2. *Park. theat.* 1410. 3. *Baub. hift.* 1. 155. *Raii hift.* 1417. *fyn.* 446.

Leaves fmooth on both fides acuminate ferrate deltoid, the longitudinal diameter longer.

[4. Populus dilatata. *Lombardy* or *Po Poplar Tree.*

Ait. kew. 3. 406.

Leaves fmooth on both fides acuminate ferrate deltoid, the tranfverfe diameter longer.]

5. Populus balfamifera. *Common Tacamahaca Poplar Tree.*

Lin. fpec. 1464. *fyft.* 889. *Reich.* 4. 263. *mat. med.* 215. *hort. cliff.* 460. *Du Roi harbk.* 2. 143. *Pallas roff.* 67. *t.* 41. *Gmel. fib.* 1. 152. *t.* 33. *Duham. arb.* 2. 178. *t.* 38. *f.* 6. *Mill. fig.* 174. *t.* 261. *Trew, Ehret. t.* 46.

P. Tacamahacca. *Mill. dict. n.* 6.

Leaves ovate ferrate whitifh underneath, ftipules refinous.

[6. Populus candicans. *Heart-leaved Tacamahaca Poplar Tree.*

Ait. kew. 3. 406.

Leaves cordate acuminate whitifh underneath.

7. Populus lævigata. *Smooth Poplar Tree.*

Ait. kew. 3. 406.

Leaves cordate three-nerved fmooth glandular at the bafe unequally ferrate, petioles compreffed, branches round.

8. Populus monilifera. *Canadian Poplar Tree.*

Ait. kew. 3. 406. *Abbot, Georg. t.* 71.

Leaves fubcordate fmooth glandular at the bafe, ferratures cartilaginous hooked femewhat hairy, nerves patulous, petioles compreffed, branches round.

9. Populus græca. *Athenian Poplar Tree.*

Ait. kew. 3. 407.

Leaves cordate fmooth glandular at the bafe remotely crenate, petioles compreffed, branches round.

10. Populus heterophylla. *Various-leaved Poplar Tree.*

Lin. fpec. 1464. *fyft.* 889. *Reich.* 4. 264. *Du Roi harbk.* 2. 150. *Gron. virg.* 194. 157.

Leaves cordate, the primary ones fubefcent and without any glands at the bafe, petioles roundifh, branches round.]

11. Populus angulata. *Carolina Poplar Tree.*

Ait. kew. 3. 407. *Duham. arb.* 2. 178. *t.* 39. *f.* 9. *Cateſb. car.* 1. *t.* 34.

P. balfamifera. *Mill. dict. n.* 5.

Leaves cordate fmooth, branches angular winged.

DESCRIPTIONS, *&c.*

[1. The White Poplar grows very tall, with a ſtraight trunk, covered with a ſmooth whitiſh bark. Leaves ſmooth, blackiſh green above, but having a thick white cotton underneath; they are about three inches long, on petioles an inch in length, ſtarred and grooved on each ſide: in young trees the leaves are roundiſh, but in adult ones angular, divided into three, five or ſeven lobes; they are without glands, either at the baſe or on the ſerratures. The flowers are exactly ſimilar to thoſe of *P. tremula*[a].

Native of Europe, from Sweden to Italy, alſo of Siberia and Barbary: in woods, hedges, and near rivers and brooks.

Monſ. Deſfontaines remarks that the leaves are larger than in the European tree; that the flowers are monoecous, the ſtamens from eight to thirty, the anthers twin, ſtigmas four, capſule oblong, one-celled, two-valved: his calyx is the nectary of Linneus. In all the ſpecies, except in *P. balſamifera*, the petioles are compreſſed on both ſides.

Leers diſtinguiſhes this from the Black Poplar, thus—Flowering-buds ovate, brown, ſhining; inner ſcales torn, ſcarioſe. Aments thicker, longer, from an ovate baſe cylindric. Scales of the calyx ſeminultifid; with ſimple villoſe ſegments. Stamens eight. Flowering-buds of *P. nigra* ovate-oblong, acuminate, with entire viſcid ſcales. Aments cylindric. Scales of the calyx three or four-parted, with pinnate-multifid naked ſegments. Stamens ſixteen.—Fructification in *P. tremula* the ſame as in *P. alba.*]

β. The leaves of the Abele tree are large, and divided into three, four, or five lobes, which are indented on their edges; they are of a very dark colour on their upper ſide, and very white and downy on their under, ſtanding upon foot-ſtalks which are about an inch long. The young branches of this tree have a purple bark, and are covered with a white down, but the bark of the ſtem and older branches is gray. In the beginning of april the male flowers or katkins appear, which are cylindrical, ſcaly, and three inches long, and about a week after come out the female flowers on katkins, which have no ſtamina like thoſe of the male. Soon after theſe come out, the male katkins fall off, and in five or ſix weeks after, the female flowers will have ripe ſeeds incloſed in a hairy covering, when the katkins will drop, and the ſeeds will be wafted by the winds to a great diſtance.

The leaves of the common White Poplar are rounder, and not much above half the ſize of thoſe of the Abele; the ſhoots of the Abele are paler, the katkins are larger, and the down of the ſeeds is whiter and longer.

[Mortimer ſays juſtly, that the Abele is a ſort of White Poplar, only much finer, bears a larger leaf, and makes a much ſtronger ſhoot, being a much quicker grower. He adds that the beſt ſort comes from Holland and Flanders. Hence in ſome places it is called Dutch Beech.

Samuel Hartlib, in his Compleat Huſbandman, 1659, ſays, that ſome years ago there were ten thou-

[a] Linneus, Ray, Lightf. Withering.

ſand Abeles at once ſent over into England from Flanders, and tranſplanted into many counties. This timber is incomparable, ſays he, for all ſorts of wooden veſſels, eſpecially trays; and butcher's trays cannot well be made without it, being ſo exceeding light and tough.

The fineſt Abeles I ever ſaw were in Buckinghamſhire, at Hartwell near Aylesbury, the ſeat of the late excellent Sir William Lee, Bart. They are remarkably tall, with the cleaneſt bole imaginable.

A ſpecimen of their advance; ſays Evelyn, we have had of an Abele Tree at Sion, which being lopped in February 1651, did by the end of October, 1652, produce branches as big as a man's wriſt, and ſeventeen feet in length. As they thus increaſe in bulk, their value advances likewiſe, which after the firſt ſeven years is annually worth twelve pence more. The Dutch therefore look upon a plantation of theſe trees as an ample portion for a daughter, and none of the leaſt effects of their good huſbandry; which may well be allowed, if the calculation hold of Sir Richard Weſton, who began his plantation not long ſince about Richmond; that thirty pounds being laid out in theſe plants, would render at the leaſt ten thouſand pounds in eighteen years; every tree affording thirty plants, and every of them thirty more, after each ſeven years improving twelve pence in growth, till they arrive to their *acme*.

An Abele Tree planted at Seething in the year 1760, in ſtands without roots (truncheons) ten or eleven feet long, on a bank about thirteen feet broad, with water on each ſide, at about five feet from the ground meaſure five feet to five feet nine inches in circumference, and are tall flouriſhing trees[1].

The wood of White Poplar, ſays Mr. Evelyn, is ſought of the ſculptor; and they ſaw both this and the Black into boards, which continue a long time where they lie dry. In ſword and buckler days they made ſhields of this material. They ſerve alſo for wheel-barrows, and the ſides of waggons and carts, and may be conſidered as an uſeful ſubſtitute to the Aſh[2].

The bark of the White Poplar has been recommended in the cure of intermittent fevers. It ſhould be gathered in ſummer, when the tree is full of ſap, and dried by a gentle heat. A dram of it powdered is given every four hours between the fits: and in obſtinate caſes one fifth part of Peruvian bark is mixed with it[3].

Truncheons of the White Poplar and Abele, nine feet long, and the ſize of a common hop-pole, planted in 1775, on the gravelly bank of a ſtream, ſome yards from the current, in twelve years were from twenty-four to twenty-eight inches in girth, five feet from the ground, and in height were equal to many oaks taken down for timber[4].

A White Poplar in St. John's College walks Cambridge, blown down in a hurricane on friday morning, november the ſixth, 1795, was forty-two feet in length, girted twenty-nine inches and a half, and including the three arms contained three hundred and twenty-eight feet.

It is of quick growth and bears cropping, but is unfavourable to paſturage. The wood is ſoft white and ſtringy, and makes good wainſcotting, being little ſubject to ſwell or ſhrink. Floors, laths, packing caſes and turner's ware are made of it[5]. I have ſeen beautiful floors laid with planks of the Abele.

2. The Trembling Poplar or Aſp, as it is called from the German *Eſpe*, which is the general name for all Poplars, has a green ſmooth bark. The leaves at firſt breaking out are hairy above and cottony underneath, but when full grown are ſmooth; they are ſlightly heart-ſhaped, ſmaller and more approaching to circular than in the preceding, with a few angular teeth on the edges[6]. Linneus ſays that they are rolled inwards at the edge, and that they have two glands running one into the other on the inner ſide above the baſe. He alſo obſerves from Gouan, that the leaf-ſtalks are flatted towards the end, whence the perpetual trembling of the leaves with every breath of wind. But the petioles being flat in the White and Black Poplars as well as in this, Dr. Stokes accounts better for the phenomenon, from the plane of the long leaf-ſtalks being at right angles to that of the leaves, which allows them a much freer motion than could have taken place had their planes been parallel. This trembling of the leaves has been ſo generally noticed as to have become proverbial among us; and Mr. Lightfoot informs us that the Highlanders of Scotland account for it, from a ſuperſtitious notion that our Saviour's croſs was made of this tree, and that therefore the leaves can never reſt.

Of the Aſpen, ſays Evelyn, our woodmen make hoops, fire-wood, coals, &c. and the bark of young trees, in ſome countries, ſerves for candle or torch-wood. He thruſts down a more ſearching foot, and and takes it ill to have his head cut off, as the ſame author quaintly expreſſes it. Villars alſo ſays that it will not bear lopping, like the Black Poplar.

This tree is of ſpeedy growth, and will grow in any ſituation or ſoil, but worſt in clay. It impoveriſhes the land: its leaves deſtroy the graſs, and the numerous ſhoots of the roots ſpread ſo near the ſurface, that they will not permit any thing elſe to grow. The wood is extremely light, white, ſmooth, woolly, ſoft, durable in the air. The bark is the favourite food of beavers[7]. Pannels or pack-ſaddles, canns, milk-pails, clogs, pattens, &c. are made of the wood[8].

The leaves and leaf-ſtalks ſometimes are ſet with red glandular ſubſtances, about the ſize of a pea, which are the neſts of *Tipula juniperina*.

Native of Europe, from Sweden to Italy; in moiſt woods and in boggy ground.

3. The Black Poplar has a naked lofty trunk, covered with an aſh-coloured bark, and a regular handſome head[9.] Leaves ſlightly notched on their edges, ſmooth on both ſides, and of a light green colour. [They have no glands at the baſe, but the ſerratures are glandular on the inner ſide[10]. The petioles are yelloviſh[11]. According to Linneus, the ſtamens are as many again as in *P. tremula*: Leers ſays they are ſixteen in number.] Mr. Miller obſerves that the katkins of this ſort are ſhorter than thoſe of the two former. [Capſule compreſſed a little at the top and ſomewhat acuminate, the reſt turgidly lenticular, one-celled; valves concave ſpreading horizontally. Seeds oblong roundiſh, whitiſh; waving with hairs at top four times as long as the ſeed.

This is a tree of quick growth, and on the banks of rivers, and in moiſt ſituations it grows up to a great height, throwing out numberleſs ſuckers from the roots. It loves a moiſt black ſoil, and bears cropping well. The bark, being light like cork, ſerves to ſupport the nets of fiſhermen. The wood is not apt to ſplinter: it is light and ſoft, and ſometimes uſed by turners[12]. It is incomparable, ſays Mr. Evelyn, for all ſorts of white wooden veſſels, as trays, bowls, and other turner's ware; and is of eſpecial uſe for the bellows-maker, becauſe it is almoſt of the nature of cork, and for ſhip-pumps, though not very ſolid, yet very cloſe and yet light; ſo as it may be uſed for the ſoles, as well as wooden heels of ſhoes, &c. Vitruvius reckons it among the building timbers. Likewiſe to make carts, becauſe it is exceeding light; for vine, and hop-props, and divers vimineous works[13].

It makes uſeful rafters, poles and rails, and in a proper ſoil, makes a very quick return for ſuch purpoſes[14]. It is excellent for flooring boards, and is much uſed for the purpoſes of deal in ſome of the midland counties. The boards are ſo ſlow in taking fire, that the flames are ſaid to have been ſtopped at that part of a building on fire, where this timber had been uſed. It ſmokes a long time before it burſts into a flame[15]: and of courſe is a bad wood for fuel. One

[1] Bath memoirs. 5. 445. [2] Kent's hints. [3] Bath memoirs and Philoſ. Tranſ. [4] Bath memoirs. [5] Withering. [6] Lightfoot. [7] Idem. [8] Linn. [9] Withering. [10] Light. Withering. [11] Silva, b. 1. c. 14. [12] Kent, hints 180. [13] Young's annals, v. 121. p. 64.

of the beſt uſes to which the wood of this and other Poplars can be applied is for packing-caſes[a].

The loppings in january are for the fire, where fuel is dear, but they burn untowardly, and rather moulder away, than maintain any ſolid heat. Of the twigs, with the leaves on, are made brooms. The catkins attract the bees, as do alſo the leaves, which are more tenacious of mildews than moſt foreſt trees, the oak excepted[b]. The red ſubſtance like berries, upon the leaf-ſtalks, as large as a cherry, bulging on one ſide and gaping on the other, are occaſioned by an inſect called *Aphis burſaria*. Many ſpecies of inſects are ſupported by this and the other Poplars[c].

The leaves are gathered in ſome parts of Europe, during the month of october and dried, to be given as fodder to the ſheep in winter[d].

The Black Poplar is trimmed in Italy for the vines to run on. They poll or head the trees every ſecond year, ſparing the middle ſtraight and moſt thriving ſhoot, and at the third year cut that off alſo.

The ſhade of this tree is eſteemed very wholeſome in ſummer, but it does not become walks or avenues by reaſon of the ſuckers, and that it fouls the ground at the fall of the leaf. It ſhould be planted in woods, and to flank places at diſtance, for its increaſe, and the glittering brightneſs of the foliage[e].

Mr. Evelyn mentions divers ſtately trees on the banks of the Po, as he paſſed down that river towards Ferrara; but probably theſe were the Po or Lombardy Poplar, which was not then diſtinguiſhed from the common ſort; though it is remarkable that he ſhould not obſerve the difference in the manner of growth.

The Poplar will flouriſh on almoſt any ſoils, and the large thick leaves full of rich ſweet juice fall in ſuch abundance, as ſoon to create a ſoil, fit for meadow or paſture. Thus tracts of waſte land, not dry, might in a few years be rendered fertile.

In Kamtchatka, the inhabitants are ſometimes reduced to the neceſſity of converting the inner bark into bread.

Scheffer made paper from the cotton down of the ſeeds.

The buds both of this and the White Poplar, ſmell very pleaſantly early in the ſpring, and being preſſed between the fingers yield a balſamic reſinous ſubſtance, which extracted by ſpirits of wine ſmells like ſtorax. A dram of this tincture in broth is adminiſtered in internal ulcers and excoriations, and is ſaid to have removed obſtinate fluxes proceeding from an excoriation of the inteſtines. Theſe buds give name to the *Unguentum Populneum*, which is frequently ordered to aſſwage hæmorrhoidal pains[f].

In the celebrated diſtrict of Waſe in Flanders, the whole of which is diſtributed into ſmall incloſures not more than an acre and half in extent, great quantities of White and Black Poplars are planted in the hedge-rows, ſixteen or eighteen feet aſunder; they are not ſuffered to grow to any great ſize, but are cut down every twenty or four and twenty years, and replaced by young plants of the ſame ſort: the largeſt trees are always cut down, to prevent the land from being too much ſhaded. Fifty trees are allowed to an acre, and they are generally ſold for ſeven or eight florins apiece, for making wooden ſhoes, of which they not only ſend a prodigious quantity into other provinces, but likewiſe ſupply all Holland with them[g].

The Black Poplar is a native of Europe, from Sweden to Italy; near rivers and in moiſt woods.

Pliny mentions diſtinctly theſe three ſorts of Poplar. "Populi tria genera, alba, nigra, et quæ Lybica ap-"pellatur;" the white, the black, and the Lybian or trembling Poplar. The white is called in Greek Λευκη, and the black Αιγειρος. It is well known that this tree was accounted ſacred to Hercules—"Populus "Alcidæ gratiſſima." The hero crowned his head with it, from the banks of Acheron, when he returned from the infernal regions: hence Virgil calls it, "Herculeæ arbos umbroſa corona." It was with the white ſpecies that he uſed thus to adorn himſelf; for Theocritus, in his ſecond Idyllium, calls it Λευκη—

——"Λευκαν Ηρακλειον ιερον δενδρος."

In the invitation of Galatea, in Virgil's ninth eclogue, the ſhepherd among other recommendations, mentions that a White Poplar ſhades the mouth of the cave:—

——"hic candida Populus antro
"Imminet, & lentæ texunt umbracula vites."

4. The Lombardy, Turin or Po Poplar differs from the common Black ſort chiefly in its cloſe conical manner of growth, like the Cypreſs. The leaves are greater in breadth than length, whereas in the Black Poplar the longitudinal diameter is the greateſt.

This has been eſteemed by ſome as no more than a variety of that; and indeed it can ſcarcely be conſidered as a diſtinct ſpecies.

It is recommended for the quickneſs of its growth. A correſpondent in the Gentleman's Magazine (vol. 57. p. 886.) mentions a tree of this ſort, not planted much more than ten years, forty feet high at leaſt, and four feet or more in girt, which has gained for the laſt three years from three to four inches each year in thickneſs, and has made ſhoots near four feet long. As it does not flame readily when burnt, he thinks it might be uſeful for beams and floors of houſes; but he has been informed that it decays near the ground in a few years, that the wood is not durable, and that the young ſhoots are apt to die in hard weather.

Mr. Boutcher obſerves, that it grows even faſter than the common ſorts, is propagated with equal eaſe by cuttings, is as hardy and will ſucceed in the ſame kinds of land.

A correſpondent in Young's annals aſſerts that the Italian Poplar is fit to cut for building uſes in twelve years, and that at eight years growth they are forty feet high. For rafters, ſmall beams, ſtuds, boards, &c. he ſays they have ſtood ſixteen years without the leaſt decay, having been bruſhed over with oil tar and brickduſt, laid on hot.

Dr. Anderſon, who recommends it to be tried for live fences, ſays that he has lately met with ſome facts, that ſeem to ſhow that the Lombardy Poplar is not ſuch an exceeding quick grower, or ſo valuable a tree in other reſpects, as we were made to believe when it was firſt introduced into Great Britain[h].

The quickneſs of growth depends upon the ſoil and ſituation in which it is planted. Mr. Young, in his Iriſh tour mentions ſome which grew to the height of thirty-five feet in five years, and many at two years old of twelve feet. I have meaſured one of my own trees, which has been planted about twenty-five years, and find that it meaſures ſix feet five inches round, a foot above the ground, and ſix feet, at the height of five feet; it is ſixty-three feet five inches high, and has not increaſed ſo much in height as in girt, for ſome years paſt.

For timber it ſeems to be inferior to the common Black Poplar, but it may anſwer tolerably well for floors and other purpoſes where it is not expoſed to the weather, and may prove a uſeful ſubſtitute for deal.

Mr. Songa, his Imperial Majeſty's Conſul here ſuggeſts, that though the Po or Pine-Poplar, as he calls it, ſeems regarded in this country only for its beauty and quick growth, yet in a trading country like ours it may be of ſome conſequence in packing all ſorts of dry goods. The great quantity therefore planted of late years in the neighbourhood of London may in a ſhort time turn to good account for that purpoſe.

The trunk of a Po Poplar about two feet in diameter, and thirty feet in length, which ſize it will attain in twenty years or leſs, is ſold in Lombardy to the dealers for twelve or fifteen ſhillings. They cut it at the water ſaw mills, green, into thin boards of one quarter or one third of an inch, for packers of bales of woollens, boards to put in the middle of ſilk pieces or other manufactures, and for many other uſes where a thin board is wanted. Boards of half an inch, and

[a] Marſhall, midland 2. 387. [b] Evelyn. [c] Wallerius.
[d] Mem. d'Agriculture, Paris 1766. [e] Evelyn.
[f] Allioni. [g] Young's annals, 15. 434.
[h] Eſſays, 1. 100.

planks from one to two or three inches, are alſo cut out for different uſes; but of about three quarters to an inch moſtly, for boxes and caſes to pack merchandiſe in.

The lightneſs of the wood ſaves much expenſe in the carriage: and nails do not ſplit the Poplar plank, as it frequently happens with boxes and caſes made of other wood. The Poplar gives way to the nail, and cloſes upon it afterwards. If caſes fall or are thrown carelefsly on the ground, which too often happens, this wood gives way a little, and returns to its former poſition without ſplitting; which oak and other heavy woods will not do.

In Lombardy, all the veſſels in which the grapes are carried home in carts from the vineyards, are of Poplar plank about two inches thick, and in them the grapes are ſqueezed. Such veſſels laſt thirty or forty years, and by their lightneſs are manageable, however large and long. A four-wheeled cart is in general covered with one of them, and it contains about fifteen hundred weight of grapes, each hundred being a hundred pound of thirty ounces[1].

The peculiar uſe of the Lombardy Poplar in this country has hitherto been for ornamental plantations and covering unſightly buildings. To the latter purpoſe its upright cloſe conical mode of growing, with its feathering very readily down to the very ground, particularly adapts it.

Mr. Gilpin has thought ſome of the Poplars picturesque. They are at leaſt ſtately trees, but their thin quivering foliage is neither adapted to catch maſſes of light, like the Elm, nor has it the hanging lightneſs of the Aſh. Its chief uſe in landſcape is to mix as a variety, in contraſt with other trees.

The conic form of the Lombardy Poplar, as a deciduous tree is peculiar. Among evergreens we find the ſame character in the Cypreſs; and both trees in many ſituations have a good effect. The Cypreſs often, among the ruins of ancient (and the buildings of modern) Rome, breaks the regularity of a wall, or a pediment: and the Poplar on the banks of the Po, no doubt has the ſame effect among the deciduous brethren, by forming the apex of a clump.

One beauty the Italian Poplar poſſeſſes which is almoſt peculiar to it, and that is the waving line it forms, when agitated by wind. Moſt trees in this circumſtance are partially agitated. One ſide is at reſt, while the other is in motion. But the Italian Poplar waves in one ſimple ſweep from the top to the bottom, like an oſtrich-feather on a lady's head. All the branches coincide in the motion: and the leaſt blaſt makes an impreſſion upon it, when other trees are at reſt. Although this tree ſometimes has a good effect, when ſtanding ſingle; it generally has a better, when two or three are planted in a clump[2].

The Lombardy Poplar is ſaid to have been firſt introduced into this country, in Eſſex, by the Earl of Rochford, about the year 1758, and in that county it goes by his name[3]. In France it has been cultivated ſince the year 1749[4].

5. By the growth of this tree in Europe it ſeems not to be of a very large ſize. Bark ſmooth, like that of the Black Poplar; the young branches have much the ſame appearance, but their annual ſhoots are ſeldom more than a foot in length. The leaves reſemble thoſe of the Pear tree; are about four inches long, and an inch and half broad in the middle, drawing towards a point at each end; their upper ſide is of a deep green, and their under ſide is hoary; they ſtand upon long footſtalks, and are placed without order upon the branches. The male flowers come out from the ſide of the branches in long katkins, in april and may, and fall off ſoon after; their ſtamens are numerous, irregular in height, and crowned with headed anthers of a purple colour. The hermaphrodite flowers are produced at the end of the ſhoots upon long ſlender peduncles in very looſe katkins, having a leafy involucre under each, which is oval and entire; and from the boſom of that ariſes the peduncle, which is very ſhort. Upon the top is placed the petal or calyx (or nectary, according to Linnæus,) ſhaped like a wide cup, having a large ſtyle in the centre, and two ſtamens on one ſide, terminated by pyramidal purple anthers. Theſe flowers appear in july, and are ſucceeded by oval capſules terminating in a point, and incloſing downy ſeeds. The ſcaly covers of the buds abound with a tenacious balſam in the ſpring, becoming liquid by heat. It is of a yelloviſh colour and a fragrant ſcent.

This tree is a native of Canada, and ſome other parts of North America, whence the balſam was brought to Europe. It comes over in ſhells, and is ſmooth, of an even texture, and in colour like ſtrained Galbanum, but lighter.

From Canada it was brought to the iſland of Jerſey, and was propagated there. Six of the plants were ſent from thence to Caroline Queen conſort of King George II, in the year 1731, by the title of *Arbre de la Reine*. One of theſe was given by the Queen to Sir Hans Sloane, and was planted in the botanic garden at Chelſea. This produced male katkins ſeveral years, but produced none of the female or hermaphrodite flowers until the year 1760 or thereabouts. It does not appear that this tree has been long in France; for Monſ. Duhamel mentions it to have been lately planted there, and that it had ſupported the winter of 1754, which had killed many other trees[5].

Mr. Miller's figure and deſcription agrees with the American Tacamahaca as it appears in our gardens. The former repreſents the male aments. Pallas's figure gives the female aments; it has much wider leaves; but he adds a leaf of a Daurian variety with a longer ovate leaf, more like ours; and of an Altaic variety, with a lanceolate leaf.

The trunk of the tree, in Siberia is ſtraightiſh, not tall, covered with an aſh-coloured bark; the wood reddiſh, cloſer and a little harder than in the common Poplars. The branchlets in the Altaic tree are more ſlender, and rod-like; in the Daurian thick, ſhort, knobbed and wrinkled, with a yellow ſkin ſometimes of a very deep colour. Leaves in the rod-like variety ovate-acuminate, in the Altaic commonly lanceolate; in the common Daurian ovate and thicker, ſo as to be in a manner coriaceous; in both very ſharp, ſerrate, quite ſmooth, ſhining as if varniſhed, deep green above, pale underneath. Aments terminating, thick, the female ones ripening in june; containing ovate thick rugged capſules, ſubcalycled with the receptacle, ſcarcely peduncled.

The buds of this tree, from autumn to the leaſing ſeaſon are covered with abundance of a glutinous yellow balſam, which often collects into drops, and is preſſed from the tree for medical uſe. It diſſolves in ſpirits of wine; and the inhabitants of Siberia prepare a medicated wine from the buds, which is diuretic, and eſteemed by them ſerviceable in the ſcurvy. The Grous and other birds of that family feeding on theſe buds during winter, acquire a flavour which is much eſteemed in that country.

This tree occurs firſt, in Siberia, in the upper region of the river Irtis, by the Uba, Ulba, and other ſtreams of the Altaic chain. It is more abundant in eaſtern Siberia, eſpecially in the channels of the Jeniſea and Daurian rivers. On gravelly banks it grows to a conſiderable ſize, but with a ſhort trunk; in ſubalpine ſituations it is taller; in the moiſt plains of Dauria it is ſhrubby, becauſe the graſs is fired there, and the twigs of the former year being thus deſtroyed, it cannot riſe into a trunk[6].

6. This alſo is native of Canada, and is reſinous like the preceding; but the leaves are different, being hollowed next the petiole and drawn out at the point. It flowers earlier, namely in march. Introduced about 1772, by John Hope, M. D[7].

7. Native of North America. Cultivated in 1769, by Hugh Duke of Northumberland. It flowers in march and april.

[1] Young's annals, 4. p. 7.
[2] Foreſt Scenery, 1. 53.
[3] Gent. mag. 57. 886. and Hort. kew.
[4] Memoirs d'Agriculture.
[5] Miller's figures.
[6] Pallas, roſs.
[7] Hort. kew.

8. Native

8. Native of Canada; introduced about 1772 by John Hope, M. D. It flowers in may [4].

It appears by Mr. Abbot's fine work on the Province of Georgia, edited by Dr. Smith, that this ſpecies is not confined to Canada.

9. This reſembles the next ſpecies in growth and foliage.—Native of the iſlands of the Archipelago. Cultivated in 1779, by Hugh Duke of Northumberland. It flowers in march and april.

10. A large tree; branches numerous, veined and angular; leaves broad and ſlightly ſerrate: flowers in looſe aments, making little ſhow.—Native of Virginia and New York. Cultivated in 1765 by John Fothergill, M. D. It flowers in april and may [1].

11. Shoots very ſtrong and generally cornered, covered with a light green bark like ſome ſorts of Willow. The leaves upon young trees, and alſo upon the lower ſhoots are very large; but thoſe upon older trees are ſmaller: as the trees advance their bark becomes of a lighter colour, approaching to gray. The aments are like thoſe of the Black Poplar; and the anthers are purple. It grows naturally in Carolina, where it becomes a very large tree. [I have ſeen ſome of a very conſiderable ſize in England.—It was cultivated by Mr. Miller in 1759; and flowers in march [2].]

PROPAGATION AND CULTURE.

Theſe trees may be propagated either by layers or cuttings, which will readily take root, as alſo from ſuckers, which the white Poplars ſend up from their roots in great plenty; but theſe are leſs valuable than thoſe propagated by cuttings, being more liable to ſend up ſuckers. The beſt time for tranſplanting theſe ſuckers is in october, when their leaves begin to decay. Theſe may be placed in a nurſery for two or three years to get ſtrength, before they are planted out where they are deſigned to remain; but if you intend to propagate them from cuttings, it is better to defer the doing of that until february, at which time you may plant truncheons of two or three feet long, thruſting them about a foot and a half into the ground. Theſe will readily take root, and if the ſoil be moiſt in which they are planted, they will arrive to a conſiderable bulk in a few years.

The Black Poplar is not ſo apt to take root from large truncheons, therefore it is the better method to plant cuttings about a foot and a half in length, thruſting them a foot deep into the ground; theſe will take root very freely, and may be afterward tranſplanted where they are to remain. This ſort will grow upon almoſt any ſoil, but will thrive beſt in moiſt places.

I have planted cuttings of this tree, which in four years have been bigger in the trunk than a man's thigh, and near twenty feet in height, and this upon a very indifferent ſoil; but in a very moiſt ſoil, it is common for theſe trees to ſhoot eight or ten feet in a ſeaſon; ſo that where a perſon hath a mind to make a ſhelter in a few years, there is ſcarce any tree ſo proper for that purpoſe as this; but they ſhould not be planted too near the pleaſure-garden, becauſe the katkins and down which fall from theſe trees, will make a prodigious litter in the ſpring.

The white ſorts, as alſo the Aſpen-tree, likewiſe cauſe a great litter in the ſpring, when their katkins and down fall off; and their roots being very apt to produce a large quantity of ſuckers, eſpecially thoſe trees that came from ſuckers, they are unfit to be planted near a houſe or garden; but when they are interſperſed with other trees in large plantations, they afford an agreeable variety, their leaves being very white on their under ſides, which, when blown with the wind, are turned to ſight.

A conſiderable advantage may be made by planting theſe trees upon moiſt boggy ſoils, where few other trees will thrive. Many ſuch places there are in England, which do not at preſent bring in much money to their owners; whereas, if they were planted with theſe trees, they would, in a very few years, overpurchaſe the ground, clear of all expence; but there are many perſons, who think nothing except Corn worth cultivating in England; or if they plant timber, it muſt be Oak, Aſh, or Elm; and if their land be not proper for either of theſe, it is deemed little worth; whereas if the nature of the ſoil was examined, and proper ſorts of plants adapted to it, there might be very great advantage made of ſeveral large tracts of land, which at this time lie neglected.

The wood of theſe trees, eſpecially of the Abele, is very good to lay for floors, where it will laſt many years; and for its exceeding whiteneſs, is by many perſons preferred to Oak; but being of a ſoft contexture, is very ſubject to take the impreſſion of nails, &c. which renders it leſs proper for this purpoſe: it is alſo very proper for wainſcotting of rooms, being leſs ſubject to ſwell or ſhrink, than moſt other ſorts of wood; but for turnery ware, there is no wood equal to this for its exceeding whiteneſs, ſo that trays, bowls, and many other utenſils, are made of it; and the bellows-makers preſer it for their uſe, as do alſo the ſhoemakers, not only for heels, but alſo for the ſoles of ſhoes; it is alſo very good to make light carts, and the poles are very proper to ſupport Vines, Hops, &c. and the lopping will afford good fuel, which in many countries is much wanted.

[Spring is the beſt ſeaſon for planting the cuttings; though they will grow if planted in any of the winter months. They ſhould all be vigorous ſhoots of the laſt year, or at leaſt not older than two years; a foot and half in length. Plant them ten inches or a foot in the ground, in rows two feet and a half or a yard aſunder, and a foot or eighteen inches from each other. Look over the plants in ſummer, to nip off all ſide ſhoots. In two years they may be planted out, if they are for ſmall woods or ſpinneys, in boggy or watery grounds. If they are for ſtandards, they may remain in the nurſery another year; and when planted out, they will be worth in twenty or thirty years as many ſhillings each.

To form a coppice of theſe trees, if the land be not ſo boggy but that it may be ploughed, a crop of oats or other grain may be got off it the year preceding the planting, and in the autumn it ſhould be ploughed again. Let two year old plants from the nurſery be planted one yard aſunder. Hoe down the weeds the firſt year: afterwards they will require no farther trouble till the time of cutting, which may be in ſeven years; and every four or five years after, they may be cut for poles, firewood, &c. By theſe means boggy or marſhy land will often produce more than the beſt paſture. If the ground will not admit of ploughing and ſowing, the plants muſt be ſet in holes at the ſame diſtance.

For timber trees they may alſo be planted a yard aſunder, and when the heads begin to interfere, every other tree may be taken away, or the weakeſt and leaſt thriving: and thus you may continue to thin them as often as they are too cloſe.

After they are finally planted out, never ſtrip them up or take off any ſide branches [3].]

5. The Tacamahacca ſends up a great number of ſuckers from the roots, by which it multiplies in plenty, and every cutting which is planted will take root; ſo that when a plant is once obtained, there may ſoon be plenty of the plants raiſed.

[The cuttings ſhould be planted the middle of february, in rich mellow earth, ſhaded from the mid-day ſun, and watered in dry weather. The ſucceeding february remove them; ſmooth the extremities of their roots, cut off the ſtrong ſide branches, and plant them in rows three feet diſtant, and eighteen inches aſunder in the row: here let them continue two or three years, when they may be tranſplanted to the places where they are intended to remain.

It will grow on almoſt any ſoil; and when there are void ſpaces in plantations, occaſioned by the death of other trees, this will ſooner and better ſupply their places than moſt others [4].]

11. The Carolina Poplar may alſo be propagated by cuttings or layers; the latter is generally practiſed by the nurſery gardeners, being the ſureſt method;

[4] Hort. kew. [1] Idem. [2] Idem. [3] Hunter in Evelyn's ſilva. [4] Boutcher.

and thoſe plants are not ſo full of moiſture as thoſe raiſed by cuttings, ſo are leſs liable to be cut down by the froſt when young: as they are very apt to be, to a conſiderable length. As the trees grow older, the ſhoots are more woody, and not ſo liable to this diſaſter. They ſhould however be planted in a ſheltered ſituation, for their leaves being very large, the wind has great power over them; and the branches, being tender, are frequently broken or ſplit down by the winds in ſummer, where they are much expoſed.

POPULUS. See *Ceccoloba*.

PORANA.

Lin. gen. Reich. n. 230. *Schreb. n.* 286. *Juſſ.* 420. *Burman.*

Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* lanceolate, blunt, commonly ſhorter than the corolla, ſpreading, permanent: in the fruit larger.

COR. one-petalled, bell-ſhaped, half-five-cleft, erect, acute.

STAM. *Filaments* five, capillary, ſpreading, commonly ſhorter than the corolla. *Anthers* incumbent, oval.

PIST. *Germ* ſuperior, ſubglobular. *Style* ſemibifid, longer than the corolla, briſtle-ſhaped, permanent. *Stigmas* capitate.

PER. two-valved.

SEED.

ESSENTIAL CHARACTER.

Cal. five-cleft: in the fruit larger. *Cor.* bell-ſhaped. *Style* ſemibifid, longer, permanent. *Stigmas* globular. *Per.* two-valved.

SPECIES.

1. Porana volubilis.

Lin. ſyſt. 200. *Reich.* 1. 433. *mant.* 560. *Burm. ind.* 31. *t.* 21. *f.* 1.

DESCRIPTION, *&c.*

Leaves diſtant, ovate, ſerrate, ſcarcely ſharp, plaited. Flowers panicled: are not ſome of them male and apetalous[1]?—Native of the Eaſt Indies.

It is a ſmooth twining ſhrub, with alternate leaves. Compare it with the *Borragineæ* and *Ehretiæ*[2].

PORAQUEIBA. See *Barreria*.

PORELLA. (*So named from the number of pores on the capſule.*)

Lin. gen. n. 1186. *Reich. n.* 1303. *Schreb. n.* 1616. *Dill. muſc.* 459.

Claſſ. 24. 1. Cryptogamia Miſcellaneæ: ſed Muſcis (ord. 3.) reſtituenda.

Capſ. oblong, opening with many lateral pores. *Calyptra* none.

OBSERVATION.

Dillenius, who eſtabliſhed this genus, was miſled by an imperfect ſpecimen; and Linnæus adopted it from him, without having ſeen the plant. Mr. Dickſon, with his uſual ſagacity and accuracy, has aſcertained it to be a *Jungermannia*, and has named it *J. Porella*. He has both deſcribed and figured it. It is a native of Pennſylvania*.

POROPHYLLUM. See *Cacalia*.

POROSTEMA. (*From πορος a pore, and στεμα, a ſtamen; each ſtamen of the flower proceeding from a pore.*)

Lin. gen. Schreb. n. 1226. Nectandria. *Roland.* Ocotea. *Aubl. t.* 310. *Juſſ.* 80.

Claſſ. 18. 4. Polyadelphia Polyandria.

Nat. order of *Lauri*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, coloured, permanent, ſix-parted: *ſegments* ovate, obtuſe, the three inner leſs.

COR. none.

Nectary of nine ſcales, oblong, truncate; ſix outer, inſerted at bottom into the ſegments of the calyx, and incumbent on them: three inner faſtened to the receptacle, obverſe to the former: each having four pores; the outer ones on the inner ſide, the inner ones on the outer ſide.

Glands ſix, roundiſh, fleſhy, growing to the bottom of the calyx, between the inner and outer ſcales of the nectary. *Aublet.*

STAM. *Filaments* thirty-ſix, faſtened to the ſcales of the nectary, each proceeding from each pore. *Anthers* roundiſh, compreſſed, peltate.

PIST. *Germ* ovate, angular, immerſed in the receptacle. *Style* ſhort. *Stigma* obtuſe, concave.

PER. *Drupe* turbinate, faſtened to the calyx. *Rolander. Capſule* roundiſh, four or ſix-celled, covered with the calyx. *Aublet.*

SEEDS two. *Roland.*—very many, extremely ſmall. *Aubl.*

ESSENTIAL CHARACTER.

Calyx ſix-parted, unequal. *Corolla* none. *Filaments* nine, with four anthers on each. *Capſule* covered, four or ſix-celled, many-ſeeded.

SPECIES.

1. Poroſtema guianenſis.

O. guianenſis. *Aubl. Guian.* 2. *p.* 780. *t.* 310.

DESCRIPTION, *&c.*

1. A tree which riſes thirty feet high; branching at top: the branches cornered, ſtraight, and horizontal; leaves alternate, ovate-lanceolate, perfectly entire; ſmooth above and green, beneath ſilky and hoary; ſeated on a ſhort footſtalk which is ſwelled at its baſe, and is ſtretched and prominent as far as the axil of the leaf. The flowers are whitiſh, ſmall, paniculated, terminal, and axillary, and exhale a very pleaſant odour. It flowers in Guiana in april, where it is found in woods*.

PORRUM. See *Allium*.

PORTESIA OVATA *Cavanilles.* See *Trichilia pallida*.

PORTLANDIA. (*So named by Dr. Patrick Browne after the Dutcheſs of Portland, who was a great lover of Botany, and well acquainted with Engliſh plants.*)

Lin. gen. n. 227. *Reich. n.* 243. *Schreb. n.* 299. *Brown. jam. t.* 11. *Jacqu. amer. Gartn. t.* 31. *Juſſ.* 202.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Rubiaceæ*, Juſſ.—*Contortis accedit*, Swartz.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, ſuperior: *leaflets* oblong-lanceolate, permanent.

COR. one-petalled: *tube* long, funnel-form-ventricoſe: *border* ſhorter than the tube, five-parted, acute.

STAM. *Filaments* five, awl-ſhaped, declined, almoſt the length of the corolla, from the bottom of the tube. *Anthers* linear, erect, the length of the corolla.

PIST. *Germ* five-cornered, roundiſh, inferior. *Style* ſimple, the length of the ſtamens. *Stigma* oblong, obtuſe.

PER. *Capſule* obovate, five-ſtreaked, five-cornered, retuſe, two-celled, two-valved, opening at the top; *partition* contrary.

SEEDS very many, roundiſh, compreſſed, imbricate.

OBS. P. tetrandra *and* hexandra *have four and ſix ſtamens.*

ESSENTIAL CHARACTER.

Cor. club-funnel-ſhaped. *Anthers* longitudinal. *Capſ.* five-cornered, obtuſe, two-celled, two-valved, many-ſeeded, crowned with a five-leaved calyx.

SPECIES.

1. Portlandia tetrandra.

Lin. ſyſt. 213. *ed. Willd.* 935. *ſuppl.* 143. *Forſt. prodr. n.* 86.

Flowers tetrandrous, leaves oblong blunt (obovate, F.*) ſtipules wide.*

2. Portlandia coccinea.

Swartz prodr. 42. *deſcr.* 384. *Lin. ſpec. ed. Willd.* 936.

Flowers pentandrous, leaves ovate coriaceous.

3. Portlandia grandiflora.

Lin. ſpec. 244. *ſyſt.* 213. *Reich.* 1. 475. *Willd.* 935. *Gærtn.* 1. 133. *Jacqu. amer.* 62. *t.* 44. *pict.* 35. *t.* 64. *Swartz, deſcr.* 385. *obſ.* 69. *Brown. jam.* 164. *t.* 11. *f.* 1. *Smith, ic. rar.* 1. *t.* 6.

Flowers pentandrous—leaves lanceolate-elliptic, Sw.—*calycine leaflets ovate,* Sm.

[1] Linn. mant. [2] Juſſ. gen. * Linn. tranſ. 3. 238. * Aublet.

4. Portlandia hexandra.

Lin. ſyſt. 213. *Reich. i.* 475. *Willd.* 936. *mant.* 45. *Jacqu. amer.* 63. *t.* 182. *f.* 20. *pict.* 35. *t.* 65. *Swartz, deſcr.* 385. *obſ.* 70.

Coutarea ſpecioſa. *Aubl. guian.* 1. 314. *t.* 122.

Silacoides lauri folio flore carneo. *Barrere, equin.* 67.

Flowers hexandrous, tube ſubincurved, peduncles ternate, leaves ovate, calycine leaflets lanceolate. Sm.

DESCRIPTION, *&c.*

1. Leaves at the tops of the branches, approximating, elliptic, petioled, quite entire, very ſmooth. Stipules dilated, with a point. Flowers axillary, ſolitary, peduncled. Germ inferior, four-cornered, terminated by four, awl-ſhaped, ſhort calycine teeth. Corolla longer, club-ſhaped, four-cornered, white, with a four-cleft border. Anthers long, linear, not exceeding the border.—Native of Savage-iſland in the South Seas[b].

2. This is a ſhrub two or three feet in height, erect, branched. Branches and branchlets round, ſmooth. Leaves oppoſite, ovate or ſuboval, ſcarcely acuminate, quite entire, nerved, ſmooth, ſhining, underneath veined, paler, ſomewhat wrinkled, with a convex margin, three inches long, two inches wide. Petioles ſhort, thick, from round flatted a little, ſmooth. Stipules interpoſed between the leaves, broad-ovate, acuminate, preſſed to the ſtem. Flowers axillary, ſolitary, ſcarlet, on peduncles a little longer than the petioles, angular, ſmooth, coloured. Calycine leaflets acute, coloured. Corolla club-funnel-form, three inches long; tube five-cornered, at top ventricoſe; border five-cleft, ſegments ovate-acute, erect. Filaments the length of the tube, erect, equal. Anthers longitudinal, very long, ſpiral, yellow. Germ oblong, five-cornered, ſmooth. Capſule roundiſh, crowned with the calycine leaflets, ſmooth, coloured.

It differs from the *grandiflora* in having the leaves nearly roundiſh or oval, coriaceous, veined underneath; the corollas ſmaller by half, and of a full ſcarlet colour; the capſules roundiſh.

Native of Jamaica, in the weſtern parts, on precipices of the mountains, but not common. It flowers there in june and july[c].

3. Stem ſhrubby, upright, branched, knotty, with a ſmooth bark cracking longitudinally. Branches oppoſite, ſpreading, round, ſcarcely divided, leafy, covered with ſmooth green bark. Buds gummy. Leaves oppoſite, ſpreading, ſomewhat lengthened at the point, equal at the baſe, entire, very ſmooth, paler beneath, marked with alternate veins projecting on both ſides. Footſtalks very ſhort, thick, round below but flatriſh above. Stipules between the leaves, connate, triangular, pointed, very ſmooth, pale, cloſely preſſed to the branch. Flowers axillary, moſtly ſolitary, between the ſtipules, peduncled, a little nodding, very large, white, beautiful, moſt fragrant at night, in the bud yellowiſh tipped with red. Peduncles ſhortiſh, round, ſmooth. Bractes none. Calycine leaflets ovate, pointed, a little curved backwards, keeled at the baſe, reddiſh towards the top. Tube of the corolla with five ſharp downy angles, inflated at the top: limb in five nearly equal ſomewhat triangular ſegments, margins ſpreading, at length revolute. Filaments on the germ, ſcarcely ſo long as the tube, downy at the baſe. Anthers very long, vertical, ſtraight. Germ ſmooth. Style a little longer than the ſtamens, declined, ſpiral, angular. Stigma at length trifid; ſegments revolute[d]. Capſule ſubturbinate, crowned with the leaflets of the calyx ſpreading very much, coriaceous, unequally five-cornered, ribbed at the corners; partition thin. Seeds elliptical, thickiſh, flat on both ſides, having raiſed dots ſcattered over them, ruſeſcent, horizontal, with an umbilicus, before they are fully ripe, fleſhy, white, of a ſharp-pointed pyramidal form, faſtened to the partition[e].

Mr. Saliſbury ſuſpects that the plant deſcribed above agrees in its generic characters with *Cateſbæa*. This cannot be denied with reſpect to the flower: but Cateſby ſays, the fruit is a berry with a ſingle cell. His authority however is but ſlight.

Jacquin's ſynonym ſeems doubtful on account of the inequality at the baſe of the leaves in his figure, which is never the caſe in our plant; nor is it found in any ſpecimen of Portlandia in Sir Joſeph Banks's herbarium.

This ſpecies, as well as the next, has occaſionally ſix ſtamens, and ſix diviſions of the flower.

Dr. Browne gathered it among rocks at the foot of mountains in Jamaica plentifully[f].

Notwithſtanding the difference in the leaves obſerved by Dr. Smith in Jacquin's figure, I cannot but think that this celebrated author intended the ſame ſpecies with that of Browne. Swartz celebrates Browne's figure as very good, and ſo it is in general; but Jacquin obſerves that the filaments are not made to ſpring from the baſes of the tube, and that the draughtſman has repreſented the excrements of inſects for ſeeds, and that he ſeldom could find the real ſeeds, even in unripe fruit. He mentions the very grateful and refreſhing odour of the flowers in the evening.

It was introduced in 1775 by —— Ellis, Eſq. and flowers in july and auguſt[g]. It is rare in the Engliſh gardens, but very frequently flowers at the Marchioneſs of Rockingham's[h].

4. This is a ſhrub, ſix feet in height, upright, divided into branches that are round, but at the origin of the peduncles compreſſed, rugged with ſmall warts ſcattered over them. Leaves ovate, quite entire, ending in a bluntiſh point, very ſmooth, veined, petioled, oppoſite, five inches long. Common peduncles three-flowered, the axillary ones ſolitary, the terminating ones in threes: the pedicels ſhort. Flowers handſome, ſweet, numerous, near three inches in length; the petals fleſh-coloured on the outſide, white within, marked with lines. Capſules brown variegated with aſh-coloured dots. The ſeeds are moſtly eaten by inſects[i]. Jacquin however found ripe ſeeds in april. It flowers in auguſt and ſeptember. Native of woods and coppices about Carthagena, Guiana and Cayenne.

PROPAGATION AND CULTURE.

3. This may be increaſed either by ſeeds or cuttings. The ſeeds, when they can be obtained, may be ſown in pots in light earth, and plunged in the tan-pit. The cuttings do not ſtrike very eaſily. The plants muſt be managed in the ſame way as other woody plants from Jamaica, and require a ſtove heat.

PORTULA. See *Peplis*.

PORTULACA (*of Pliny, by the Greeks λαπαγυν. According to ſome, it ſhould be writ,* Portulata, *quia foliis portulas imitatur. But* Portulaca *may be formed from* Portula, *as* lingulaca *from* lingula, &c. *Salmaſius will have it to be* Porculata, *from* Porcula, *a pig; whence it was called* Porcellia *and* Porcacia; *and by the Greeks* Χοιρόθριον. *Voſſius.*)

Lin. gen. n. 663. *Reich. n.* 659. *Schreb. n.* 824. *Gærtn. t.* 128. *Tournef. t.* 118. *Juſſ.* 312. Anacampſeros *edit. prim.* Telephiaſtrum. *Dill. elth.* 280. Orygia. *Forſk.*

Claſſ. 11. 1. Dodecandria Monogynia.

Nat. order of *Succulentæ. Portulaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* bifid, ſmall, compreſſed at the tip, permanent: (two-leaved, ſuperior, caducous, *G.*)

COR. *Petals* five, flat, erect, blunt, larger than the calyx.

STAM. *Filaments* many, (to twenty, *G.*) capillary, ſhorter by half than the corolla. *Anthers* ſimple.

PIST. *Germ* roundiſh, (half-inferior, *G.*) *Style* ſimple, ſhort. *Stigmas* five, oblong, the length of the ſtyle.

PER. *Capſule* covered, ovate, one-celled, (cut tranſverſely, *G.*) *Receptacle* free, (five, free, ſeparate. *G.*)

SEEDS numerous, ſmall.

OBS. *Some ſpecies (1 to 4) have a circumciſed capſule; in others (5, 7, 8, 12) the capſule is three-valved. P. frutticoſa has a five-leaved calyx, and a three-valved capſule. P. quadrifida has a four-parted corolla, eight ſtamens, and an inferior germ. Juſſieu would remove thoſe*

[b] Linn. ſuppl. [c] Swartz, deſcr. [d] Smith. [e] Gærtner. [f] Smith. [g] Hort. kew. [h] Smith. [i] Jacquin.

Species which have a three-valved capſule into a genus called Talinum *by Adanſon.*

ESSENTIAL CHARACTER.

Cal. biſid (or two-leaved.) *Cor.* five-petalled. *Capſ.* one-celled, cut round, or three-valved. (*Receptacles* five, free, diſtant. *G.*)

SPECIES.

1. Portulaca oleracea. *Garden Purſlane.*
Lin. ſpec. 638. *ſyſt.* 445. *Reich.* 2. 423. *Gron. virg.* 59. *hort. upſ.* 147. *cliff.* 207. *mat. med.* 119. *Brown. jam.* 233. *Townſ. jap.* 192. *Lour. cochinch.* 293. *Burm. ind.* 110. *Hall. helv. n.* 968. *Neck. gallob.* 207. *Scop. carn. n.* 564. *Pollich pal. n.* 449. *Kruck. ſileſ. n.* 713. *Villars dauph.* 3. 818. *Allion. pedem. n.* 1678. *Blackw. t.* 287. *Regn. bot. Plenck ic.* 361. *Abbot, Georg. t.* 39.
P. ſylveſtris. *Matth. epit.* 258. *Ger.* 418. 2. *emac.* 521. 2. *Park. theat.* 723. 1. *Raii hiſt.* 1039.
P. anguſtifolia ſ. ſylveſtris. *Bauh. pin.* 288.
P. ſylv. minor ſ. ſpontanea. *Bauh. hiſt.* 3. 678.
β. P. latifolia ſ. ſativa. *Bauh. pin.* 288. *Raii hiſt.* 1039.
P. domeſtica. *Lob. ic.* 388. *Ger.* 418. 1. *emac.* 521. 1.
P. hortenſis. *Park. parad.* 499.
Leaves wedge-ſhaped, flowers ſeſſile.

2. Portulaca piloſa. *Hairy Purſlane.*
Lin. ſpec. 639. *ſyſt.* 445. *Reich.* 2. 423. *Gærtn. fruct.* 2. 212. *Kniph. cent.* 4. *n.* 64. *Comm. hort.* 1. 9. *t.* 5. *Herm. par. t.* 215. *Pluk. phyt. t.* 247. *f.* 7. *Volk. norib. t.* 341. *Brown. jam.* 234. (Anacampſeros.)
β. *Herm. par. t.* 214. *Pluk. phyt. t.* 105. *f.* 4.
Leaves awl-ſhaped alternate, axils hairy, flowers ſeſſile terminating.

[3. Portulaca quadrifida. *Creeping annual Purſlane.*
Lin. ſyſt. 445. *Reich.* 2. 424. *mant.* 73. *Herm. par.* 216. *Pluk. mant.* 169. (Sedum.)
P. linifolia. *Forſk. ægypt.* 92.
Braëtes in fours, flowers quadrifid, ſtem with hairy joints.

4. Portulaca halimoides. *Halimus-like Purſlane.*
Lin. ſpec. 639. *ſyſt.* 445. *Reich.* 2. 424. *Sloan. jam.* 1. 205. *t.* 129. *f.* 3. *Brown. jam.* 206. (Halimus.)
Leaves oblong fleſhy, ſtem corymboſe, flowers ſeſſile.

5. Portulaca triangularis. *Triangular-racemed Purſlane.*
Lin. ſyſt. 445. *Reich.* 2. 425. *Jacqu. obſ.* 1. 35. *t.* 23. *amer.* 147. *pict.* 73. *Herm. parad.* 21. (Chamæciſtus.) *Plum. ſpec.* 7. *t.* 150. *f.* 2. (Helianthemum.)
P. racemoſa. *Lin. ſpec.* 640.
Leaves obovate flattiſh, raceme ſimple three-ſided.

6. Portulaca craſſifolia. *Thick-leaved Purſlane.*
Lin. ſyſt. 446. *Jacqu. hort.* 3. *t.* 52.
Leaves lanceolate flat, racemes three-ſided, ſtem erect.]

7. Portulaca Anacampſeros. *Round-leaved Purſlane.*
Lin. ſpec. 639. *ſyſt.* 446. *Reich.* 2. 425. *hort. upſ.* 146. *cliff.* 207. *Comm. hort.* 2. 177. *t.* 89. *Raii ſuppl.* 507. *n.* 18.
Telephialtrum ſoho globoſo. *Dill. elth.* 375. *t.* 281. *f.* 363.
Leaves ovate gibbous, peduncle many-flowered, ſtem ſhrubby.

[8. Portulaca patens. *Panicled Purſlane.*
Lin. ſyſt. 446. *Reich.* 2. 425. *mant.* 242.
P. paniculata. *Lin. ſpec.* 640. *Jacqu. amer.* 22. *pict.* 73. *t.* 136. *hort.* 2. *t.* 151.
Talinum reflexum. *Cavan. biſp.* 1. *t.* 1.
Leaves lanceolate-ovate flat, panicle branched, calyxes two-leaved.

9. Portulaca cuneifolia. *Wedge-leaved Purſlane.*
Vahl ſymb. 1. 33.
Orygia portulacifolia. *Forſk. deſcr.* 103.
Leaves wedge ſhaped flat, lower peduncles of the raceme three-flowered, calyxes two-leaved.

10. Portulaca meridiana.
Lin. ſyſt. 446. *ſuppl.* 248.
Leaves elliptic fleſhy flat, joints hairy, flowers ſeſſile terminating.

11. Portulaca decumbens. *Proſtrate Purſlane.*
Vahl ſymb. 1. 33.
Orygia decumbens. *Forſk. deſcr.* 103.
Leaves obovate mucronate, calyxes five-leaved, ſtem ſhrubby decumbent.

12. Portulaca fruticoſa. *Shrubby Purſlane.*
Lin. ſyſt. 446. *Reich.* 2. 426.
P. paniculata. *Lin. ſpec.* 640. *Comm. hort.* 1. 7. *t.* 4. *Sloan. jam.* 1. 205. *Brown. jam.* 234. (Anacampſeros.)
Leaves obovate flattiſh, peduncles racemed, calyxes five-leaved, ſtem ſhrubby.

DESCRIPTIONS, *&c.*

1. Common Purſlane is an annual herbaceous plant, with a round, ſmooth, procumbent, ſucculent ſtem, frequently red, and diffuſed branches, often throwing out fibres at the joints. Leaves more or leſs wedge-ſhaped, oblong, blunt, fleſhy, ſmooth, quite entire, ſeſſile, cluſtered, eſpecially at the ends of the branches. Flowers ſeſſile, ſcattered: corollas yellow, ſpreading; petals ſubtruncate at the tip and emarginate. Stamens ten. Capſule one-celled, opening horizontally. Seeds round, black, very ſmall[a].

The ſtamens vary in number: according to Haller they are from eight to fifteen; Gmelin ſays, from ſix to twelve and more; Villars twelve. Haller and Scopoli attribute five ſtyles to it; and Gmelin ſays that the ſtigma is four-parted. According to Linneus the flowers open from eleven to twelve: Pollich affirms, that he has ſeen them open at nine a. m.

Native of both Indies, China, Cochinchina, Japan, the iſland of Aſcenſion, &c. and now in many parts of Europe. We learn from Turner, that it was cultivated here in 1562[b]. This is our earlieſt written authority; but we probably had it earlier, ſince it was formerly much in requeſt as a wholeſome ſalad and pickle, and as a medicine for various diſorders. But it is now little uſed.]

β. Garden Purſlane differs from the wild, only in having larger and more ſucculent leaves. If it be permitted to ſcatter the ſeeds, in two years it will become in every reſpect like the wild plant.

There are two other varieties; one with deep-green leaves; and the other with yellow leaves, which is called Golden Purſlane; but they are only ſeminal variations.

2. This alſo is an annual herbaceous plant, with very ſucculent ſtalks, of a purple colour, and branching out greatly: the lower branches lie near the ground, but thoſe above are more erect. Leaves narrow, of a lucid green. At the joints are tufts of white hairs, and between theſe come out the flowers, of a fine pink colour, but of ſhort duration, ſeldom continuing open longer than five or ſix hours. They are ſucceeded by ſhort roundiſh capſules, filled with ſmall black ſeeds.

[The capſule is half inferior, covered by the permanent, ſhrivelled corolla as with a veil, of an oblong ſpheroidal form, girt round the middle with a prominent rim, one-celled, cut tranſverſely: the valves hemiſpherical, nearly equal. Receptacles five, free, diſtant, filiform, branched, erect, faſtened to the bottom of the capſule. Seeds kidney-form with a beak, ſhagreened as it were with very minute ſharp tubercles diſpoſed in parallel rows. The receptacles diſtinguiſh this genus from all others[c].

Linneus remarks, that the leaves are alternate, except that the terminating or floral ones are eight together in a ring: that the flowers are ſeſſile and terminating, with a biſid calyx; that there are fifteen ſtamens; and that the ſtyle is five-cleft.

Native of the Weſt Indies. Browne ſays, it is cultivated in many of the gardens about Kingſton in Jamaica, where it has been introduced, on account of its conſtant greenneſs, and the frequent ſhooting of its flowers. It is a native of the Keys, or ſmaller ſandy iſlands beyond Port-Royal; and grows in ſpreading tufts or beds about the root. All the parts of the plant are very bitter, and frequently uſed by the poorer people as a ſtomachic, &c.

[a] Loureiro. [b] Hort. kew. [c] Gærtner.

It

It was cultivated here in 1690, in the Royal garden at Hampton Court [a].

3. Root annual, fibrous. Stems annual, proſtrate, numerous, round, even, alternate, branched, half a foot long, with rooting, hairy joints. Leaves oppoſite, ſpreading, diſtant, ovate-lanceolate, fleſhy, even, ſeſſile, quite entire, concave underneath, with tranſparent *mica* ſcattered over them. Flowering petioles terminating, but when adult becoming lateral, one-flowered, thickened at top, the length of the leaves, terminated by four ſpreading cruciate bracteæ, reſembling the leaf. Flowers ſeſſile, yellow, ſurrounded with white hairs, like the joints. Calyx two-valved, membranaceous, ovate. Corolla four-parted, ovate-oblong, ſtrivelling. Filaments eight, briſtle-ſhaped, curved outwards at the baſe, the length of the corolla. Anthers roundiſh. Germ inferior, rounded. Style cylindric, thicker at top, the length of the ſtamens. Stigmas four, oblong, blunt, recurved, pubeſcent. Capſule ovate, ſlightly four-cornered, ſharpiſh, one-celled, opening tranſverſely. Seeds roundiſh, muricate.

Native of Egypt [b]:—of the Eaſt Indies. Introduced by Sir Joſeph Banks [b].

4. This grows in beds, and ſpreads a little upon the ground, but the ſtems ſeldom exceed two or three inches in length: the leaves are diſpoſed pretty thick at the top of the branches, and the flowers blow in the centre of them. There is a ſort of cotton ſhoots about the flowers, as it grows old, which in time ſpreads over moſt parts of the plant [c]. The calyx is two-leaved; and the capſule opens tranſverſely [c]. It is an annual plant; native of Jamaica.

5. This is a ſhrubby plant, two feet high. Stems round, woody at bottom, ſmooth, branched, from procumbent erect. Leaves oblong or ſubovate, attenuated at the baſe, ſhining, thickiſh, emarginate with a point, convex or flat, with the ſides often rolled back, brittle, ſcattered alternately. Peduncles at leaſt two-flowered, erect, triangular, terminating. Flowers pretty, but without ſcent, with a bifid calyx, and yellow petals. The capſule opens perpendicularly in three parts.—Native of the Weſt Indies, on rocks by the coaſt [a].

6. This was received by Jacquin under the name of P. triangularis. The ſeeds ſown in a ſtove ſucceeded well, and produced ſeveral flouriſhing plants. It agrees in general appearance with P. triangularis, Jacq. hiſt. ſtirp. amer. From a branching root ariſes a fleſhy ſtem of the thickneſs of one's thumb or more; upright, two feet high, and more: perennial, branching, purple below the leaves; the remainder green: it is round, but obſcurely angular to the touch: the younger branches are apt to be nipped by the froſt and to wither: the leaves are lanceolate, obtuſe, or a little ſharpened; and ſometimes emarginate; thick, veinleſs, alternate, ſubſeſſile, perfectly entire, rather attenuated towards the baſe. Racemes triangular, upright, either ſimple or branched, many-flowered, terminal; and at the ſides of theſe new branches ariſe. Flowers inodorous, pedunculated; calycine leaves ovate, acute, concave, whitiſh and tranſparent. Petals red; thrice the length of the calyx, extremely obtuſe. Filaments about thirty, reddiſh, and with glandular hairs. Anthers yellow. Stigma trifid, and deep purple. Capſule globoſe. The whole plant is very ſmooth [c].]

7. This has a ſhrubby ſtalk, four or five inches high. Leaves thick and ſucculent. At the top of the ſtalk comes forth a ſlender peduncle about two inches long, ſupporting four or five red flowers, appearing in july, but not ſucceeded by ſeeds in England. [The axils of the leaves are hairy; and the ſucculent leaves unite this with the Portulacas, although it has very many ſtamens, and a three-valved capſule. The calyx is two-leaved.

Native of the Cape of Good Hope [a]. Cultivated in 1732, by James Sherard, M. D. [d]

8. This alſo is ſhrubby. Stems round, woody at bottom, ſmooth, brittle, ſuberect. Leaves oval, acute at both ends, thick, fat to the touch, quite entire, petioled, alternate; the lower three inches long, the upper gradually ſmaller. Panicle a foot long, ſpreading, erect, terminating. Flowers ſmall, numerous, red, without ſcent. Calyx bifid, concave. Stamens at leaſt fourteen, equal to the corolla. Stigmas three, thickiſh. Capſule roundiſh, obſoletely three-cornered, perpendicularly three-valved [e].

Stem a foot high, flexile; with alternate, even, four-cornered branches; the lower ones longer. Leaves ſubpetioled, half an inch long, quite entire, keeled, brittle. Panicle elongated; with filiform, dichotomous pedicels. Calyx two-leaved, red. Petals five, ovate, red. Anthers yellow. Styles three. Capſule globular, one-celled, three-valved, with the valves doubled. Seeds ſeveral, black. It is quite diſtinct from *P. fruticoſa*, which has white flowers and a five-leaved calyx [f].

Native of the Weſt Indies. Introduced in 1776, by Chevalier Murray [g].

Cavanilles, who following Adanſon and Juſſieu ſeparates this from the Portulacas under the name of *Talinum reflexum*, ſays that the ſtem ſometimes periſhes, and accordingly he marks it as biennial, that the calyx is monophyllous, and the corolla is deep yellow. But plants that are perennial in their native ſoil, frequently die in a ſhort time in our ſtoves. Jacquin might poſſibly take a calyx deeply bifid for a two-leaved one, and as for the colour of the corolla we cannot depend much on that. I am inclined to prefer deſcriptions of plants made on the ſpot, or from ſpecimens gathered in places where they grow naturally, to ſuch as are formed from the plants as they appear in our ſtoves.

9. This is allied to the preceding, but is diſtinguiſhed from it by the peduncles being thicker, and the lower ones having the flowers in threes and pedicelled, at the tip [h].—Native of Egypt.

10. Annual. Stems the ſtature of *Sedum acre*, filiform, herbaceous, creeping, jointed, branched, round, looſe, red: the joints are rooting, and have a few hairs ſcattered over them. Leaves elliptic-lanceolate, even, ſomewhat fleſhy, terminating, oppoſite by pairs or by fours. Flowers yellow, ſolitary, ſurrounded by wool and four leaves. Calyx two-valved, very tender: leaflets ovate, acute, red. Stamens four to eight, but inconſtant.

Native of the Eaſt Indies; flowering from twelve at noon through the day [c].

11. Stem ſhrubby, decumbent: branches angular, covered with the ſame bloom as the whole plant. Leaves alternate, petioled, remote, quite entire, ſomewhat waved, veinleſs, thickiſh. Racemes from the uppermoſt axils, with an awl-ſhaped ſcale on the ſide oppoſite to the pedicel. Calyx five-leaved. Capſule five-valved [c].—Native of Egypt.

12. The leaves are round and ſucculent, all diſpoſed about the bottom of the ſtalk, which riſes generally to the height of ſixteen or twenty inches [i].—Calyx five-leaved. Corolla white. Capſule three-valved [k]. Native of Jamaica. Browne ſays it is a beautiful plant, and grows in a gravelly ſoil in the road through Cambridge hill.

GENERAL OBSERVATIONS.

The capſule in the five firſt ſpecies is cut tranſverſely or horizontally, which Linnæus calls *circumciſſa*; in the reſt it divides vertically into three valves, except in the eleventh which is five-valved. Hence the diviſion into two genera by Adanſon, Juſſieu and Cavanilles. But it is very well remarked by the younger Linnæus, that *Portulaca* is an exceedingly polymorphous genus in the fructification and number of parts.

The four firſt ſpecies and the tenth are herbaceous; the reſt are ſhrubby. Cavanilles indeed conſiders the eighth as herbaceous; but Jacquin as ſhrubby.

[a] Hort. kew. [b] Browne. [c] Jacquin, hort. [d] Linn. mant. [e] Linn. [f] Jacquin, amer. [g] Linn. [h] Hort. kew. [i] Jacquin. [k] Vahl. [l] Linn. mant. [m] Linn. ſuppl. [n] Linn. ſyſt. [o] Vahl. [p] Hort. kew. [q] Browne.

The calyx in the eleventh and twelfth is five-leaved; in the reſt it is two-leaved or deeply bifid.

The corolla is four-cleft in the third ſpecies; five-cleft in the fourth—the reſt have probably five petals.

The filaments vary exceedingly in number. The firſt ſpecies has from ſix to fifteen; the ſecond has fifteen; the third and fourth have eight; the eighth has ſixteen; the tenth has from four to eight; and the twelfth has from twelve to eighteen.

The following table will diſcriminate the ſpecies at one view:

I. Capſule cut tranſverſely. 1 to 5.
- Herbaceous. 1 to 4.
  - Corolla five-petalled. 1. 2.
    - Stamens ſix to fifteen. N. 1.
    - Stamens fifteen. N. 2.
  - Corolla four-cleft. N. 3.
  - Corolla five-cleft. N. 4.
- Shrubby. N. 5.

II. Capſule opening vertically, 6 to 12.
- In threes valves. 6 to 10 and 12.
  - Shrubby. 6 to 9 and 12.
    - Calyx two-leaved or deeply bifid. 6 to 9.
      - Leaves lanceolate flat. N. 6.
      - —— ovate gibbous. N. 7.
      - —— lanceolate-ovate flat. N. 8.
      - —— wedge-ſhaped flat. N. 9.
    - Calyx five-leaved. N. 12.
  - Herbaceous. N. 10.
- In five valves. N. 11.]

PROPAGATION AND CULTURE.

1. Sow the ſeeds upon a bed of rich light earth during any of the ſummer months; but to have it early in the ſeaſon, it ſhould be ſown upon a hot-bed. This ſeed being very ſmall, little of it will be ſufficient for a family. Keep the plants clear from weeds, and in dry weather water them two or three times a week. In warm weather they will be fit for uſe in ſix weeks. To continue a ſucceſſion, ſow three or four times, at the interval of a fortnight or three weeks.

If the ſeeds are intended to be ſaved, leave ſome of the earlieſt plants for this purpoſe, drawing out all ſuch as are weak, or have ſmall leaves. When the ſeeds are ripe, cut up the plants, and ſpread them upon cloths to dry; then beat out the ſeeds and ſift them, to clear them from the leaves and ſeed-veſſels.

2, &c. The other ſorts, being too tender to live in the open air, muſt be kept in pots and placed in the dry ſtove or tan-pit, according to the country whence they come. The herbaceous ſorts are propagated by ſeeds, and the ſhrubby ones by cuttings. The ſeventh may be treated in the ſame way as the moſt ſucculent ſorts of Aloes.

[Browne ſays, that the ſecond ſpecies roots from the joints, and is very eaſily propagated in Jamaica; but thrives beſt in a warm rich ſoil.

PORTULACA. See *Atriplex*, *Cactus*, *Glinus*, *Montia*, *Sefuvium*, *Trianthema*.

PORTULACARIA.

Linn. gen. Schreb. n. 522. *Jacqu. collect.* 1. 160.

Claſſ. 5. 3. Pentandria Trigynia.

GENERIC CHARACTER.

CAL. *Perianth* two-leaved, coloured, permanent: *leaflets* roundiſh, concave, obtuſe, ſpreading very much, oppoſite.

COR. *Petals* five, obovate, obtuſe, quite entire, concave at top, flat at the baſe with the ſides mutually incumbent, ſpreading very much, almoſt three times as long as the calyx, permanent.

STAM. *Filaments* five, awl-ſhaped, very ſhort, erect, two on each ſide of the germ, the other ſolitary. *Anthers* erect, ovate.

PIST. *Germ* three-cornered, ſuperior, the length of the petals. *Style* none. *Stigmas* three, ſpreading very much, aſcending at the tip, muricated above.

PER. none. The calyx and corolla, now erect, cloſely embrace the baſe of the ſeed.

SEED ſingle, ovate-oblong, obtuſe, winged-three-ſided.

ESSENTIAL CHARACTER.

Cal. two-leaved. *Pet.* five. *Seed* one, three-ſided and winged.

SPECIES.

1. Portulacaria afra.
   Lin. ſpec. ed. Willd. 1515. *Jacqu. collect.* 1. 160. *t.* 22.
   Clavtonia Portulacaria. *Lin. mant.* 211. *ſyſt. ed. Reich.* 1. 573.]
   Craſſula Portulacaria. *Lin. ſpec.* 406. *Mill. dict. n.* 11.
   Anacampſeros caule arboreo, foliis cuneiformibus oppoſitis. *Lin. hort. cliff.* 207. *upſ.* 147.
   Craſſula portulacæ facie arboreſcens. *Dill. elth.* 120. *t.* 101. *f.* 120.

DESCRIPTION, &c.

1. This plant riſes with a ſtrong thick ſucculent ſtalk to the height of three feet, ſending out branches on every ſide, ſo as to form a kind of pyramid, the lower branches being extended to a great length, and the others diminiſhing gradually to the top; they are of a red or purpliſh colour and very ſucculent. The leaves are alſo ſucculent and roundiſh, very like thoſe of Purſlane, whence the gardeners call it the Purſlane Tree.

[Native of Africa. It was cultivated in Sherard's botanic garden at Eltham before the year 1732. In that year Dillenius's ſumptuous catalogue of that famous garden was publiſhed, and then this plant had been well known many years before, but had not flowered: "quæ (planta) licet ſatis vulgaris ſit et a "multis retro annis innotuerit, ejuſque plantæ ſatis "annoſæ paſſim obſerventur, non memini tamen flores "ejus vel a me, vel ab aliis adhuc obſervatos eſſe." Mr. Miller has it in the ſecond volume of his Dictionary, publiſhed in 1739.

I do not know that it has yet flowered in England, any more than in the Swediſh ſtoves. It flowered in Italy and Linnæus had the characters of the fructification from Turra.]

PROPAGATION AND CULTURE.

It is propagated with great facility by cuttings, planted during any of the ſummer months, and having been laid to dry for ſome days before. It muſt be placed in a warm glaſs caſe in winter, where it may enjoy the full ſun, and ſhould have very little water during that ſeaſon. In ſummer the plants ſhould be placed abroad in a ſheltered ſituation, and in warm weather ſhould be refreſhed with water twice a week; but the ſtalks being very ſucculent, too much wet is always hurtful to the plants.

[PORTULACÆ AFFINIS. See *Trianthema*.

PORTULACÆ FACIE. See *Portulaca*.

PORTULACASTRUM. See *Sefuvium* and *Trianthema*.

POSOPOSA. See *Carica*.

POSOQUERIA. See *Cyrtanthus* and *Ignatia*.

POSSIRA. See *Rittera*.

POTALIA. See *Nicandra*.

POTAMOGETON,

(*of Pliny,* ποτομογειτων *of Dioſcorides. From* ποταμος, *a river, and* γειτων, *neighbouring or near. Thoſe plants growing in or near water.*)

Lin. gen. n. 174. *Reich. n.* 186. *Schreb. n,* 234. *Gærtn. t.* 84. *Tournef. t.* 203. *Juſſ.* 19.

Claſſ. 4. 3. Tetrandria Tetragynia.

Nat. order of *Inundatæ*. *Naiades*, Juſſ.

GENERIC CHARACTER.

CAL. none.

COR. *Petals* four, roundiſh, obtuſe, concave, erect, clawed, deciduous.

STAM. *Filaments* four, (or eight, *G.*) flat, obtuſe, very ſhort. *Anthers* twin, ſhort.

PIST. *Germs* four, ovate-acuminate. *Style* none: (ſimple, very ſhort, recurved. *G.*) *Stigmas* obtuſe.

PER. none.—*Drupes* four, one-celled. *G.*

SEEDS four, roundiſh, acuminate, gibbous on one ſide, compreſſed on the other, and angular. *Seed* hooked and curved in. *G.*

ESSENTIAL CHARACTER.

Cal. none. *Pet.* four. *Style* none (or very ſhort). *Seeds* four. (*Drupes* four. *G.*)

SPECIES.

1. Potamogeton natans. *Broad-leaved Pond-weed.*
   Lin. ſpec. 182. *ſyſt.* 168. *Reich.* 1. 355. *Willd.* 712. *hort. cliff.* 401. *fl. ſuec. n.* 145. *lappi n.* 68. *Gærtn. fruct.* 2. 23. *Hudſ. angl.* 74. *Wither.*

arr. ed. 3. 211. *Smith, angl.* 193. *Relh. cant. n.* 134. *Sibth. oxon. n.* 202. *Hall. helv. n.* 843. *Gmel. fib.* 3. 34. *Neck. gallob.* 94. *Pollich pal. n.* 171. *Roth. germ.* 1. 92. 2. 201. *Hoffm. germ.* 57. *Fl. dan. t.* 1025. *Krock. filef. n.* 252. *Villars dauph.* 2. 341. *Desfont. atlant.* 148. *Lamarck, illuſtr. no* 1736. *t.* 89. *Mill. illuſtr. t.* 11.

Potamogeton. *Fuchſ. hiſt.* 651. *Matth.* 1137. *Trag.* 688.

P. ſpicata. *Tabern. ic.* 739.

P. latifolium. *Ger.* 675. 1. *emac.* 821. 1.

P. rotundifolium. *Baub. pin.* 193. *Raii hiſt.* 188. *ſyn.* 148. *Petiv. brit. t.* 5. *f.* 4. *Mor. hiſt. ſ.* 5. *t.* 29. *f.* 1. *Tournef. inſt.* 233.

Fontalis major latifolia vulgaris. *Park. theat.* 1254. 1.

Upper leaves oblong-ovate petioled floating; elliptic acute rounded and ſubcordate at the baſe. W.

2. Potamogeton fluitans.

Lin. ſpec. ed. Willd. 713. *Roth. germ.* 1. 72. 2. 202. *Hoffm. germ.* 57. *Gron. virg.* 139.

Leaves lanceolate-ovate drawn to a point at both ends, on long petioles, floating.

3. Potamogeton heterophyllum. *Various-leaved Pond-weed.*

Lin. ſpec. ed. Willd. 713. *Schreb. ſpicil.* 21. *Hoffm. germ.* 59.

Upper leaves elliptic drawn to a point at both ends petioled, lower ones cluſtered ſeſſile linear.

4. Potamogeton perfoliatum. *Perfoliate Pondweed.*

Lin. ſpec. 182. *fyſt.* 168. *Reich.* 1. 355. *fl. lapp.* n. 60. *ſuec. n.* 145. *Hudſ. angl.* 74. *Wither. arr. ed.* 3. 212. *Smith, angl.* 194. *engl. bot.* 168. *Lightf. ſcot.* 121. *Relh. cant. n.* 135. *Sibth. oxon. n.* 203. *Fl. dan. t.* 196. *Hall. helv. n.* 845. *Gmel. fib.* 3. 35. *n.* 26. *Scop. carn. n.* 179. *Roth. germ.* 1. 72. 2. 203. *Hoffm. germ.* 57. *Krock. filef. n.* 253. *Villars dauph.* 2. 341. *Desfont. atlant.* 148. *Raii hiſt.* 188. *ſyn.* 149. *Petiv. brit. t.* 5. *f.* 6.

P. foliis latis ſplendentibus. *Baub. pin.* 195. *Mor. hiſt. ſ.* 5. *t.* 29. *f.* 3. *Tournef. inſt.* 233.

P. 3. *Dod. pempt.* 582. *Ger. emac.* 822. 3.

P. altera. *Dod. Baub. hiſt.* 3. 778. 2.

P. rotundifolium alterum. *Loeſ. pruſſ.* 205. *t.* 65.

Leaves cordate embracing all immerſed.

5. Potamogeton denſum. *Cloſe-leaved Pond-weed.*

Lin. ſpec. 182. *Reich.* 1. 356. *Willd.* 714. *Hudſ. angl.* 75. *Wither. arr. ed.* 3. 212. *Smith, angl.* 194. *Engl. bot. t.* 397. *Lightf. ſcot.* 122. *Relh. cant. n.* 139. *Sibth. oxon. n.* 206. *Abbot, bedf.* 38. *n.* 131. *Hall. helv. n.* 849. *Neck. gallob.* 94. *Pollich, pal. n.* 172. *Hoffm. germ.* 57. *Roth. germ.* 1. 73. 2. 203. *Krock. filef. n.* 254. *Villars dauph.* 2. 341. *Desfont. atlant.* 149.

P. minus, foliis denſis mucronatis non ſerratis. *Mugu. monſp.* 304. *Tournef. inſt.* 233.

P. ſ. Fontalis media lucens. *Raii ſyn.* 149.

Fontalis media lucens. *Baub. hiſt.* 3. 777. 2. *Raii hiſt.* 189.

Tribulus aquaticus minor alter. *Cluſ. hiſt.* 2. 252.

Leaves ovate acuminate oppoſite cluſtered, ſtem dichotomous, ſpike four-flowerad.

6. Potamogeton lucens. *Shining Pond-weed.*

Lin. ſpec. 183. *fyſt.* 169. *Reich.* 1. 356. *Willd.* 714. *hort. cliff.* 40. *fl. ſuec. n.* 147. *Hudſ. angl.* 74. *Wither. arr. ed.* 3. 212. *Smith, angl.* 194. *engl. bot. t.* 376. *Relh. cant. n.* 136. *Sibth. oxon. n.* 204. *Hall. helv. n.* 847. *Fl. dan. t.* 195. *Gmel. fib.* 3. 34. *Neck. gallob.* 95. *Pollich, pal. n.* 173. *Roth. germ.* 1. 73. 2. 204. *Hoffm. germ.* 53. *Krock. filef. n.* 255. *Villars, dauph.* 2. 342. *Desfont. atlant.* 149. *Kniph. cent.* 5. *n.* 70.

P. foliis anguſtis ſplendentibus. *Baub. pin.* 193. *Mor. hiſt. ſ.* 5. *t.* 29. *f.* 4.

P. longis acutis foliis. *Ger. emac.* 822. 4.

P. altera. *Dod. pempt.* 582. 2.

P. aquis immerſum, folio pellucido lato oblongo acuto. *Raii hiſt.* 188. *ſyn.* 148.

P. alpinum plantaginis folio. *Tournef. inſt.* 233.

Fontinalis lucens major. *Baub. hiſt.* 3. 777. 1.

β. P. folio anguſto pellucido fere graminco. *Raii ſyn.* 148. 3?

Leaves ovate-lanceolate ſtat attenuated into the petiole, ſpike many-flowered ſqueezed cloſe.

7. Potamogeton criſpum. *Curled Pond-weed.*

Lin. ſpec. 183. *Reich.* 1. 356. *Willd.* 714. *fl. ſuec. n.* 148. *Hudſ. angl.* 75. *Wither. arr. ed.* 3. 213. *Smith, angl.* 195. *Lightf. ſcot.* 122. *Curt. lond.* 5. 15. *Relh. cant. n.* 137. *Sibth. oxon. n.* 205. *Fl. dan. t.* 927. *Hall. helv. n.* 848. *Neck. gallob.* 95. *Hoffm. germ.* 58. *Roth. germ.* 1. 75. 2. 204. *Pollich, pal. n.* 174. *Scop. carn. n.* 181. *Villars dauph.* 2. 342. *Krock. filef. n.* 256. *Gmel. fib.* 3. 33. *n.* 23.

P. ſ. Fontinalis criſpa. *Baub. hiſt.* 3. 778. 1. *Raii hiſt.* 189. *ſyn.* 149. *Petiv. brit. t.* 5. *f.* 8. 9.

P. fol. criſpis ſ. lactuca ranarum. *Tournef. inſt.* 233. —ſarmentis planis. *Baub. pin.* 193.

Fontilapathum puſillum. *Lob. ic.* 286.

Tribulus aquaticus minor. *Cluſ. hiſt.* 2. 252. 2.—quercus floribus. *Ger. emac.* 824. 2, 3.—prior & alter. *Park. theat.* 1248. 2, 3.

β. P. ſerratum. *Hudſ. angl.* 75.

Leaves lanceolate alternate waved ſerrate.

8. Potamogeton ſerratum.

Lin. ſpec. 183. *fyſt.* 169. *Reich.* 1. 357. *Willd.* 715. *Hall. helv. n.* 846. *Roth. germ.* 1. 75. 2. 205. *Hoffm. germ.* 58. *Guett. ſtamp.* 1. 102. *Krock. filef. n.* 257.

P. longo ſerrato folio. *Baub. pin.* 193.

Leaves lanceolate oppoſite ſomewhat waved.

9. Potamogeton compreſſum. *Flat-ſtalked Pond-weed.*

Lin. ſpec. 183. *fyſt.* 169. *Reich.* 1. 357. *Willd.* 715. *hort. cliff.* 40. *fl. ſuec. n.* 149. *Hudſ. angl.* 75. *Wither. arr. ed.* 3. 213. *Smith, angl.* 196. *engl. bot.* 418. *Lightf. ſcot.* 123. *Relh. cant. n.* 140. *Fl. dan. t.* 203. *Hall. helv. n.* 851. *Roth. germ.* 1. 75. 2. 205. *Hoffm. germ.* 58. *Pollich, pal. n.* 175. *Krock. filef. n.* 258.

P. gramineum latifolium. *Loeſ. pruſſ.* 206. *t.* 66.

P. caule compreſſo. folio graminis canini. *Raii hiſt.* 189. *ſyn.* 149. *Petiv. brit. t.* 5. *f.* 10. *Dill. giſſ.* 122.

Leaves linear obtuſe, ſtem compreſſed.

10. Potamogeton gramineum. *Graſſy Pond-weed.*

Lin. ſpec. 184. *fyſt.* 169. *Reich.* 1. 358. *Willd.* 716. *fl. ſuec. n.* 151. *Hudſ. angl.* 76. *Wither. arr. ed.* 3. 214. *Hall. helv. n.* 850. *Krock. filef. n.* 261. *Neck. gallob.* 92.

P. gramineum latiuſculum, foliis & ramificationibus denſiſſime ſtipatis. *Dill. in Raii ſyn.* 149. *t.* 4. *f.* 3.

Leaves linear-lanceolate alternate ſeſſile wider than the ſtipule, ſtem round ſubdichotomous.

11. Potamogeton puſillum. *Small Pond-weed.*

Lin. ſpec. 184. *Reich.* 1. 358. *Willd.* 717. *fl. ſuec. n.* 153. *Hudſ. angl.* 77. *Wither. arr. ed.* 3. 214. *Smith angl.* 197. *Engl. bot.* 215. *Relh. cant. n.* 142. *Sibth. oxon. n.* 209. *Hall. helv. n.* 852. *Neck. gallob.* 93. *Roth. germ.* 1. 74. 2. 208. *Hoffm. germ.* 59. *Pollich, pal. n.* 177. *Krock. filef. n.* 263. *Villars dauph.* 2. 342.

P. minimum, capillaceo folio. *Baub. pin.* 193. *prodr.* 101.

P. gramineum tenuifolium. *Loeſ. pruſſ.* 206. *t.* 67.

P. puſillum, gramineo folio, caule tereti. *Raii hiſt.* 190. *ſyn.* 150. *Petiv. brit. t.* 5. *f.* 11.

P. puſ. gram. fol. breviori. *Vaill. par. t.* 32. *f.* 4.

Leaves linear oppoſite and alternate, narrower than the ſtipule, ſpreading at the baſe, ſtem round, pedunoles axillary.

12. Potamogeton pectinatum. *Fennel-leaved Pond-weed.*

Lin. ſpec. 183. *Reich.* 1. 357. *Willd.* 715. *fl. ſuec. n.* 150. *Hudſ. angl.* 76. *Wither. arr. ed.* 3. 213. *Smith, angl.* 197. *engl. bot. t.* 323. *Relh. cant. n.* 141. *Sibth. oxon. n.* 208. *Fl. dan. t.* 186. *Neck. gallob.* 93. *Roth. germ.* 1. 76. 2. 206. *Hoffm. germ.* 58. *Krock. filef. n.* 259. *Hall. helv. n.* 853.

P. gramineum ramoſum. *Baub. pin.* 193. *prodr.* 101.

P. millefolium, f. fol. gramineis, ramoſum. *Raii hiſt.* 189. *ſyn.* 150. *Petiv. brit. t.* 5. *f.* 13. Millefolium tenuifolium. *Lob. ic.* 1. 790. *Ger. emac.* 828. 4.

8. P. maritimum. *Sea Pond-weed.* *Lin. ſpec.* 184. *ſuſt.* 169. *Reich.* 1. 358. *Willd.* 715. *ſt. ſucc. n.* 152. *Hudſ. angl.* 76. *Wither. arr. ed.* 3. 213. *Smith, angl.* 197. *Lightf. ſcot.* 124. *Relh. ſuppl.* 2. 9. *n.* 1068. *Pollich, pal. n.* 176.

P. maritimum ramoſiſſimum, grandiuſculis capitulis, capillaceo folio, noſtras. *Pluk. phyt. t.* 216. *f.* 5. *Dill. in Raii ſyn.* 150.

P. ingens, gramineo folio longiori. *Vaill. par. t.* 32. *f.* 3.

Leaves briſtle-ſhaped parallel approximating diſtich ſheathing at the baſe.

13. Potamogeton ſetaceum. *Setaceous Pond-weed.* *Lin. ſpec.* 184. *Reich.* 1. 357. *Willd.* 716. *Hudſ. angl.* 76. *Withet. arr. ed.* 3. 214. *Smith, angl.* 198. *Roth. germ.* 1. 74. 2. 206. *Hoffm. germ.* 58.

P. ramoſum anguſtifolium. *Bauh. pin.* 123. *prodr.* 101.

Leaves briſtle-ſhaped oppoſite.

14. Potamogeton contortum. *Deſfont. atlant.* 150.

Stem filiform, leaves alternate ſubulate-filiform contorted.

DESCRIPTIONS, *&c.*

Theſe are perennial herbaceous plants, inhabitants of the water.—Leaves ſheathing; thoſe on the ſtem often alternate, the floral leaves frequently oppoſite. Flowers in ſpikes, terminating or axillary; the branchlets and ſpikes have often two ſpathes at the baſe [a].

1. The root conſiſts of long ſimple fibres. The ſtems are very long, round, leafy. Lower leaves ſubmerſed and linear; upper ones floating, oval-oblong, nerved, on long petioles. Stipules intrafoliaceous, linear, acute, almoſt equal to the petiole. Peduncles ſolitary, with a bracte at the baſe of the ſame form with the ſtipules, ſimple, thick, round. Spike ſimple, emerging from the water. Flowers browniſh-green [b]. Gærtner will have what Linneus calls naked ſeeds to be drupes.

Dr. Stokes remarks that the leaves of this ſpecies are opaque, whereas in the others they are pellucid: they alſo float wholly, like thoſe of Nymphæa, on the ſurface of the water [c]. The leaf-ſtalks are for the moſt part longer than the leaves [d]. The ſheaths are very large. Spikes cylindrical, two inches long, cloſe, ſlender [e]. Flowers numerous, (forty-five) ſeſſile, greeniſh or yellowiſh [f].

Native of Europe, in ſlow rivers, lakes, ponds and ditches: flowering in july and auguſt.

The floating leaves afford an agreeable ſhade to fiſh, and are the habitation and food of a moth named Phalæna potamogetonis. The roots are a favourite food of the ſwan [g].

Linneus remarks, that when it grows in water which is dried up in ſummer, it ſurpriſingly changes its appearance, growing upright and reſembling a ſmall Plantago [h]. According to Dr. Withering, in this caſe, the ſheaths of the peduncles and petioles are leſs than half the length of their reſpective ſtalks. The leaves are alternate, except the upper pair: the lower ones are lanceolate, on long petioles; the upper ones are oval, with ſhorter petioles. The ſtem is about four inches high. It is a ſmaller plant, and flowers a month or ſix weeks earlier than the common plant. Dr. Withering found it on boggy ground, on Birmingham-heath.

2. This reſembles the preceding, and perhaps is only a variety ariſing from place: about Berlin however it is conſtantly diſtinct. In rivers of Europe.

3. In the upper leaves this reſembles *P. natans* and *fluitans*, but it is only half the ſize, and diſtinguiſhed by its lower leaves being linear, and very like thoſe of Graſs.

Native of Germany, in ponds [i].

I have inſerted theſe two plants, though I can ſcarcely regard them as diſtinct ſpecies. Desfontaines obſerved the leaves to be ſometimes lanceolate and acute, in Barbary. Pollich remarks that the leaves under water have the petioles of a great length in rapid ſtreams. Our common broad-leaved Pondweed has the ſubmerſed leaves linear, and is therefore heterophyllous. Theſe differences therefore ſeem only to conſtitute varieties.

4. Stems very long, round, alternately branched, with leaves crowded about the top and branches. Leaves cordate-ovate, or rather ovate than cordate, at leaſt in the moſt common appearance of the plant; they are almoſt all uniform. Spikes erect, ſolitary, ſhort, brown. Petals bent in and converging, but diſtant at the baſe; they are of a dull purple, and from their ſituation, the air eaſily paſſes between them, to waſt the pollen to the ſtigma. The ſeeds are compreſſed and ſhining.

Every part of the plant, except the flower-ſtalks, is under water, ſo that it is only diſcovered by the ſpikes ſtanding a little above the ſurface in july and auguſt, and abounding in whitiſh pollen. It ſhould ſeem that the reſpiration of ſuch truly aquatic vegetables muſt be as different from the reſpiration of thoſe which inhale atmoſpheric air, as the breathing of fiſhes is from that of beaſts and birds. Accordingly the leaves are of a different texture, pellucid like oiled paper, as Haller remarks, very vaſcular, harſh and ribbed, but often very brittle; their ſurface, like that of aquatic animals, deſtitute of hair or down of any kind [k].

Linneus ſays, that the leaves in this and the other ſpecies are moſt uſually alternate, but at the forkings of the fruiting ſtalk oppoſite.

Native of Europe, Siberia, Barbary, in ditches, ponds, lakes and ſlow rivers.

Haller has made Loeſelius's plant a different ſpecies, n. 844.

5. This propagates itſelf by runners which throw out fibrous roots here and there into the mud, and ſend up round ſtems, naked and ſimple below, dichotomous above, and thickly clothed with numerous pairs of oppoſite ſeſſile ſpreading leaves, both rows of which often incline to one ſide. Each leaf is ribbed, waved and entire. According to Withering, they are linear-lanceolate, three-ribbed, with the edges very finely ſerrulated. Haller, Pollich and others ſay that the leaves are not ſerrate, and Dr. Smith has not found any ſerratures or prickles on their margin. Peduncles from between the diviſions of the ſtem, the uppermoſt terminating, till young branches are protruded beyond it, ſolitary, ſhort, round, recurved, bearing a ſhort ſpike, or rather a little head, of two or four flowers, well compared by Cluſius, and by Gerarde after him, to thoſe of *Aduxa*. Every part of the flower is pale green [l].

According to Mr. Abbot, one flower ariſes from the fork of the ſtem, ſitting on a ſhort fruit-ſtalk. Bauhin and Cluſius ſay that there are three or four flowers together, and this is confirmed by Desfontaines.

Native of Britain, Denmark, Flanders, France, Germany, Switzerland, Italy, Siberia and Barbary; in ditches, ponds and ſlow ſtreams; flowering in the early part of ſummer.

Dr. Goodenough remarks, that it varies in ſize according to the depth of the water.

6. Stems long, nearly ſimple, a little flexuoſe or zigzag, leafy, round. Leaves alternate, except where the flowers are ſituated, entire, a little waved, ribbed, running down into a ſhort foot-ſtalk, and accompanied by a long obtuſe folded intrafoliaceous ſtipule, longer than each joint of the ſtem. According to Withering, the leaves are beautifully green and pellucid, like thoſe of the *perfoliatum*, ſometimes eight inches long, and an inch and half broad. Flowers in a long denſe ſpike, on a round tumid ſtalk, which ſtands ſolitary in the axil of one of the oppoſite leaves, and is ſheathed at

[a] Juſſieu. [b] Smith. [c] Linn. lapp. & Haller. [d] Withering. [e] Haller. [f] Woodw. Neck. Withet. [g] Lin. ſuec. & Withering. [h] Fl. lapp. [i] Willdenow. [k] Smith, angl. & Engl. bot. [l] Id. Id.

the

the bottom by the ſtipule. Flowers dark green; the ſtigma often purpliſh [a]. Dr. Withering ſays the flowers are reddiſh.

There are two common varieties of this ſpecies; one with lanceolate leaves, tapering down very gradually to their inſertion, figured in Flora Danica, &c. the other with leaves perfectly ovate, and placed on a real foot-ſtalk, leſs perceptibly winged by the running down of the leaf; as figured in Engliſh Botany: theſe two plants however differ in no other reſpect, and may eaſily be traced one into the other.

It is frequent in ditches, ponds, lakes and ſlow-flowing rivers, chiefly on a clay ſoil, growing, like moſt others of the genus, all immerſed in the water, except the ſpike of flowers, which appears above the ſurface about midſummer, or a little after [b].

7. Stem angular. Leaves immerſed, blunt, commonly alternate. Peduncles emerging. Spike few-flowered. Flowers reddiſh, ſomewhat remote [c].

Stems branched, flatted. Leaves alternate, but at the forks of the ſtem oppoſite, ſeſſile, nearly linear, ſemitranſparent, very criſp. Spikes as long as the peduncles. Flowers white or reddiſh [d].

Stem reddiſh. Leaves rigid, the lower alternate, the upper oppoſite and heaped at the top of the ſtem. Spikes from ſix to eight-flowered. Peduncles from two to four inches long [e].

Stems numerous, of various lengths, dirty fleſh-coloured, ſomewhat tranſparent, flattened with a groove on each ſide. Sheaths ſhort, of the ſame colour as the ſtem, ſcarcely to be diſtinguiſhed. Leaves ſhining, three-ribbed, ſharply and finely ſerrate. Peduncles thickiſh, ſomewhat flattened. Petals greeniſh brown. Filaments ſcarcely to be diſtinguiſhed. Anthers white. Seeds naked, rather large, dirty green, flattened on each ſide, toothed externally at the baſe [f].

Native of Europe and Siberia, in ponds and ſlow rivers; flowering in june and july.

Ducks very readily eat not only the ſeeds but the leaves; the introduction of water-fowl therefore may probably prevent it from increaſing too much [g].

β. In this variety the upper leaves are oppoſite, whereas in the other they are commonly alternate [h].

8. This is not a variety of the preceding, but differs chiefly in having the leaves more in cluſters and quite entire [i].

Haller refers to ſynonyms, which we have given under *lucens*; and ſays that the waving edges make the leaves appear to be ſerrate, although they are not really ſo. In the Swiſs lakes the plant grows to the length of from ten to twenty fathoms, forming whole woods as it were in the middle of them.

Krocker ſays that the edges of the leaves are really ſerrate; the peduncles thick and reflex; the ſtipules long, wide, whitiſh; the ſpike eight-flowered and cylindrical.—Native of Europe.

9. Stem flexuoſe, alternately branched, very much compreſſed all the way up. Leaves pale green, generally alternate, but the uppermoſt often oppoſite, quite entire, all exactly linear, having a ſtrong central nerve, and two fine lateral ones on each ſide. Stipules intrafoliaceous, one to each leaf and wider, embracing the ſtem, flatted or depreſſed in angles; the lower ones generally acute and lacerated, the upper ones more obtuſe and entire. Peduncle ſhort, ſolitary, flatted, terminating till the ſtem grows above it. Flowers about four or ſix, diſtant in pairs. It has moſt affinity with *P. puſillum*, but is twice as large in all its parts, and eſſentially diſtinguiſhed by its compreſſed ſtem; neither do the leaves ſpread ſo immediately from the baſe as in that ſpecies [k].

Withering remarks, that the leaves are narrower than in the ſeventh ſpecies, and not waved; the ſpikes ſhorter than the peduncles; and the flowers greeniſh.

Ray ſays, that it has the leaves of *Triticum repens*, but ſhorter, with three nerves; a thin pellucid ſheath under each leaf; a ſhort ſpike of pale-green flowers.

Lightfoot remarks, that the leaves are four or five times longer than the ſtipules; and that the ſpike produces about ſix ſmall flowers.

Native of Europe, in ditches and ſlow ſtreams; flowering in june and july, when its ſmall ſpikes of about four or more browniſh-green flowers emerge from the water [l].

10. Stem ſlender, flexuoſe, very much branched. Leaves ſpreading, approximating, bluntiſh, ſcarcely ſerrulate. Stipules rolled up and tubular; thence, at leaſt the lower ones, narrower than the leaves. Spikes ovate, few-flowered, cloſe, ſolitary; the primary one, from the forking of the ſtem. Peduncles the length of the ſpikes. The Pondweed figured in Flora Danica, t. 222. ſeems to be a different ſpecies [m].

Native of Europe, in ditches and ſlow ſtreams. Near Deptford. Binſey-common. Ditches by the road ſide going to Port-meadow, Oxford. River Skern, near Darlington. It flowers in july.

11. The root of this, as well as of the preceding, has all the appearance of being perennial, though Linnæus marks it as annual; and ſeveral fibres are thrown out from the lower part of the ſtem, which is very ſlender, ſtriated, and alternately branched above. Leaves very narrow, moſtly alternate, but oppoſite under every peduncle, not ſheathing the ſtem, their margin perfectly ſmooth and entire. Stipules membranous, lanceolate, inſerted above each leaf and much broader than it, embracing. Peduncles axillary, ſolitary, frequently terminating till the ſtem ſhoots beyond them, ſhorter than the leaves, longer than the ſpike; which is ovate, ſmall, cloſe, bearing three or four greeniſh flowers [n].

The whole plant is extremely ſlender, and the ſtem much branched. Leaves pointed, ſpreading extremely at the baſe, ſometimes almoſt bent back. Stipules ſhort, but broader than the leaves. Spike ſhort, Flowers pedicelled [o].

Leaves rather longer than the internodes. Spikes nearly globular, with about three flowers in each [p].

Native of Europe, in ditches and ponds, eſpecially in a clayey ſoil; flowering in july.

12. Root originating from a tuberous lump, then creeping horizontally, ſlender, much branched, as is alſo the ſtem, which floats under water, extending often two or three feet; it is round, with alternate approximating branches. The leaves, though extremely narrow and pointed, are flat and grow alternately, ſpreading in two directions, on the ſmall branches, having long ſheathing baſes. Stipule growing to the leaf, with a membranaceous margin, and a bifid acute top. The flowers only riſe above the water in june or july, in a ſimple ſpike, but cluſtered two or three together irregularly, often on very long peduncles, the lower ones very remote. Petals kidney-ſhaped, of a dull olive colour. Anthers yellow, very diſtinctly two-lobed. Stigmas obtuſe, entire [q].

According to Withering, the petals are whitiſh. Mr. Stackhouſe ſays, there are five or ſix flowers on each peduncle. Mr. Ray, that the upper branchlets end in looſe ſpikes compoſed of three or four flowers in a ſort of whorl.

Native of Europe, in ponds, and not unfrequently in rivers, in which, if the ſtream be rapid, it rarely flowers.

β. Leaves growing from the ſheaths, which are ſlightly forked at the extremity, as in *P. pectinatum*. In ſtagnant ſalt water ditches the whole plant is ſhorter; the branches and leaves cloſer and more frequent. In running water, ſalt or freſh, it grows to a vaſt length, and the branches and leaves are farther aſunder, but in both caſes preſerve their parallelism. Spike long, with ſeſſile flowers, growing moſtly in interrupted whorls: t. 186, in Flora Danica more exactly reſembles our freſh than ſalt water plants, though quoted in *Syſt. veget.* for *P. marinum*. In water that is quite freſh it becomes *P. pectinatum*, according to the obſervation of Mr. Crowe [r]. Dr. Smith does not perceive differential marks in the marine plant ſufficient

[a] Engl. bot. [b] Idem. [c] Smith, angl. [d] Withering. [e] Relhan. [f] Curtis. [g] Idem. [h] Smith. [i] Willdenow. [k] Smith. [l] Smith. [m] Idem. [n] Idem. [o] Woodward. [p] Withering. [q] Engl. bot. & Smith, angl. [r] Woodward in Withering.

even to conſtitute it a variety of that which grows in freſh water.

13. This is diſtinguiſhed by its oppoſite briſtle-ſhaped leaves.—Native of Europe in ditches. Mr. Hudſon found it in peaty ditches in Lancaſhire. On his authority it reſts entirely as an Engliſh plant.

Dr. Smith has not ſeen the plant either in the Linnean herbarium or elſewhere. It flowers in july and auguſt [a].

14. Found by Desfontaines in the rivulets of Caſſa in Barbary [b].

POTAMOGETON. See *Najas, Polygonum, Ruppia, Vallisneria, Zannichellia.*

POTAMOGITON. See *Myriophyllum, Polygonum, Potamogeton.*

POTAMOPITHYS. See *Elatine.*

POTATOES. See *Solanum.*

————, CANADA. See *Helianthus tuberoſus.*

————, SPANISH. See *Convolvulus.*]

POTENTILLA. (*Diminutive from* Potentia, *on account of its ſuppoſed medicinal powers.*)

Lin. gen. n. 634. *Reich. n.* 690. *Schreb. n.* 866. *Juſſ.* 338. Quinquefolium & Pentaphylloides. *Tournef. t.* 153. Pentaphyllum. *Gærtn. t.* 73.

Claſſ. 12. 5. Icoſandria Polygynia.

Nat. order of *Senticoſæ*. *Roſaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, flatiſh, ten-cleft: the alternate ſegments ſmaller reflex.

COR. *Petals* five, roundiſh, ſpreading, inſerted by their claws into the calyx.

STAM. *Filaments* twenty, awl-ſhaped, ſhorter than the corolla, inſerted into the calyx. *Anthers* elongate-lunulate.

PIST. *Germs* numerous, very ſmall, collected into a head. *Styles* filiform, the length of the ſtamens, inſerted into the ſide of the germ. *Stigmas* obtuſe.

PER. none. Common receptacle of the ſeeds roundiſh, juiceleſs, very ſmall, permanent, covered with ſeeds, incloſed within the calyx.

SEEDS numerous, acuminate-wrinkled. *G.*

OBS. *If a fifth part of the number be taken away in all parts of the fructification* Potentilla *gives* Tormentilla: *ſince they differ therefore only in number, the two genera might be combined.*

ESSENTIAL CHARACTER.

Cal. ten-cleft. *Pet.* five. *Seeds* roundiſh, naked, faſtened to a ſmall juiceleſs receptacle.

SPECIES.

* *With pinnate leaves.*

1. Potentilla fruticoſa. *Shrubby Cinquefoil.*
Lin. ſpec. 709. *Reich.* 2. 539. *hort. cliff.* 193. *fl. ſuec. n.* 451. *Hudſ. angl.* 222. *Wither. arr. ed.* 3. 472. *Smith, brit.* 547. *Engl. bot. t.* 88. *Dickſ. hort. ſicc.* 6. 12. *Kalm, it.* 2. 263. *Gmel. ſib.* 3. 180. *n.* 26. *Du Roi harbk.* 2. 153. *Knipb. cent.* 5. *n.* 71. *Lour. cochinch.* 326.
Pentaphylloides rectum frutic. eboracenſe. *Mor. hiſt.* 2. 193. *ſ.* 2. *t.* 23. *f.* 5. *Hortul. angl. t.* 54. *Duham. arb.* 2. *t.* 20. *Tournef. inſt.* 298.
P. rectum frutescens. *Walth. bort.* 95. *t.* 17.
P. fruticoſa. *Raii ſyn.* 256. *cat. ed.* 2. 228. *t.* 1. *Petiv. brit. t.* 41. *f.* 8.
P. fruticoſum. *Raii hiſt.* 616.
P. frut. elatior, minus hirſuta. *Amm. ruth.* 88. *t.* 17.
Leaves pinnate, ſtem ſhrubby.

2. Potentilla anſerina. *Silvery Cinquefoil, Silver-weed* or *Wild Tanſey.*
Lin. ſpec. 710. *ſyſt.* 477. *Reich.* 2. 539. *fl. lapp. n.* 210. *ſuec. n.* 452. *hort. cliff.* 193. *mat. med.* 131. *Hudſ. angl.* 222. *Wither. arr. ed.* 3. 473. *Smith, brit.* 548. *Curt. lond.* 3. *t.* 31. 203. *Lightf. ſcot.* 268. *Relh. cant. n.* 373. *Sibth. oxon. n.* 464. *Fl. dan. t.* 544. *Gunn. norv. n.* 38. *Neck. gallob.* 221. *Pollich pal. n.* 493. *Scop. carn. n.* 615. *Villars dauph.* 3. 575. *Krock. ſileſ. n.* 791. *Regn. bot.*

[a] Smith, brit. [b] Desfont. atlant.

Fragaria caule repente, fol. pinnatis ſerratis tomentoſis, petiolis longis unifloris. *Hall. helv. n.* 1126.
F. Anſerina. *Crantz. auſtr.* 71.
Potentilla. *Bauh. pin.* 321. *Camer. epit.* 758. *Matth.* 1016. *Park. theat.* 593.
P. ſ. Argentina. *Bauh. hiſt.* 2. 398. *b.*
Argentina. *Dod. pempt.* 600. 1. *Ger.* 841. *emac.* 993. *Raii hiſt.* 617. *Blackw. t.* 6.
Pentaphylloides Argentina dicta. *Raii ſyn.* 256. *Petiv. brit. t.* 41. *f.* 11.
P. incanum Tanaceti folio. *Mor. hiſt. ſ.* 2. *t.* 20. *f.* 4.
P. argenteum alatum ſ. Potentilla. *Tournef. inſt.* 298.
Leaves interruptedly pinnate ſerrate ſilky underneath, ſtem creeping, peduncles one-flowered.

[3. Potentilla ſericea. *Silky Cinquefoil.*
Lin. ſpec. 710. *Reich.* 2. 539. *Hall. goett.* 2. 106.
Leaves bipinnate tomentoſe on both ſides, ſegments parallel approximating, ſtems decumbent.

4. Potentilla multifida. *Multifid Cinquefoil.*
Lin. ſpec. 710. *Reich.* 2. 540. *Gmel. ſib.* 3. 182. *n.* 30. *Pallas it.* 3. 194. *Knipb. cent.* 2. *n.* 62.
Fragaria fol. ſubtus tomentoſis pinnatis, pinnis primis pinnatis, ultimis ſimplicibus. *Hall. helv. n.* 1125.
Pentaphylloides ſupinum minus, folio glabro non ſerrato. *Amm. ruth.* 116?
P. humile, fol. anguſtis. *Amm. ruth. n.* 113. *t.* 16. *ſec. Pallas.*
P. repens, fol. pinnatis. *Buxb. cent.* 1. 30. *t.* 49. *f.* 1?
β. P. ſupina minor, fol. alatis hirſutis varie diſſectis. *Amm. ruth.* 117.
Leaves bipinnate, ſegments quite entire diſtant tomentoſe underneath, ſtem decumbent.

5. Potentilla fragarioides. *Strawberry-leaved Cinquefoil.*
Lin. ſpec. 710. *Reich.* 2. 540. *Gmel. ſib.* 3. 182. *n.* 31. *t.* 54. *f.* 2. *Hall. goett.* 2. 106.
Leaves pinnate and ternate, the outmoſt larger, runners creeping.]

6. Potentilla rupeſtris. *Rock Cinquefoil.*
Lin. ſpec. 711. *ſyſt. ed.* 13. 396. 14. 477. *Reich.* 2. 541. *hort. cliff.* 193. *fl. ſuec. n.* 453. *Hudſ. angl.* 223. *Wither. arr. ed.* 3. 473. *Smith, brit.* 548. *Pallas, it.* 2. 655. *Jacqu. auſtr.* 2. 9. *t.* 114. *Scop. carn. n.* 616. *Gouan, illuſtr.* 32. *Pollich pal. n.* 494. *Villars dauph.* 3. 575. *Krock. ſileſ. n.* 792. *t.* 9. *Knipb. cent.* 11. *n.* 88.
Fragaria fol. pinnatis, pinnis ſeptenis ſubrotundis ſerratis. *Hall. helv. n.* 1127.
F. rupeſtris. *Crantz, auſtr.* 72.
Pentaphylloides erectum. *Bauh. hiſt.* 2. 398. *d. Mor. hiſt. ſ.* 2. *t.* 20. *f.* 1. *Raii hiſt.* 616. *ſyn.* 255. *Petiv. brit. t.* 41. *f.* 6. *Tournef. inſt.* 298.
Pentaphyllum fragiferum. *Cluſ. hiſt.* 2. 107. *n.* 5. *Ger. emac.* 991. *Park. theat.* 397. 7.
Quinquefolium fragiferum. *Bauh. pin.* 326. *Cluſ. hiſt.* 2. 107. *f.* 1.
Leaves lyrate-pinnate in ſevens, fives and threes, leaflets ovate ſerrate hairy, ſtem erect.

[7. Potentilla bifurca. *Bifid-leaved Cinquefoil.*
Lin. ſpec. 711. *ſyſt.* 477. *Reich.* 2. 541. *Gmel. it.* 1. 149. *t.* 27. *f.* 1. *Krock. ſileſ. n.* 794.
Pentaphylloides orientale ſupinum, fol. alatis bifidis vel trifidis. *Tournef. cor.* 21.
Leaves pinnate almoſt equal, leaflets oblong ſubbifid, the outmoſt confluent.

8. Potentilla pimpinelloides. *Burnet-leaved Cinquefoil.*
Lin. ſpec. 711. *Reich.* 2. 541.
Pentaphylloides orientale erectum, folio & facie Pimpinellæ. *Tournef. cor.* 21. *Buxb. cent.* 1. 30. *t.* 48.
Leaves pinnate, leaflets roundiſh toothed equal, ſtem erect.

9. Potentilla penſylvanica. *Agrimony-leaved Cinquefoil.*
Lin. ſyſt. 477. *Reich.* 2. 542. *mant.* 76. *Jacqu. hort.* 2. 89. *t.* 189.
Pentaphylloides canadenſe, fol. Agrimoniæ. *Boerh. lugdb.* 1. 40.
Lower leaves pinnate, upper ternate, leaflets gaſh-ſerrate, ſtem erect pubeſcent.

10. Potentilla ſupina. *Trailing Cinquefoil.*
Lin. ſpec. 711. *ſyſt.* 477. *Reich.* 2. 542. *hort. cliff.* 193. *upſ.* 133. *Reg. ged.* 1. 133. *n.* 2. *Gmel. it.* 1. 149. *t.* 27. *f.* 2. *Jacqu. auſtr.* 5. 3. *t.* 406.

t. 406. *Pollich pal. n.* 495. *Krock. silef. n.* 793. *t.* 10.

Pentaphyllum supinum, Potentillæ facie. *Clus. hist.* 2. 107. *Ger.* 837. 6. *emac.* 988. 6.

P. alpinum minus supinum. *Pluk. phyt. t.* 106. *f.* 7.

Pentaphylli species flore luteo enneaphyllos hirsuta. *Ambrof. phyt. t.* 414.

Pentaphylloides supinum. *Baub. hist. Raii hist.* 616. *Mor. hist. s.* 2. *t.* 20. *f.* 3.

Quinquefolio fragifero affinis. *Baub. pin.* 326.

Leaves pinnate, stem dichotomous decumbent.]

** *With digitate leaves.*

11. Potentilla recta. *Upright Cinquefoil.*
Lin. spec. 711. *syst.* 477. *Reich.* 2. 542. *hort. upf.* 133. *Jacqu. austr.* 4. 43. *t.* 383. *Scop. carn. n.* 618. *Krock. silef. n.* 795. *Villars dauph.* 3. 569.

Fragaria caule erecto, fol. quinis & septenis acute serratis. *Hall. helv. n.* 1121.

F. recta. *Crantz, austr.* 79.

Quinquefolium rectum luteum. *Baub. pin.* 325. *Tournef. inst.* 297.

Q. alterum vulgare. *Dod. pempt.* 116.

Q. montanum erectum hirsutum luteum. *Garid. aix.* 393. *t.* 83.

Pentaphyllum majus luteo flore vel albo. *Park. theat.* 396. 1.

P. rectum. *Baub. hist.* 2. 898.—majus, flore subluteo, interdum albo & rubro. *Lob. obs.* 393.—flore albo. *Raii hist.* 614.

Leaves septenate lanceolate serrate somewhat hairy on both sides, stem erect.

12. Potentilla argentea. *Hoary Cinquefoil.*
Lin. spec. 712. *syst.* 477. *Reich.* 2. 543. *fl. suec. n.* 454. *hort. cliff.* 193. *Hudf. angl.* 223. *Wither. arr. ed.* 3. 474. *Lightf. scot.* 270. *Smith, brit.* 549. *engl. bot. t.* 89. *Relh. cant. n.* 374. *Sibth. oxon. n.* 465. *Abbot, hedf.* 113. *Fl. dan. t.* 865. *Reyg. ged.* 1. 133. *Pollich pal. n.* 496. *Krock. silef. n.* 796. *Scop. carn. n.* 619. *Villars dauph.* 3. 571. *Gmel. sib.* 3. 184. *n.* 37. *Kniph. cent.* 11. *n.* 86.

Fragaria caule erecto, fol. quinatis apice serratis subtus tomentosis. *Hall. helv. n.* 1124.

F. argentea. *Crantz, austr.* 73.

Quinquefolium petræum majus. *Tabern.* 122.

Q. folio argenteo. *Baub. pin.* 325. *Tournef. inst.* 297.

Q. Tormentillæ facie. *Ger.* 138. 7. *emac.* 988. 7.

Pentaphyllum minus. *Camer. epit.* 760.

P. album. *Matth.* 1020.

P. erectum, fol. profunde sectis subtus argenteis, flore luteo. *Baub. hist.* 2. 398. *c. Raii hist.* 613. *n.* 14. *syn.* 255. *Mor. hist. s.* 2. *t.* 19. *f.* 11.

Leaves quinate wedge-shaped gashed tomentose underneath, stem erect.

[13. Potentilla intermedia.
Lin. syst. 477. *Reich.* 2. 543. *mant.* 76. *Villars dauph.* 3. 568. *Hall. helv. n.* 1120.

Quinquefolium montanum luteum erectum hirsutum. *Baub. pin.* 325. *prodr.* 139. *Raii hist.* 613. 11. *exter.* 213.

Root-leaves quinate, stem-leaves ternate, stem almost upright very much branched.]

14. Potentilla hirta. *Hairy Cinquefoil.*
Lin. spec. 712. *syst.* 477. *Reich.* 2. 543. *mant.* 400. *Krock. silef. n.* 797. *Villars dauph.* 3. 570. *Allion. pedem. n.* 1478. *t.* 71. *f.* 1. *Kniph. cent.* 4. *n.* 65.

Quinquefolium rectum minus, anguſtioribus foliis, monſpelienſe. *Raii exter.* 213.

Q. montanum erectum hirsutum luteum. *Magn. monsp.* 216.

Leaves septenate and quinate wedge-shaped gashed hairy, stem erect rough-haired.

[15. Potentilla stipularis. *Stipular Cinquefoil.*
Lin. spec. 712. *syst.* 478. *Reich.* 2. 544. *Gmel. sib.* 3. 185. *t.* 37. *f.* 2.

Leaves in sevens sessile placed on the dilated stipule.

16. Potentilla opaca. *Opaque Cinquefoil.*
Lin. spec. 713. *Reich.* 2. 544. *amoen.* 4. 274. *Pollich pal. n.* 498. *Krock. silef. n.* 800. *t.* 12? *Villars dauph.* 3. 566?

Quinquefolium minus repens lanuginoſum luteum. *Baub. pin.* 325.

Q. 4 flavo flore 2 species. *Clus. hist.* 2. 106.

Quinquefolio ſimilis enneaphyllos hirsuta. *Baub. pin.* 325. *prodr.* 139.

Root-leaves quinate wedge-shaped serrate, stem-leaves subopposite, branches filiform decumbent.

17. Potentilla aurea. *Golden Cinquefoil.*
Lin. spec. 712. *syst.* 478. *Reich.* 2. 545. *amoen.* 4. 316. *Wither. arr. ed.* 3. 475. *Smith, brit.* 549. *engl. bot. t.* 561. *Fl. dan. t.* 114. *Jacqu. vind.* 245. *Krock. silef. n.* 798. *Villars dauph.* 3. 565.

Fragaria caule reclinato, fol. quinis ſerratis. *Hall. helv. n.* 1122. *t.* 21.

F. aurea. *Crantz, austr.* 77. *n.* 9.

Pentaphyllum alpinum ſplendens aureo flore. *Baub. hist.* 2. 398. *Raii hist.* 612.

P. incanum repens alpinum. *Park. theat.* 398. *n.* 2.

Quinquefolium minus repens alpinum aureum. *Baub. pin.* 325.

Q. minus flore aureo. *Ger. emac.* 990.

Root-leaves quinate obovate gash-serrate hairy submembranaceous, stem-leaves ternate, stem almost upright.

18. Potentilla verna. *Spring Cinquefoil.*
Lin. spec. 712. *syst.* 478. *Reich.* 2. 544. *fl. suec. n.* 455. *lapp. n.* 212. *hort. cliff.* 194. *Hudf. angl.* 224. *Wither. arr. ed.* 3. 475. *Smith, brit.* 550. *engl. bot. t.* 37. *Lightf. scot.* 270. *Relh. cant. n.* 375. *Dickſ. hort. sicc.* 13. 19. *Reyg. ged.* 1. 133. *Pallas, it.* 1. 147. *Scop. carn. n.* 621. *Pollich pal. n.* 497. *Krock. silef. n.* 799. *t.* 11. *Villars dauph.* 3. 564. *Ger. prov.* 468. *n.* 7. *Allion. pedem. n.* 481. *t.* 24. *f.* 2. *Thunb. jap.* 219. *Kniph. cent.* 8. *n.* 78.

Fragaria caule decumbente, fol. quinatis ſerratis ſubhirſutis. *Hall. helv. n.* 1119.

F. verna. *Crantz, austr.* 2. 12. *t.* 1. *f.* 1.

Quinquefolium minus repens luteum. *Baub. pin.* 325. *Dalech.* 1264. *Tournef. inst.* 297.

Q. vernum minus. *Schwenkf.* 174. *Tabern.* 156. *ic.* 123.

Quinquefolii quarti ſecunda ſpecies. *Clus. hist.* 2. 106.

Pentaphyllum parvum hirsutum. *Baub. hist.* 2. 398. *a.* 1. *Raii hist.* 612. *syn.* 255.

P. minus repens lanuginoſum. *Park. theat.* 399.

P. incanum. *Ger. emac.* 988. 8.

Root-leaves quinate wedge-shaped serrate marked with lines ciliate subcoriaceous, stem-leaves ternate, stem declined.

19. Potentilla aſtracanica. *Aſtrachan Cinquefoil.*
Lin. syst. 478. *Jacq. icon. rar.*

Root-leaves and lowest stem-leaves quinate, stems villose procumbent at the base dichotomous.

20. Potentilla canadenſis. *Canadian Cinquefoil.*
Lin. spec. 713. *Reich.* 2. 545.

Quinquefolium canadenſe humilius. *Mor. hist.* 2. 188.

Leaves quinate villose, stem ascending hirsute.

21. Potentilla alba. *White Cinquefoil.*
Lin. spec. 713. *syst.* 478. *Reich.* 2. 546. *mant.* 400. *hort. cliff.* 194. *Hudf. angl.* 224. *Wither. arr. ed.* 3. 474. *Smith, brit.* 551. *Jacqu. austr.* 2. 10. *t.* 115. *Krock. silef. n.* 801. *Villars dauph.* 3. 573. *Ger. prov.* 469. *n.* 8. *Kniph. cent.* 8. *n.* 77.

P. nitida. *Scop. carn. n.* 624.

Fragaria alba. *Crantz, austr.* 82. *n.* 2.

Quinquefolium album. *Hall. it. helv.* 70. *Dalech.* 1265. *Camer. epit.* 761.

Q. alb. minus, & alb. majus alterum. *Baub. pin.* 325. *Tournef. inst.* 297. *Raii hist.* 614.

Q. Tragi, *hist.* 507.

Q. ſylvaticum. *Schwenk.* 174. *Tabern.* 121.

Q. majus candidum. *Fuchſ. hist.* 623. *ic.* 357.

Q. ſylvaticum majus flore albo. *Ger.* 839. *emac.* 989. 10.

Pentaphyllum album. *Baub. hist.* 2. 598. *d.*

P. majus alterum album. *Park. theat.* 396. 2.

P. majus

P. majus flore albo. *Cluſ. hiſt.* 2. 105. 1. *Mor. hiſt. ſ.* 2. *t.* 19. *f.* 6.

Leaves quinate ſilky underneath converging-ſerrate at the tip, ſtems filiform procumbent, receptacles very hirſute.]

22. Potentilla cauleſcens. *Alpine Cinquefoil.*
Lin. ſpec. 713. *Syſt.* 478. *Reich.* 2. 546. *amoen.* 4. 317. *Jacqu. auſtr.* 3. 11. *t.* 220. *vind.* 246. *Krock. ſilef. n.* 802. *Villars dauph.* 3. 572. *Allion. pedem. n.* 1482.

Quinquefolium album majus. *Bauh. prodr.* 139.—cauleſcens. *pin.* 325. *Hall. opuſc.* 263. *n.* 50. 47.

Q. 2 minus albo flore. *Cluſ. hiſt.* 2. 105.

Q. majus albo flore. *Schwenk.* 1. 173.

Leaves quinate converging-ſerrate at the tip, ſtems many-flowered decumbent, receptacles hirſute, petals oblong.

[23. Potentilla cluſiana. *Cluſius's Cinquefoil.*
Lin. Syſt. 478. *Jacqu. auſtr.* 2. *t.* 116.

Leaves quinate converging-ſerrate at the tip, ſtems many-flowered decumbent, receptacles hirſute, petals roundiſh.

24. Potentilla nitida. *Shining Cinquefoil.*
Lin. ſpec. 714. *Syſt.* 478. *Reich.* 2. 546. *mant.* 400. *amoen.* 4. 316. *Jacqu. auſtr.* 5. *app. t.* 25. *Villars dauph.* 3. 574.—P. ſubacaulis. *Scop. carn. n.* 627. *ſec. Villars.*

Heptaphyllum argenteum alpinum trifoliatum ſabaudum. *Bocc. muſ.* 2. 20. *t.* 9.

Trifolium argenteum alpinum. *Ponæ bald.* 222. *Raii hiſt.* 615.—perſici flore. *Bauh. pin.* 328.

Comaroides alpina argentea perſici flore. *Segu. ver.* 1. 497.

Pentaphyllum argenteum alpinum flore albo—& trifolium argent. alp. Ponæ. *Raii hiſt.* 614 & 615. *ſec. Villars.*

Leaves ſubternate tomentoſe converging-three-toothed, ſtems one-flowered, receptacles woolly.

25. Potentilla valderia.
Lin. ſpec. 714. *Reich.* 2. 547. *Allion. pedem. n.* 1484. *t.* 24. *f.* 1. *Villars dauph.* 3. 572.

Leaves ſeptenate obovate ſerrate tomentoſe, ſtem erect, petals ſhorter than the calyx, receptacles woolly.

26. Potentilla reptans. *Common creeping Cinquefoil.*
Lin. ſpec. 714. *Reich.* 2. 547. *mat. med.* 131. *Woodv. med. bot.* 160. *t.* 59. *Hudſ. angl.* 224. *Wither. arr. ed.* 3. 474. *Smith, brit.* 551. *Curt. lond.* 1. *t.* 37. *Lightf. ſcot.* 271. *Relh. cant. n.* 376. *Sibth. oxon. n.* 466. *Fl. dan. t.* 1164. *Neck. gallob.* 222. *Pallas, it.* 1. 205. *Pollich pal. n.* 499. *Scop. carn. n.* 622. *Krock. ſilef. n.* 803. *Villars dauph.* 3. 568. *Allion. pedem. n.* 1485. *Blackw. t.* 454. *Ludw. eſſ. t.* 116. *Knipb. cent.* 7. *n.* 73. *Regn. bot.*

Fragaria fol. quinatis ſerratis, petiolis unifloris, caule reptante. *Hall. helv. n.* 1118.

F. Pentaphyllum. *Crantz, auſtr.* 80.

Quinquefolium. *Matth.* 1018. *Camer. epit.* 759.

Q. vulgare. *Ger.* 836. 1. *emac.* 987. 1.

Q. maj. *Dod. pempt.* 116. 1.—luteum. *Fuchſ. hiſt.* 624. *Dalech.* 1264.

Q. maj. repens. *Bauh. pin.* 325. *Tournef. inſt.* 297.

Pentaphyllum ſ. Quinquefolium vulgare repens. *Bauh. hiſt.* 2. 397. *Mor. hiſt. ſ.* 2. *t.* 19. *f.* 7.

P. vulgatiſſimum. *Park. theat.* 399. 1. *Raii hiſt.* 611. *ſyn.* 255. *Petiv. brit. t.* 41. *f.* 3.

Leaves quinate obovate ſerrate, ſtem creeping, peduncles one-flowered.]

*** *With ternate leaves.*

27. Potentilla monſpelienſis. *Montpelier Cinquefoil.*
Lin. ſpec. 714. *Reich.* 2. 547. *hort. upſ.* 134.

Pentaphylloides majus erectum, flore luteo. *Mor. hiſt.* 2. 193. *ſ.* 2. *t.* 20. *f.* 2.

P. fragariæ folio. *Magn. monſp.* 304.

Fragaria ſterilis alpina cauleſcens. *Buerh. lugdb.* 1. 42.

Leaves ternate, ſtem branched erect, peduncles ſpringing out above the joints.

[28. Potentilla norvegica. *Norwegian Cinquefoil.*
Lin. ſpec. 715. *Syſt.* 479. *Reich.* 2. 548. *fl. lapp. n.* 211. *ſuec. n.* 457. *Fl. dan. t.* 171. *Retz. obſ.* 1. 20. *Krock. ſilef. n.* 804.

Pentaphyllum norwegicum. *Gærtn. fruct.* 1. 349.

Quinquefolium hirſutum luteum paucioribus laciniis. *Loeſel. pruſſ.* 218. *t.* 70.

Fragaria fol. ternatis hirſutis, caulinis tripartitis, ſtipulis ovato-lanceolatis. *Hall. helv. n.* 1115.

Leaves ternate, ſtem dichotomous, peduncles axillary.

29. Potentilla tridentata. *Triſid-leaved Cinquefoil.*
Ait. kew. 2. 216. *t.* 9. *Vahl ſymb.* 2. 59. *Fl. dan. t.* 799.

Leaves ternate wedge-ſhaped triſid at the tip.

30. Potentilla nivea. *Snow-white Cinquefoil.*
Lin. ſpec. 715. *Syſt.* 479. *Reich.* 2. 548. *fl. ſuec. n.* 458. *Gunn. norv. n.* 512. *t.* 3. *f.* 1. *Gmel. ſib.* 3. 183. *t.* 36. *f.* 1. *Hall. goett.* 2. 108.

Fragaria ſterilis folio ſubtus argenteo. *Amm. ruth.* 111.

Leaves ternate gaſhed tomentoſe underneath, ſtem aſcending.]

31. Potentilla grandiflora. *Great-flowered Cinquefoil.*
Lin. ſpec. 715. *Syſt.* 479. *Reich.* 2. 548. *Gmel. ſib.* 3. 183. *n.* 32. *t.* 35. *f.* 1, 2. *Villars dauph.* 3. 562. *Ger. prov.* 469. *n.* 10. *Curt. magaz. t.* 75.

Fragaria fol. tern. ſericeis, caule declinato, petalis calycem ſuperantibus. *Hall. helv. n.* 1114. *t.* 21.

F. ſterilis ampliſſimo folio & flore, petalis cordatis. *Vail. par.* 55. *t.* 10. *f.* 1.

F. ſter. alpina anguſtifolia. *Magn. hort.* 80. *t.* 80. *Tournef. inſt.* 296.

F. helvetica nana. *Park. theat.* 757. 3. *t.* 758. 3.

Trifolium fragariæ foliis luteo flore Berardi. *Juncq. hort.* 131. *Raii hiſt.* 610.

Pentaphylloides fragariæ folio. *Mor. prælud.* 154. 292.

Leaves ternate toothed ſomewhat hairy on both ſides, ſtem decumbent longer than the leaves.

[32. Potentilla ſubacaulis. *Stemleſs Cinquefoil.*
Lin. ſpec. 715. *Syſt.* 479. *Reich.* 2. 549. *Gmel. ſib.* 3. 183. *n.* 34. *t.* 36. *f.* 2. *Villars dauph.* 3. 562. *Thunb. jap.* 219.

Fragaria ſterilis molli lanugine pubeſcens. *Amm. ruth.* 84. 110.

F. ſter. ſylveſtris ſericea ſ. incana. *Mor. hiſt.* 2. 187.

F. affinis ſeric. incana. *Bauh. pin.* 327. *prodr.* 139.

Leaves ternate toothed tomentoſe on both ſides, ſcape decumbent.

DESCRIPTIONS, *&c.*

Theſe are moſtly perennial herbaceous plants, the firſt is ſhrubby, and one or two ſpecies are ſaid to be annual. The leaves are unequally pinnate in ſome, (Pentaphylloides, *Tourn.*) digitate in others, (Quinquefolium, *Tournef.*) and in a third ſet ternate, as in Fragaria; hence Linneus's three ſubordinate diviſions. Stipules like wings faſtened to the bottom of the petiole. Flowers commonly in terminating corymbs *.

Tournefort and others ſeparated this genus too much. Haller has thruſt too many genera into it. Linneus had no objection to *Termentilla* being joined to *Potentilla*: but Haller has inſerted *Frogaria*, *Potentilla*, *Tormentilla*, *Sibbaldia*, *Comarum*, and called the whole *Fragaria*.

*1. The whole plant is ſet with fine ſilvery hairs. Stems erect, clothed with a brown bark which cracks longitudinally, branching very much, about three feet (or in gardens four feet) high, frequently reddiſh. Leaves alternate, covering the branches, petioled, quinate-pinnate, or conſiſting of five rarely ſeven oblong leaflets, ſomewhat rolled back, quite entire, hairy underneath, the upper ones ternate. Dr. Withering ſays, the leaves can hardly be called pinnate, conſiſting of two pairs ſet croſs-wiſe, riſing from the ſame point, with a terminating one divided down to the baſe into three open ſegments; and that the leaflets are linear-lanceolate, turned back at the edges, dark green above, pale underneath. Loureiro affirms that they are truly pinnate, though repreſented as digitate in Amman's figure. Stipules embracing. Flowers terminating, ſolitary, peduncled, of a bright yellow or golden colour and very ornamental; petals roundiſh or obcordate. The five outer leaves of the calyx are oval, ſpreading and remarkably large †.

Native of Oeland, England, Siberia, China; between the rivers Delaware and New York in North

* Juſſieu. † Smith and Withering.

America.

America. In England this ſhrub was firſt obſerved by Johnſon of Brignal near Greta-bridge in Yorkſhire, on the ſouth bank of the Tees below Thorp, and below Eggleſton Abbey in Yorkſhire. He ſhowed it to Mr. Ray, and communicated the ample deſcription which is given in his Hiſtory of plants. Mr. Lawſon afterwards obſerved thouſands of theſe plants by Mickle Force, in Teeſdale. Mr. Robſon, of Darlington, informs us, that it ſtill grows about the river Tees plentifully. It flowers with us in June and July.

The beautiful appearance of its numerous flowers has gained this ſhrub admittance into gardens. Beſoms are made of it. Kine, horſes, ſheep and goats are ſaid to eat it, and ſwine to refuſe it [q].

2. Root branched, outwardly dark brown or whitiſh, furniſhed with ſmall fibres, and penetrating deep. Stems or rather runners extending to a conſiderable length, round, jointed, reddiſh, downy, creeping. Leaves ſilvery-white underneath, petioled: leaflets ſeſſile, oppoſite, oval, gaſh-ſerrate, blunt, the lower ones gradually ſmaller: the root-leaves on longer petioles and procumbent. Petioles villoſe, flat on the upper ſide, forming a ſheath at the baſe, which is hollow, membranous, tender, downy, running down each ſide of the petiole. Sheaths of the ſtem or rather ſtipules of the runners ſolitary at the joints, bifid and often multifid at top, bearing an oblong indented ſmall leaf. Peduncles axillary, ſolitary, round, villoſe, upright. Calyx ſilky, the five inner ſegments entire, ſharpiſh, yellowiſh at the baſe; the five outer blunt iſh and jagged. Petals yellow, obtuſe, twice the length of the calyx. Receptacle hairy. Germs ovate, obtuſe, white, ſurrounded by theſe hairs: ſtyles yellowiſh, ſhorter than the ſtamens: ſtigmas truncate.

Few plants render themſelves more conſpicuous by the whiteneſs of their leaves than this, indeed its old name Argentina was derived from this circumſtance; it muſt be remarked however that in this particular it is ſubject to much variation, the leaves being ſometimes ſilvery on both ſides, and ſometimes entirely green, but it is moſt commonly found with the upper ſide of the leaves green, and the under ſide ſilvery; the more clayey the ſoil, the whiter the leaves are generally found to be.

It is a plant which thrives moſt in moiſt ſituations, eſpecially in clay where the water is apt to ſtagnate, and is common by way ſides; flowering from june to ſeptember [r.] Mr. Miller ſays it is a ſure mark of the ſterility of the ſoil.

[Ray informs us, that about Settle in Yorkſhire they call the roots *Moors*, and that during the winter the boys dig them up and eat them: he adds, that he was a witneſs to ſwine devouring them greedily, and that an apothecary of that neighbourhood aſſured him that they had a ſweet taſte, like Parſneps.

Theſe roots are frequently eaten by the common people in Scotland, either roaſted or boiled. In the iſlands of Tirey and Col they are much eſteemed, as anſwering in ſome meaſure the purpoſes of bread; they have been known to ſupport the inhabitants for months together during a ſcarcity of other proviſions. In their barren and impoveriſhed ſoils, and in ſeaſons wherein their crops ſucceed the worſt, the roots of the Moor-graſs never fail to afford a ſeaſonable relief to them [s].

The leaves are mildly aſtringent; dried and powdered they have been given with ſucceſs in agues; the uſual doſe is a table-ſpoonful of the powder, every three hours, between the fits. Kine, horſes, goats and ſwine are ſaid to eat it; and ſheep to refuſe it [t].

It ſhould ſeem by the names *Anſerina*, *Gooſe-graſs*, and *Gooſe Tanſey*, that geeſe are fond of it. The leaves reſemble thoſe of Tanſey very much; hence it is alſo called *Wild Tanſey*.

3. The habit of the leaves is that of the preceding, although they are very ſmall: but it has the ſtem and fructifications of the *verna*. The root is clothed with black ſcales which are the remains of leaves. The leaves conſiſt of about thirteen ovate ſilky leaflets, which are pectinate-pinnatifid. Peduncles hairy. Stems twice or thrice the length of the leaves, having no runners, and not creeping, furniſhed in the middle with a ſingle ſmaller and more divaricating leaf, round, with a few yellow alternate peduncled flowers at top.

Native of Siberia [u]. Introduced in 1780 by Peter Simon Pallas, M. D. [x]

4. The habit ſhows much affinity with *P. argentea*. The leaves conſiſt of ſeven leaflets. The ſegments are linear or lanceolate, five or at moſt ſeven, alternate except in the odd leaflet where they are oppoſite, gaping from each other or remote at the tip, tomentoſe underneath [y].

Gmelin and Pallas refer n. 116 of Ammann and the ſynonym from Buxbaum to *P. biſurca*. Pallas ſays, that Linneus's deſcription given above is a variety of *P. ſericea*.

Native of Siberia—Linneus ſays of Tartary alſo, Cappadocia and Switzerland; but he has probably mixed two plants together. Cultivated in 1759, by Mr. Miller [z].

5. This has the appearance of *Fragaria ſterilis*. Root ſomewhat tuberous. Leaves ſilky on hairy petioles, with three, five or ſeven leaflets, which are ovate, oppoſite, ſerrate, leſſening as they approach the baſe. Runners decumbent [a].

Willich refers Haller's name to *P. ſtipularis* [b].

Native of Siberia. Introduced in 1773, by Chevalier Murray [c].

6. Whole plant hairy. Stem forked above. Leaves, ſerratures, and ſegments of the calyx tipped with ſcarlet or purple [d].

Stem almoſt a foot high, branched, leafy, ſtriated. Leaflets ſubovate, blunt, gaſh-ſerrate, veined, hairy but not hoary, five or ſeven in the root-leaves and lower ſtem-leaves, three only in the upper ones. Radical ſtipules linear, acute; roundiſh-rhombed to the ſtem-leaves. Peduncles ſubpanicled, one-flowered, villoſe. Calyx villoſe at the baſe. Petals obcordate, white. Styles reddiſh. Seeds not wrinkled, but of an even ſurface; hence perhaps it ſhould be referred to *Fragaria*, to which it is allied in appearance [e].

Native of ſeveral parts of Europe and Siberia, on ſhady alpine rocks. With us it has occurred only in Wales, on the ſides of Craig Wreidhin mountain in Montgomeryſhire, where it was found by Lhwd [f].

7. Root fuſiform, little branched. Stem almoſt upright, round, tomentoſe, branched, a foot high, dichotomous, at the extremities very ſlender, almoſt filiform, leafy. Lower leaves pinnate, gaſh-ſerrate, with two, three or four pairs of leaflets, with the end one trifid or bifid, wedge-form, ſmooth, on ſhort petioles, which are alternate, winged and placed on ſmall ſtipules; the number and ſize of the leaflets are ſucceſſively diminiſhed, ſo that at the extremities ſegments remain which are very ſhort, ſolitary, petioled, bifid or more frequently trifid. Flowers come out ſingly from the axils alternately almoſt over the whole ſtem, on peduncles half an inch long, very ſlender, villoſe, reflexed when the flower goes off. Calyx whitiſh green, ſomewhat hirſute, with the ſegments almoſt equal. Petals ſmall, brimſtone coloured, equal to the calyx [g].

Native of Siberia and Sileſia. Introduced in 1773, by John Earl of Bute [h].

8. Found by Tournefort in Armenia, among rocks. Cultivated in 1758, by Mr. Miller. It flowers from june to auguſt [i].

9. This has the habit of *P. recta*. Root-leaves pinnate; leaflets oblong, blunt iſh, ſerrate-toothed, marked with lines, ſoft, villoſe; the three outer connate and larger; the inner ſmaller and alternate: ſtem-leaves ſubdigitate, in ſevens, as in *P. recta*, but pinnatifid. Petals ſcarcely larger than the calyx [k].

Native of North America. Introduced in 1773, by John Earl of Bute. It flowers from june to auguſt [l].

[q] Withering. [r] Curtis. [s] Lightfoot. [t] Withering.

[u] Linn. ſpec. [x] Hort. kew. [y] Linn. ſpec. [z] Hort. kew. [a] Linn. ſpec. [b] Reichard. [c] Hort. kew. [d] Withering. [e] Smith. angl. [f] Ray, ſyn. [g] Krocker. [h] Hort. kew. [i] Idem. [k] Linn. mant. [l] Hort. kew.

10. Root ſmall, white within, covered on the outſide with brown ſcales. Stem a foot or more in length, procumbent, dichotomous, leafy, round, having a few hairs on it: branches oppoſite. Leaves alternate except the uppermoſt which are conjugate, two inches in length, and near one inch in breadth, on long petioles: pairs of leaflets four or five, with the odd one more cloven, all oblong-ovate or lanceolate, gaſh-ſerrate, ſeſſile, white-tomentoſe on the back, near half an inch long, and three lines wide. Rachis pubeſcent, grooved above. Petioles ſlightly hairy, placed on embracing, ovate, acute ſtipules, ciliate at the edge. Peduncles from the forkings and tops of the branches, alternate, ſolitary, round, pubeſcent, four lines in length, erect but hanging down after the flower is gone off. Flowers little more than three lines in diameter. Calyx ſlightly pubeſcent: ſegments ovate, unequal, green not white. Petals yellow, obcordate, blunt, much ſmaller than the ſegments of the calyx. Receptacle pappoſe [m].

Native of Germany, Auſtria and Siberia. Introduced in 1773, by Chevalier Murray. It flowers in july [n].

11. Stem about a foot high, rigid, covered with a pile rather than hairs, reddiſh, at top corymbed, or dividing into ſeveral peduncles forming a ſort of umbel. Leaves large, having each five or ſeven oblong villoſe leaflets, frequently of a ruſſet colour, with ten or twelve blunt teeth; they are ſtiffer, longer and wider than in *P. hirta*, and when old are almoſt naked: the lower ones are petioled, the upper ones ſeſſile, finally becoming linear and ſtipular. The flowers are abundant on the top of the ſtem, erect on ſolitary peduncles, altogether making the ſtem panicled. Calyx tomentoſe, whitiſh, with almoſt equal ſegments. Petals large, emarginate, of a golden colour. Receptacle pappoſe [o].

Native of Germany and the South of Europe. Cultivated in 1648, in the botanic garden at Oxford. It flowers in june and july [p].

12. Stems many, woolly, round, hard, half erect, from a ſpan to a foot or more in height. Leaves alternate, petioled, the upper ſide green, the lower covered with ſnow-white cottony down, as are the calyx and upper part of the ſtem, which laſt is dichotomous, and aſſumes the form of a corymb at top. The lower petioles are long, but gradually ſhorten upwards. The floral leaves have one or three linear entire ſegments. The flowers are numerous. The calyx downy, as long as the corolla: the petals ſmall, bright yellow or golden coloured, and ſoon ſhedding. The flowers appear in ſucceſſion from june to autumn. Seeds ſmoothiſh. No other Britiſh Potentilla can be confounded with this. Its form and habit much reſemble the *Tormentilla*, except in being far more woody. The pure whiteneſs of the leaves, like that of the white Poplar, renders this plant conſpicuous whenever it is diſturbed by wind or any other accident [q].

Native of Europe. It was reckoned by Ray among our rarer plants, but is found in many parts of England on a gravelly ſoil. It is ſaid to indicate clay under the ſurface [r].

In Cambridgeſhire it grows among furze, near Hilderſham, Gamlingay and White-wood. In Oxfordſhire on Henley-park Hill. In Bedfordſhire at Ampthill, Aſpley, and Rowney Warren. Near Harefield in Middleſex. On Blackheath, Kent. Holt Caſtle in Worceſterſhire. Among furze on the heaths and on the walls in Purbeck, Dorſetſhire. About Harrowgate in Yorkſhire it is plentiful. Near Snenton in Nottinghamſhire In the den of Bethaick near Perth in Scotland. It flowers from june to ſeptember.

13. This is a middle plant between *P. argentea* and *norvegica*, whence its trivial name; it would indeed be the latter, if the root were not perennial, and the leaves next the foot quinate. But the lower leaves are alternate, the upper oppoſite: leaflets obovate, gaſh-ſerrate, not tomentoſe, with nine ſerratures: the ſtem-leaves are ternate, oppoſite to the panicle [s].

Monſ. Villars ſays that it approaches nearer to the *rectà* than any other, but that the ſpecies is well marked. The reddiſh villoſe ſtems a foot high, are much inclined, and branch out from the very bottom: the peduncles then are ſtraight and inclined, ſome ſimple, others forked. The leaves at bottom are in ſevens; they are oblong, villoſe, unequal, with ſeven or nine deep indentations: the ſtem-leaves are almoſt oppoſite, in threes, ſpringing between two large wide ſtipules: the uppermoſt are ſimple or trifid, and confounded with their ſtipules. Petals yellow, middle-ſized, emarginate. The diviſions of the calyx are very villoſe; and the receptacle is a little ſo.—Haller has given Linnæus's *opaca* as a ſynonym, and ſays that his deſcription does not much differ from it; the *opaca* however has no farther ſimilitude to this ſpecies than that of the genus. The *opaca* has the ſame relation to *verna*, that *intermedia* has to *rectà*, but it is not ſtraight, and the branches are filiform.

Native of Switzerland and Dauphiné.

14. Root-leaves five or ſeven; ſtem-leaves five, all alternate, ſublinear, with three or five teeth. Stem, peduncles and calyxes very hairy [t].

Monſ. Villars gives two ſpecies much reſembling each other, *hirta* and *piloſa*; both have ſtraight ſtiff ſtems, long hairs and deep indentations on the leaves. This is a foot high, and has many ſtems; it is not viſcid; it is rougher, ſtraighter and harder than the *piloſa*. It has the port of *P. argentea*, but is not at all white or ſilvery, only duſky and rough with long diſtinct hairs. *P. piloſa* is ſmaller than the *hirta*. Stems villoſe, about half a foot high; having at top three or four yellow, middle-ſized flowers, with emarginate petals. Leaves quinate, villoſe, deeply cut at the end, unequal, ſo that the lower or lateral ones are ſcarcely half the length of the middle ones, they have all long, weak, diſtinct, and very apparent hairs. The whole plant is a little viſcid. The *heptaphylla* of Miller, *n.* 9. ſeems to be the *hirta*.

Native of the South of France, the Pyrenees and Sileſia. Cultivated in 1725 in the botanic garden at Cheliſea. It flowers from may to ſeptember [u].

15. Stem aſcending, filiform, even, divided at the tip. Stipules embracing, ſolitary, emarginate. Leaflets eight or nine, linear-lanceolate, ſubſerrate, ſmooth, hanging from the notch of the ſtipule without any petiole.—Native of Siberia [v].

16. Stems ſhort, branched from the bottom, decumbent, round, ſoft, tomentoſe, reddiſh, forming a tuft. Leaflets ſeſſile, obovate, ſoft, tomentoſe, hoary: petioles ſheathing, channelled above, villoſe, an inch and half in length. Stipules ſoft, tomentoſe. Floral leaves ſeſſile, trifid and jagged. Flowers in a ſort of panicle at the ends of the branches. Peduncles one-flowered, leſs than half an inch in length. Petals yellow, blunt [x].

Villars deſcribes his *opaca* as having the port of the *verna*, but larger in all its parts. Leaves wider, of an aſh-coloured or ruſſet green on both ſides; like thoſe of the *ſubacaulis* lanuginous, blunt, with regular rounded indentations. Corolla ſmall, ſomewhat notched, a little longer than the calyx, pale yellow without any deeper ſtain. Segments of the calyx blunt. This, with the ſhort cloſe pile that covers the plant, independant of the colour, ſize, &c. diſtinguiſhes it at firſt ſight from *P. verna*.

Native of Germany, and ſome parts of the South of Europe.

17. Stems from three to ſix or ſeven inches high, nearly erect, branched, leafy, hairy. Leaves thin and almoſt membranous, of a lighter green than in *P. verna*, with foot-ſtalks more than twice as long: leaflets five, a little ſhining, ſomewhat hairy, paler beneath, and deeply ſerrate towards the top: root-leaves on very long petioles, with blunt leaflets; ſtem-leaves ſubſeſſile; uppermoſt moſtly oppoſite. Stipules lanceolate, entire. Peduncles axillary and terminating,

[m] Pollich and Krocker.
[n] Krocker and Villars.
[o] Smith, brit. and Engl. bot. and Robſon in Withering.
[p] Engl. bot. and Roſæ, bot. 382.
[q] Hort. kew.
[r] Hort. kew.
[s] Linn. mant.
[t] Linn. ſyſt.
[u] Linn. ſpec.
[v] Hort. kew.
[x] Pollich.

ſolitary, very long, one-flowered, hairy, erect. Calyx hairy, its ſegments all nearly equal in length, but alternately narrower. Petals obcordate, of a full yellow and almoſt orange colour. Seeds longitudinally wrinkled, which Gærtner conſiders as a diſtinguiſhing character of this genus [a].

Native of the mountains of Scotland, Denmark, Switzerland, Auſtria, Sileſia and Dauphiné. It was firſt introduced as a Britiſh plant in Dr. Withering's new edition of his Arrangement, on the ſuppoſition of its being *Pentaphyllum parvum hirſutum* of Ray's Synopſis, referred by Hudſon to *P. opaca* of Linneus. But Mr. Curtis is moſt probably right in referring Ray's plant to the *verna*. The real *aurea* was gathered in 1793 on Ben Lawers and other mountains of Breadalbane, by Mr. John Mackay. It flowers in july [b]. It was cultivated by Mr. Miller in 1739; not being then known to be a native of England.

Crantz, Allioni and Villars have a ſpecies which they name *rubens*, from the redneſs of the ſtalks. Reichard refers Crantz's plant, with a mark of doubt, to Linneus's *opaca*: it has the lower leaves quinate, the upper ternate, and deep-yellow flowers without any ſpots. Allioni has deſcribed it at length, and refers to Villars; who ſays that it may be the *rubens* of Crantz; that the ſtems, leaves and flowers exactly hold a middle place between *P. aurea* and *intermedia*; that it has the ſize of the former, with fewer flowers, rougher blunt leaves, and a ſmaller corolla of a deep yellow colour; but without a golden ſtripe at the baſe of each petal, which he and Crantz aſſign to the *aurea*. Our *aurea* has it not, and therefore probably is the ſame with the *rubens* of theſe authors; if the *rubens* be really different from the *aurea*.

Monſ. Villars has another ſpecies, which he names *inclinata*, and figures in his forty-fifth plate. The whole plant is hairy. The ſtem is very diſtinct and riſing, naked in part, bifid at top, where there are two ſmall ternate leaves. The lower leaves have five or ſix oblong leaflets, ſomewhat aſh-coloured, with blunt teeth on the edge; the ſtem-leaves are ternate and oblong. Petals yellow, the length of the calyx, truncate and not cordate.

18. The whole plant is beſet with ſoft ſhining ſilky hairs. Stems almoſt proſtrate, branched, leafy, ſpreading very wide in a circular direction among graſs. As the ſeaſon advances they turn red, as well as the leaves; which colour, intermixed with the bright yellow of the flowers, makes a ſtriking contraſt. Leaves rigid, ſomewhat coriaceous, ſmoothiſh, marked with lines, ciliate along the edge and keel: root leaves on longer petioles, quinate, with the leaflets wedge-ſhaped and ſomewhat retuſe; ſtem-leaves ternate, trifid, ſubſeſſile; upper ones ſimple and often entire. Stipules in pairs, lanceolate, embracing. Peduncles ſubterminating, (or terminating and axillary) one-flowered, long, ſlender, upright. Calyx tomentoſe and hairy, with the ſegments not very unequal, half as long as the corolla. Petals emarginate or obcordate, of a golden colour. Seeds leſs wrinkled than in the preceding [c].

Native of moſt parts of Europe, in dry elevated paſtures.

Thomas Williſell brought it to Ray from Kippax, near Pontefract in Yorkſhire; the Rev. Mr. Wood has ſince found it there. It has occurred in ſeveral other places of Yorkſhire and Lancaſhire, as Preſton, Giggleſwick, near Carr End Wenſleydale, &c. Sir Thomas Gery Cullum, Bart. obſerved it many years ſince near Bury, in Suffolk. It grows alſo on Gogmagoghhills near Cambridge. Mr. Pennant found it in Gloggaeth, Caernarvonſhire. In the King's Park, Edinburgh, near Arthur's ſeat, by Dr. Hope; and on Braid-hills and Craig Lochart, by Mr. Brown; and in ſeveral other parts of Scotland.

Haller obſerves, that it is a very variable ſpecies, and approaches ſo nearly to many others, that its characters and ſynonyms are ſcarcely to be made out [d].

Villars has three ſpecies, which he allows may poſſibly be varieties of the verna:

1. P. ſerotina; the leaves of which are a little larger and more cut; the ſtems longer; the flowers yellow without any ſtripe at the claw.

2. P. filiformis. Stems proſtrate, red, villoſe; leaflets five or ſeven, oblong, widening at the end, unequal, ſerrate; petals obcordate, deep yellow, a little larger than the calyx.

3. P. rotundifolia. Leaves ſmooth, wide, as are alſo the petals, inſomuch that they are often concealed one under the other. The leaflets have only four or five diviſions, which are ſmooth and rounded; whereas the ſecond has from nine to eleven diviſions of oblong leaflets, villoſe or rough-haired.

Villars has alſo another ſpecies, which he names *frigida*. It is a ſmall plant, with the ſtems creeping. The leaves reſemble thoſe of the *verna*, but they are ternate, villoſe, with ſharp deep indentures; the petals are narrow, rounded at the end; the diviſions of the calyx are large in proportion to the plant, they are equal, blunt, and nearly as long as the petals. The whole plant becomes red in autumn.

19. The ſeeds of this were received by Jacquin from Aſtracan. The firſt year they produced only radical leaves, but in the ſucceeding ones ſeveral ſtems, which were annual, aſcendant, round, ſomewhat villoſe, and about a foot high, ſpreading into panicled peduncles: the alternate and loweſt radical and cauline leaves are quinate, footſtalked, rather hirſute, and at their origin are auriculated on each ſide by a lanceolate ſtipule: the leaflets are oblong, obtuſe, ſeſſile, and inciſo-ſerrated: the remaining cauline ones and thoſe of the branches are ternate, with unequal and incided leaflets: the higheſt towards the peduncles are oppoſite, ſeſſile, and trilobate; or rather theſe are trilobate ſtipules without leaves. The peduncles are one-flowered, and rather ſhort: the calyxes hirſute: the petals yellow: the anthers deep yellow or luteous.

20. This has the habit of *Fragaria*. Root-leaves quinate: leaflets obovate, acutely ſerrate, pubeſcent above, villoſe and ſilky-white underneath; the petioles very hirſute with white hairs. Stem a finger's length, branched, with few leaves on it. Corolla yellow. It reſembles *P. verna*, but the leaves are very hairy, finely ſerrate, roundiſh; and the ſtem is very hirſute.

Native of Canada [e].

21. Stems branched. Root-leaves on long petioles: leaflets lanceolate, bluntiſh, entire except towards the end, where there are five or ſeven ſerratures; they are ſlightly downy above, paler and more downy underneath, with the veins and edges white with a ſilky down. The petioles are alſo downy. Peduncles very long, ſlender, downy, one-flowered. Segments of the calyx acuminate, ſilky. Petals white, obcordate, as long as the calyx. Receptacle villoſe with long, cloſe briſtles. Seeds obſcurely wrinkled [f].

Native of the South of France, Germany, Switzerland, Auſtria, Carniola, Hungary. According to Hudſon, it was found in Wales by Mr. Haviland. Dr. Smith ſays, that he knows of no other authority.

22. The procumbent ſtem riſes ſometimes to three or four inches in height, bearing ſeveral white detached flowers, from the middle of which ſpring the hairs of the receptacles. The leaves are on long petioles; thoſe that come out in ſummer continue on all the winter, and accompany the ſtem during the year following. The whole plant becomes red with age. Each leaflet is villoſe, entire, oval, rounded, with three or four pointed, approximating indentures at the top [g].]

The leaves are on foot-ſtalks which ariſe from the root, and are very long; the leaflets are oblong, a little ſerrate at their ends, very hoary and ſilky on their under ſides, but green on their upper. Flowers on long ſlender peduncles, which ariſe immediately from the root; they are white and appear in may, but are ſeldom ſucceeded by ſeeds in England.

Native of Auſtria, [Switzerland, Sileſia, Dauphiné, Piedmont. Cultivated by Mr. Miller in 1759 [h].

23. This, according to Jacquin, is an elegant ſpecies,

[a] Smith, brit. and Engl. bot.
[b] Engl. bot.
[c] Smith, brit. and Woodw. in Withering.
[d] Engl. bot.
[e] Linn. ſpec.
[f] Smith. brit. and Woodward.
[g] Villars.
[h] Hort. kew.

growing

growing among the clefts of the Alpine rocks, the ſtems are numerous, and are commonly roughened by the remains of the loſt leaves: the principal ſtems are decumbent, the others upright: the flowering ſtems riſe on the ſides of the terminal leaves; and are ſimple, erect, pubeſcent, purple, annual, two or three inches high, and bear but few flowers: the leaves are of a pale green. The flowers are ſubcorymboſe, pedunculated, inodorous, and the calyx is in ſome hirſute and purple: the petals white and obtuſe: the filaments in ſome white; in others red. Jacquin thinks it truly diſtinct from the P. cauleſcens of Linneus [i].

Native of Auſtria. Allioni does not think it diſtinct from the *cauleſcens* of Linneus.

24. This ſpecies is very ſmall; the ſtems are only an inch or two in height, ſometimes upright, ſometimes decumbent, bearing but one flower, ſeldom two. Leaves ſmall and ſilvery, three or four rarely five together; they are ſhort, quite white, a little notched, with two or three ſharp teeth at the end. Corolla white, open, with the petals a little longer than the calyx, entire, narrow at the claw, widening ſuddenly, as in moſt of the *Arenarias*, and then oval. The flower is frequently reflex. Receptacle lanuginoſe [k].

Turre remarks that the leaves are ternate. Linneus ſays, that he has a ſpecimen or two with the lower leaves only quinate, and that the root-leaves are to be determined by culture [l].

Villars informs us, that on Mont Bovinant it is ternate, and at Colet in the way to Charmanſon conſtantly quinate, although the plants are not larger or in any wiſe different from the others.

Native of Monte Baldo, Dauphiné, Auſtria.

25. There are a few ternate leaves on the ſtem. Flowers dichotomous, corymbed, cluſtered. Petals white, ſhorter than the calyx [m].

Villars remarks that this ſpecies may eaſily be confounded with *cauleſcens* and *alba*: but *cauleſcens* is partly decumbent, *alba* is quite ſo, and this not at all. *Alba* has narrow leaves, in *cauleſcens* they are a little wider, and in this ſtill more ſo. The upright villoſe ſtem riſes to the height of ſix or eight inches, and branches at top, where it has ten or twelve flowers very cloſe together. The leaves in ſome degree reſemble thoſe of the Lupin, and are in ſevens; the leaflets are villoſe, duſky, rounded, and ſlightly toothed at the end; they are wide enough to touch one another, and even to conceal their margins. Flowers in tufts: petals white, narrow, diſtinct, oblong, little emarginate, almoſt always approaching to the piſtils, which are villoſe and lanuginoſe.

According to Allioni, the root is thick, red, tough, and divided. This throws out a great number of leaves on long petioles, and many ſtems that are almoſt upright or a little reclining. The leaves proceed from a wide ſtipule, and the petioles are hirſute: leaflets firm, ſilky-hoary, veined and nerved underneath, five, ſix or ſeven. Stems almoſt naked, with flowers in a corymb on the branches. Stem-leaves quinate, on ſhorter-hooked ſtipules. Leaves at the origin of the branches ternate. Petals very pale ſulphur or white. The whole plant is ſilky-hoary, with the ſtems and petioles evidently ſubhirſute.

Native of the mountains of Piedmont and Dauphiné.

26. Root fuſiform, with few fibres, penetrating deep, the ſize of the little finger, or even of the thumb when old, outwardly of a dark cheſtnut colour. Stems round, ſmooth, proſtrate, creeping, leafy. Leaves petioled, erect, quinate, (ſometimes ſeptenate, ſometimes ternate;) leaflets obovate-cuneate, hairy, unequal in ſize, ending in purpliſh points. The petioles come out in pairs from the joints of the ſtem at conſiderable diſtances. Stipules in pairs, compoſed of three ovate or ovate-lanceolate leaflets. Peduncles ſolitary, nearly upright, longer than the leaves, one-flowered. Calyx hairy. Petals of a golden colour [n].

Native of Europe, common in meadows, and by way ſides; flowering from june to ſeptember.

[i] Jacquin. [k] Villars. [l] Syſt. veg. [m] Linn. ſpec. [n] Curtis, Smith.

Tormentilla reptans has been thought by ſome a variety of this, but they are very different; this ſtriking root at every joint, that trailing, but never ſtriking root from the ſtem [o].

This plant is the *Pentaphyllum* of the London Pharmacopœia. The roots have a bitteriſh ſtyptic taſte. They were uſed by Hippocrates and Dioſcorides, and by the former particularly recommended for the cure of intermittents. Ray tells us that the peaſantry ſtill employ them with this intention. The medicinal quality is confined to the red cortical part of the root, and depends merely upon its aſtringent effects; it has therefore been chiefly preſcribed internally in diarrhœas and other fluxes, and externally in gargles for looſe teeth and ſpongy gums, and in aſtringent lotions: but its efficacy being much inferior to many other plants of this claſs, Cinquefoil is now rarely uſed. In large doſes however, it may be found no bad ſubſtitute for ſome of the other aſtringents [p].

The roots have been uſed for tanning leather. All our domeſtic quadrupeds will eat the leaves [q], and therefore it is no bad plant in paſtures.]

27. This is a perennial plant. The ſtalks grow erect, about a foot high; they are very hairy. Leaflets oblong, ſerrate. The peduncles come out above the joints of the ſtalk. The flowers are white and large: they come out in june; and the ſeeds ripen in autumn.

[Linneus obſerves, that the leaflets are ovate, bluntly and equally ſerrate. He marks it as annual, but it is not.

Native of the South of France. Cultivated by Mr. Miller, in 1759 [r].

28. Root annual, fibrous. Stems ſeveral, a foot high, at firſt erect, roundiſh, with ſpreading hairs. Leaves petioled, having ſpreading hairs ſcattered over both ſides, ſerrate-toothed: leaflets oblong, veined. Branches from the axils. The upper part of the ſtem is dichotomous, and the leaves there become oppoſite and ſubſeſſile. Peduncles naked, one-flowered from the diviſions. Petals yellow, entire; the ſtamens and piſtils are of the ſame colour, but the ſtigmas are blackiſh. Stipules half-cordate, gaſhed or toothed, eſpecially in the lower leaves [s].

Seeds, according to Gærtner, ſmall, ſubovate, above obliquely mucronate, compreſſed like a lens, marked with wrinkles downwards, diverging towards each edge of the ſeed, of a yellowiſh bay colour. Coats three: *outmoſt* coriaceous, wrinkled; *middle* cruſtaceous, ſmooth, thickiſh; *inmoſt* membranaceous, of a red ferruginous colour. The ſeeds are wrinkled in almoſt all the ſpecies.

Retzius remarks, that it puts forth the upper peduncles from the forkings of the branches, but the lower from the branch itſelf, at a diſtance from the axil.

Native of Norway, Sweden, Pruſſia, Sileſia, Switzerland, Canada, Siberia. Linneus ſays that it has migrated from Norway into Sweden.

29. Stem herbaceous, aſcending, quite ſimple, a ſpan high, with villoſe hairs thinly ſcattered over it. Leaves heaped at bottom, but only one or two on the ſtem: leaflets ſmooth, veinleſs, acute at the baſe, bluntly three-toothed at the top, almoſt equal only the ſide ones narrower. Floral leaves three-parted, ſeſſile, lanceolate at the baſe and in the middle of the peduncles. Petioles linear, channelled, the length of the leaflets. Stipules lanceolate. Peduncles bifid at top; peduncle at the fork leafleſs, one-flowered. Calycine leaflets lanceolate, hairy. Germs hairy [t].

Native of Newfoundland and Groenland. Introduced in 1766, by Benjamin Bewick, Eſq. It flowers in june [u].

30. This has the ſtructure of *P. verna*, or the leaves of *P. argentea*, but ternate and wider, more hirſute, and ſnow-white underneath. Corolla yellow. The Lapland plant has larger leaves, ſmoother on the upper ſurface than the Siberian [x].]

[o] Afzelius in Withering. [p] Woodville. [q] Curtis. [r] Hort. kew. [s] Linn. ſuec. [t] Vahl. [u] Hort. kew. [x] Linn. ſpec. and ſuec.

31. Root perennial. Stems trailing. Leaflets ovate, obtuſe, bluntly indented on their edges. Flowers larger than in the *monſpelienſis*, and the whole plant of a deeper green. It flowers in july, and the ſeeds ripen in autumn.

[Linnæus marks it as annual, but there is little doubt of its being perennial. He obſerves that the leaves are of the ſame colour on both ſides, not ſilvery underneath; and that the ſtems are a foot high, aſcending, and ruſeſcent.

Culture, ſays Mr. Curtis, is known to produce great alterations in the appearance of moſt plants, but particularly in thoſe which grow ſpontaneouſly in dry mountainous ſituations: this is ſtrikingly exemplified in this ſpecies of *Potentilla*, which becomes in every reſpect much larger, as well as much ſmoother than in its natural ſtate.

Native of Switzerland, Dauphiné, the Pyrenees and Siberia. Cultivated by Mr. Miller in 1768 [y].

32. Leaves wrinkled, coriaceous, wedge-ſhaped, blunt. Stipules wide, acute, hairy. Stem or ſcape decumbent, often longer than the leaves, two-flowered or one-flowered. Corolla very large, yellow: petals emarginate, paler yellow at the baſe. Stamens yellow [z].

Native of the South of France, Granada, Siberia, Japan.]

PROPAGATION AND CULTURE.

1. The beſt ſeaſon for tranſplanting the Shrubby Cinquefoil is october, that it may get new roots before the hard froſt ſets in; for as it grows naturally upon moiſt boggy land, when removed in the ſpring, if due care be not taken to water it in dry weather, it is apt to miſcarry; nor will this plant live in a dry hot ſoil, but in a ſhady ſituation and on a cool moiſt ſoil it will thrive exceedingly.

2 and 26. Are common weeds, increaſing much by roots or runners.

3, &c. Moſt of the other ſpecies are eaſily increaſed by ſeeds, or parting the roots, or both. Autumn is the time for ſowing, parting and tranſplanting.

6. Loves a moiſt ſoil and ſhady ſituation.

22. This may be increaſed by runners like the Strawberry, in autumn. It loves a cool ſoil and a ſhady ſituation.

27. If the ſeeds are permitted to ſcatter, they will produce plants in plenty the following ſpring.

31. This will alſo come up from ſeeds, or the roots may be parted.

[POTENTILLA. See *Comarum*, *Fragaria*, *Tormentilla*.]

POTERIUM (*of Pliny*. Ποτηριον *of Dioſcorides*; *from* ποτηριον, *a cup*.)

Lin. gen. n. 1069. *Reich. n.* 1167. *Schreb. n.* 1445. *Juſſ.* 336. Pimpinella. *Tournef. t.* 68. *Gærtn. t.* 32.

Claſſ. 21. 7. Monoecia Polyandria.

Nat. order of *Miſcellaneæ*. *Roſaceæ*, Juſſ.

GENERIC CHARACTER.

* *Male Flowers* in a ſpike.

CAL. *Perianth* four-leaved: *leaflets* ovate, coloured, caducous.

COR. four-parted: *ſegments* ovate, concave, ſpreading, permanent.

STAM. *Filaments* very many, (thirty to fifty) capillary, very long, flaccid. *Anthers* roundiſh, twin.

* *Female Flowers* in the ſame ſpike above the males.

CAL. *Perianth* as in the male.

COR. one-petalled, wheel-ſhaped. *Tube* ſhort, roundiſh, converging at the mouth. *Border* five-parted: *ſegments* ovate, flat, reflex, permanent.

PIST. *Germs* two, ovate-oblong, within the tube of the corolla. *Styles* two, capillary, coloured, flaccid, the length of the corolla. *Stigmes* pencil-form, coloured.

PER. *Berry* formed of the tube of the corolla, hardened, thickened, cloſed.

SEEDS two—inverted, *Gærtn.*

OBS. P. ſpinoſum *has a fleſhy globular berry, with oblong, cylindrical ſeeds.*

P. Sanguiſorba *has a juiceleſs angular berry, with four-cornered ſeeds acuminate at both ends; and two weak piſtils inſerted into the male flower.*

Calyx two, three or four-leaved. Reich. *four-parted, ſuperior*, Gærtn.

Gærtner, who joins this genus with Pimpinella, calls the fruit a drupe.

ESSENTIAL CHARACTER.

MALE. *Cal.* four-leaved. *Cor.* four-parted. *Stam.* thirty to forty.

FEM. *Cal.* four-leaved. *Cor.* wheel-ſhaped, five-parted. *Piſt.* two. *Berry* formed of the hardened tube of the corolla.

SPECIES.

1. Poterium Sanguiſorba. *Leſſer* or *Upland Burnet.*
Lin. ſpec. 1411. *Reich.* 4. 158. *hort. cliff.* 446. *upſ.* 288. *mat. med.* 202. *Hudſ. angl.* 421. *Wither. arr. ed.* 3. 493. *Curt. lond.* 2. 64. *Relh. cant. n.* 711. *Læers, herborn. n.* 736. *Pollich pal. n.* 908. *Ludw. edl. t.* 187. *Sabb. hort.* 2. *t.* 71. *Blackw. t.* 413. *Fl. ruſt. t.* 69. *Dickſ. hort. ſicc.*
Sanguiſorba officinalis. *Regn. bot. t.* 1.
S. minor. *Fuchſ.* 789. *Baub. hiſt.* 3. *b.* 116. *Raii ſyn.* 203. *Pet. brit.* 4. 12.
Pimpinella polyſtemon. *Hall. helv. n.* 706.
Pimp. Sanguiſorba. *Gærtn. fruct.* 1. 162. *Camer. epit.* 777. *Dod. pempt.* 105. 1.
P. Sang. minor hirſuta. *Baub. pin.* 160.
P. ſ. Sang. minor. *Matth.* 1034.
P. vulgaris ſ. minor. *Park. theat.* 582. 1.
P. hortenſis. *Gar.* 889. *emac.* 1045. 1.
P. minor, ſpica minore rubra, fol. hirſutis. *Mor. hiſt.* 3. *ſ.* 8. *t.* 18. *f.* 1.
β. Pimpinella Sanguiſorba minor lævis. *Baub. pin.* 160. Pollich. *Knipb. cent.* 1. *n.* 66.
P. min. ſp. minore rubra, fol. glabris. *Mor. f.* 2.
γ. Pimp. ſang. inodora. *Baub. pin.* 160. *prodr.* 84. *Raii hiſt.* 402.
Unarmed, with the ſtems ſomewhat angular.

[2. Poterium anciſtroides.
Deſont. atlant. 346. *t.* 251.
Suffruticoſe, leaflets very ſmooth roundiſh deeply toothed, flowering ſtem angular procumbent.]

3. Poterium hybridum. *Sweet Burnet.*
Lin. ſpec. 1412. *Reich.* 4. 159. *Sabb. hort.* 2. *t.* 72. *Deſont. atlant.* 347.
Pimpinella agrimonoides. *Lin. hort. upſ.* 288. *Gærtn. fruct.* 1. 162. *Boec. ſic.* 57. *t.* 30. *f.* 1. *Raii hiſt.* 402. 5.—odorata. *Barrel. rar. t.* 632.
Pimp. Agrimoniæ foliis. *Mor. hiſt. ſ.* 8. *t.* 18. *f.* 9
Unarmed, ſtems cylindrical ſtriated.

[4. Poterium caudatum. *Smooth ſhrubby Burnet.*
Ait. hort. kew. 3. 354.
Unarmed, ſtrutteſcent, branches round villoſe, ſpikes elongated looſe.]

5. Poterium ſpinoſum. *Prickly ſhrubby Burnet.*
Lin. ſpec. 1412. *Reich.* 4. 159. *hort. cliff.* 445. *Gron. orient.* 290. *Sabb. hort.* 2. *t.* 73. *Knipb. cent.* 9. *n.* 74.
Pimpinella ſpinoſa. *Mor. hiſt.* 3. 262. *ſ.* 8. *t.* 18. *f.* 5. *Gærtn. fruct.* 1. 162.
Poterio affinis, foliis Pimpinellæ, ſpinoſa. *Baub. pin* 388.
Stoebe legitima. *Cluſ. hiſt.* 2. 303.
With branching ſpines.

DESCRIPTIONS, *&c.*

1. [The common, ſmall or upland Burnet has a perennial root, penetrating deep into the earth. Stems nearly upright, from nine inches to a foot high:] Mr. Miller ſays, a foot and half, [as it is in cultivation: branched, ſtriated, reddiſh, ſmooth except at bottom, where they are ſlightly hairy. Leaves unequally pinnate, on pretty long peduncles, next the root collected into a tuft, on the ſtem alternate. Leaflets ſmooth, pale or bluiſh underneath, deeply ſerrate about the edge, the lower ones on the ſame leaf commonly alternate, and the upper ones oppoſite. The bottom leaves have ſeven or eight pairs of roundiſh leaflets; the ſtem-leaves have five or ſix or at top only two pairs of ovate pointed leaflets. The petiole is three-cornered, channelled, hairy, and ſome-

[y] Hort. kew. [z] Linn. ſpec.

ſomewhat membranaceous at the baſe. Stipules toothed. Flowers peduncled in little roundiſh heads; greeniſh, ſometimes purpliſh on the outſide, the terminating one largeſt: each head has male flowers below, and female or fertile flowers above, expanding before the former, which are frequently imperfect hermaphrodites. Calyx two, three or four-leaved, inferior. Corolla four-parted. Filaments twenty or more, very long, commonly red. Stigma very red [a]. Linneus conſiders the fruit as a Berry formed of the calyx hardened; according to Gærtner it is a Drupe, which in this ſpecies is ovate, acuminate at both ends, quadrangular with the angles compreſſed and ſharp, wrinkled with little excavations at the ſides: rind coriaceous, of a yelloviſh bay colour, or ſometimes reddiſh: ſhell the ſubſtance of paper, ovate, two-celled. Seeds ovate-acuminate, plano-convex, pale yellow, with a ferruginous area at the baſe.

Leers remarks, that the male flowers have a germ and ſtigmas, but all imperfect and barren, as in *Valeriana dioica*: Curtis—that the ſtyles are ſhorter and the ſtigmas leſs expanded; both calyx and corolla larger.

This has the habit of the Great Burnet, (Sanguiſorba officinalis) and the fruit bears a near reſemblance. But that is a coarſer larger plant, and grows in moiſt meadows; it has only hermaphrodite flowers, and differs from this in the number and diſpoſition of the ſtamens. The ſtems of upland or leſſer Burnet are not ſtiff and upright, but rather declining; the lower leaflets rounder; the heads ſometimes purpliſh when in fruit; but never of ſo deep a tinge or ſhining, as in the Great Burnet.

Native of England, Germany, Switzerland, in high dry paſtures, in a calcareous ſoil; flowering in may, and ſometimes in april.

The leaves, when bruiſed, ſmell like Cucumber, and taſte ſomething like the paring of that fruit; they are ſometimes put into ſalads and cool tankards.

The leaves and ſeeds are mildly aſtringent, and have been uſed in dyſenteries and hæmorrhages.

Some years ſince Mr. Rocque attempted to bring Burnet into uſe as an early ſpring-feed for cattle, and it was ſaid to grow ſo faſt as to allow of being mowed three times during the ſummer.

On the ſubject of ſo doubtful a plant it may not be amiſs to ſtate the moſt material evidence on each ſide.]

Mr. Miller ſays, this plant has been of late recommended by perſons of little ſkill, to be ſown as a winter pabulum for cattle; but whoever will give themſelves the trouble to examine the grounds where it naturally grows will find the plants left uneaten by the cattle, when the graſs about them has been cropped to the roots; beſides in wet winters and on ſtrong land the plants are of ſhort duration, and therefore very unfit for the purpoſe, nor is the produce ſufficient to tempt any perſons of ſkill to engage in its culture.

[Burnet, ſays Mr. Curtis, is one of thoſe plants which has for ſome years paſt been attempted to be introduced into agriculture, but not anſwering the farmer's expectations, is now in a great degree laid aſide. Cattle are ſaid not to be fond of it; nor is its produce ſufficient to anſwer the expenſe attending its culture. It is to be lamented that perſons do not pay a little more attention to the nature of plants before they ſo warmly recommend them. It ſeems very unlikely that a ſmall plant, ſcarce ever met with but on hilly and chalky ground, and to which cattle in ſuch ſituations do not ſhow any particular attachment, ſhould afford better, or more copious nouriſhment, than the Clovers and other plants already in uſe. It is not meant by this however to diſcourage that laudable ſpirit of improvement which ſo happily prevails at preſent; but to caution ſuch as introduce any new plant, to make themſelves well acquainted with its natural hiſtory.

According to Mr. Boys, in the Agricultural Survey of Kent, it affords herbage in the winter and ſpring months, but is not much liked either by cattle or ſheep.

Dr. Anderſon reports, that Burnet retains its verdure pretty well during the winter months, but affords ſuch ſcanty crops, as hardly to be worth the attention of the farmer [b].

A correſpondent in the Muſeum Ruſticum, a work very favourable to Burnet, confeſſes with reluctance that it is not deſerving of any exalted character, but rather the contrary; and that it is in no degree to be compared to the common Clover, which is cultivated at half the expenſe [c].

It appears from ſome accounts there that horſes will not eat it at all, and that kine frequently will not take it without great reluctance. Its ſlow growth is alſo made a great objection: being only about five inches high, and having ſcarce one head in flower; whilſt Lucerne, on the ſame ſoil, ſown the ſame day and much thicker, was eighteen or twenty inches in height [d].

A Warwickſhire correſpondent in the ſame work, ſays it is a general rule with ſurveyors on encloſures in that county, to ſet land abounding in Burnet at the loweſt quality. He attributes its keeping long green to a pungent oil with which it abounds; this oil preſerves it from froſt, but at the ſame time makes cattle not fond of the hay; it heats their mouths, and after a day or two they will rather eat ſtraw [e].

Certainly Burnet, in its wild ſtate, is generally ſmall, dry and not ſucculent. Cattle and even ſheep will not eat it when it is run up to ſtalk. But this is not peculiar to Burnet; and we are not to judge of the value of plants in cultivation from the appearance they make when wild. Nor are we, from this difference of appearance, to conclude, as ſome have done, that the wild and cultivated Burnet are ſpecifically different.

A gentleman farmer ſowed five acres of a poor ſandy ſoil, well prepared, with Burnet ſeed, bought of Mr. Rocque, twelve pounds to the acre, in the month of auguſt. The firſt ſeaſon it ran all to ſtalks, with few leaves, ſo that he had not above ſeven hundred weight of hay from each acre, and that very bad. The next year the crop was ſtill worſe, perhaps owing to a long drought. However he was diſſatisfied with it, and finding Saintfoin much ſuperior on his land, ordered the five acres to be ploughed up [f].

Others affirm that Burnet is ſo ſtalky and ſtiff, that it is more fit for fuel than hay; that horſes will ſooner eat their litter than this plant; and that even ſheep will rather eat the hedge round the cloſe than the crop of Burnet in it [g].

But let us now attend to the other ſide of the queſtion.

Mr. Rocque, of Walham Green in the pariſh of Fulham in Middleſex, firſt introduced Burnet to public notice, as food for cattle, about the year 1760, at the recommendation, as it is ſaid, of Mr. Wyche, who firſt gave Rocque the *Bird-graſs*, which is a ſpecies of Poa; and, as I believe, the *Timothy-graſs* or *Phleum pratenſe*.

Rocque's own account of it is, that it is always in ſap, and that you can have the green feed from the middle of ſeptember, till february, march and april, which are the months when other graſſes are commonly ſcarce. He directs it to be fed from february to the firſt of may: to be mowed for ſeed about the middle of june, and to be threſhed between wet and dry, leaving part of the ſeed with the hay, which will be as good as corn and hay together, even if the ſeed is not amongſt it. It muſt be mowed again in the middle of ſeptember, and threſhed like the firſt. Mr. Rocque adds, I now (december 1763) actually keep a horſe with only the Burnet hay or ſtraw, and every body is aſtoniſhed to ſee how well he looks: and Burnet is of ſuch a ſtrong nature, that when horſes feed upon it, their fleſh is ſo firm, that the higheſt-kept horſes are not to be compared to thoſe fed upon Burnet, for firmneſs of fleſh. The chaff, he believes, is as good as Pollard for a horſe; and in his

[a] Curtis, Stokes, Fl. ruſtica.

[b] Eſſays, 2. 46. [c] Vol. 6. 157. [d] Id. 5. 253. 257. [e] Id. 4. 36. [f] Id. 5. 157. [g] Id. 5. 297. 300.

opinion, when cattle are fed upon it, we ſhall have firmer meat than ever we had [k]. When horſes have the greaſe, he adviſes them to be turned in upon the Burnet, but obſerves, that it is only the firſt crop which has this effect. He affirms that it is always green, even when the ſeed is ripe; and that no dry weather ſtops or injures it; inſomuch that he has ſeen Fennel periſh, whilſt Burnet remained green and thriving [l].

Large allowance is to be made for the partiality and feelings, both of a man who has introduced a new object to public notice, and of thoſe who from ſome cauſe have been diſappointed in their great expectations.

A neighbour of Mr. Rocque's, early in november 1763, ſaw his plot of Burnet: it had been cut at the end of ſeptember, looked then very freſh and vigorous, and had acquired a conſiderable growth ſince the cutting. He alſo ſaw ſome hay made of it, in Mr. Rocque's barn: it was not bad, but would have been excellent had it not been left till the ſeed was perfected, and had it not been got up in a wet ſeaſon. The beſt time, he juſtly ſays, to make Burnet into hay, is juſt before it begins to flower, as it is then fulleſt of ſap, tender and nouriſhing: when the ſeeds are left to perfect, the ſtalks are apt to grow ſticky.

Burnet, he adds, is not only a wholeſome food for cattle, but they are remarkably fond of it both in a green and dry ſtate: this, with its vegetating in the cold winter months, ſhould induce farmers to ſow it, eſpecially as there is no fear of its thriving in almoſt any ſoil, and it is a quick grower [m].

Mr. Rocque himſelf informs us in another place that the firſt crop of Burnet purges horſes, as well as the ſtrongeſt phyſic, for three days ſucceſſively; and that being at Lord Uxbridge's in auguſt 1764, he ſaw ſix horſes feeding upon three acres of Burnet: they had been turned upon it three weeks and four days; they purged exceſſively the three firſt days, but the fourth day it ſtopped, and they then throve amazingly. The Burnet grew faſter than the horſes could eat it, though the land is gravelly and full of large ſtones [n].

Mago, who was a well known character, and a very good farmer, informs us, that he rode ſeveral times during the winter of 1764 5 by Mr. Rocque's Burnet; that there were four acres of it; that they looked ſurpriſingly well, and were a fine deep feed [o].

This gentleman having firſt heard of Burnet in the ſpring of 1763, in july 1764 ſowed a piece of ground with five pounds of Rocque's ſeed; and in the october and march following planted it out on four acres of light hot land: the ſummer was very dry, his plants however ſtood it out, and were of a beautiful verdure; the weeds were kept down, and about 160 pounds of ſeeds were collected by hand: part was then mowed, and afterwards four cows and two horſes were turned into the field. The cows ate very freely, preferring the lower part as being moſt leafy; the horſes took ſtalks and all without diſtinction: but at firſt the horſes did not ſeem to like it ſo much as the cows. After theſe had been two or three days on the Burnet, the butter and cream were perceptibly improved in flavour. The coach-horſes lived upon it near a month, and throve very much, after a day or two [p].

Chriſtopher Baldwin, Eſq. of Clapham Common made ſeveral experiments on Burnet in the years 1763 and 1764. In july 1764 he ſowed eight rods of ground with five pounds of Rocque's ſeed, and in the autumn and ſpring following tranſplanted it on four acres. The plants were once hoed, and ſtood over for ſeed. When that was got, four cows and two horſes were turned in. The cows fed freely on it, but the horſes did not ſeem to like it much at firſt, though in two or three days they fed well upon it. In four or five days the cows increaſed much in milk, and the cream was ſuperior in flavour. The horſes were afterwards fed in the ſtable about five weeks with the haulm from which the ſeed had been thraſhed; and they throve much upon it, though they had only half their allowance of oats. The next winter four cows were turned in, which were in very good feed on natural graſs, and had beſides a large truſs of oat-ſtraw put in their cribs every night, yet they gave very little milk, and indeed were almoſt dry. They had not been in the Burnet above ſix days, before they gave much more than double the milk, of an exceeding fine quality, and ſoon began to leave half their ſtraw in the cribs. Mr. Baldwin's land is dry poor upland gravel [q].

The Earl of Northington ſowed an acre of Burnet at the Grange by way of experiment. The ſoil was light, but rich enough for wheat or any other common grain. It was ſown by itſelf broadcaſt, kept clean, and mown once the firſt year; the ſecond twice, once for ſeed, and once for green food: horſes, hogs and ſheep fed freely on it, which was ſuppoſed to depend upon not giving it them when too old and ſtalky. When Mr. Young ſaw it in 1767, it was two years old that ſpring, was ſtanding for a crop of ſeed, not having been cut that ſeaſon, and was a very fine thick crop, of great bulk, with very few weeds in it [r].

Mr. Johnſton of Iſford had one rood drilled in rows two feet aſunder, and one acre in rows at three feet diſtance; both very fine crops in 1767. The year before he fed cows and horſes with the produce of the rood; both eat it very freely, and even with greedineſs. The land is dry and gravelly [s].

Mr. Young alſo viewed an acre of Burnet at Stoak in Norfolk, which was three years old in 1767: it was ſown broadcaſt on a good loam, and kept perfectly clean from weeds a year at the expenſe of above two guineas; but it anſwered very well, for it has every year yielded a great quantity of hay, beſides luxuriant food ſo early as the month of february for many horſes. It was a regular crop, and appeared to grow very quick [t]. He remarks that Lord Clare had a piece of Burnet at Goſfield for his deer in winter, which anſwered extremely well [u].

Mr. Young obſerves, it appears extremely clear from theſe minutes, that the idea of cattle diſliking Burnet is a moſt miſtaken one: and that the trial at Stoak is perfectly ſatisfactory, particularly in the point of having a luxuriant head of food for ſheep and horſes in january and february, which no other graſs would give [w].

Mr. Young relates an experiment made by Mr. George Siſſon, a farmer of Bridge Caſterton in the county of Rutland, in may 1767, upon an acre of light ſandy land, in Ingthorp lordſhip, which turned out very advantageouſly, and when Mr. Young ſaw it was a fine after-crop, the firſt having been mowed for hay. He ſowed fourteen pounds of ſeed, and in july 1768 he mowed it, and having threſhed it, he had twenty-three buſhels of ſeed, which weighed five hundred ſixty-two pounds and a half [x].

Sir Digby Legard, in april and may 1766 and 1767, ſowed twelve acres with Burnet ſeed, twelve pounds to the acre, on light loam well prepared; the ſeed was ſown by hand and without corn. The firſt year's crops were a ton on an acre; the next year better, but the third much inferior. The produce of ſeed very great. The hay is coarſe, but cattle will eat it. Cows and horſes in general eat it very greedily, but ſome horſes diſlike it at firſt. Three acres yielded fourteen buſhels of ſeeds in 1767, one buſhel of which weighed twenty-four pounds [y].

Mr. Searanche, at Hatfield, on an upland gravel, ſowed Burnet by itſelf, after a complete fallow and manuring with ſaintfoin, and alſo with oats. It was kept clean for a year by hand work. For hay he eſteems it as nothing; but good for cows, making fine butter; and alſo very early for ſheep. It ſtands the rigour of the ſevereſt winter without being damaged.

Mr. Dalton, at Sleningford, on a ſhallow light loam on limeſtone, ſowed five acres with barley in 1767. It was ſed down the firſt ſpring by forty ſheep, three weeks in april, after which it ſtood for hay, and yielded

[k] Id. 1. 298, 308. [l] Id. ib. 462. [m] Id. ib. 229. [n] Id. ib. 230. [o] Id. 4. 177. [p] Young's Six week's tour. 5. 204. [q] Id. 237. [r] Id. 1. 33. [s] Id. 2. 75. [t] Id. 7. 346. [u] Six month's tour through the north of England, 1. 71. [w] Id. 2. 41.

a large

a large cart load by the acre. Very good, and eaten freely by cattle.

From theſe trials, Mr. Young obſerves, it appears clearly, that Burnet will abide the winter's froſt, yield plenty of green feed early in the ſpring, and make cows yield very fine milk; and that horſes feed on it both green and in hay.

There is only one minute againſt it, which is Mr. Hewet, of Bilham, on a fine light hazel mould, in drills, and kept perfectly clean. He ſays, no cattle whatever would eat it, unleſs abſolutely forced by hunger [r].

Mr. Young, in his Eaſtern Tour [s], ſays that in ſumming up his intelligence concerning Burnet in his tour of 1768, he found the accounts very contradictory. That it is a good paſture in ſome places, and a bad one in others, he juſtly looks upon as highly improbable; and imputes the diverſity of accounts to circumſtances unrelated, or in ſome inſtances perhaps to prejudice.

Cattle, he obſerves, may have been turned into it, after it had got a head and was near ſeeding; then it is generally agreed they will not touch it. But ſo it is with Ray-graſs; what is that good for as feed after midſummer?—The ſeed of Burnet having fetched a good price, much has been ſeeded, and the *ſtraw* has been too often confounded with the *hay*. The original intention of it was for a winter paſture; and in that ſeaſon cattle will eat and thrive on food, which at other times they will not touch: this has not been ſufficiently attended to. Cattle may have been turned into a Burnet field ſo hungry, that they might feed on it for a time, without proving it to be good food in general. From actual practice however ſeveral facts may be deduced.

Firſt, the balance of the account is greatly in favour of Horſes eating it in the common manner of all other food.

Secondly, we cannot deny it to be a good food for Sheep, and the balance of intelligence lies much in favour of it.

Thirdly, in a few inſtances Cows and Oxen diſlike it, but in many they eat it freely.

Upon the whole the reports are favourable: but the proper application of Burnet ſeems to be, to leave it a good head in autumn ready for ſheep in the ſpring, for them to keep it down as cloſe as poſſible about two months, upon the plan of Ray-graſs; and after that to let it ſtand for a crop of hay.

But the moſt advantageous method ſeems to be, to ſow it with other graſſes in laying down land to paſture.

Since theſe obſervations of Mr. Young's were made, there have been other trials of Burnet.

Mr. W. Pitt, of Pendeford near Wolverhampton, in april 1783, ſowed an acre of Burnet inſtead of the uſual ſeeds, in the midſt of a field of barley, the reſt of the field being ſeeded with clover and ray-graſs. The ſeeds came well, and the following autumn it was paſtured with ſheep and horned cattle. The ſheep preferred the clover and ray-graſs; but the horned cattle ſeemed to prefer the Burnet. It was hayed up at Chriſtmas, and notwithſtanding the great inclemency of the weather at Lady-day, the Burnet was a good picking for cows. It evidently preſerved its verdure in ſevere weather much beyond clover [t].

The ſame excellent cultivator, in his Agricultural Survey of Staffordſhire ſays, that Burnet has been ſown by many perſons there of late years, and by ſome on a broad ſcale; that he knows it by experience to be a valuable addition to cow paſtures; cows preferring it to clover: that Mr. Miller, a very attentive neighbour of his, who keeps a large dairy, and has for ſome years back ſown large quantities of it, is ſo very partial to Burnet, that he would have ſown ten hundred weight of the ſeed, could he have procured it. Certainly, ſays Mr. Pitt, it is a good mixture with other herbage, with which it interferes little, drawing its nouriſhment deep from the earth by a long tap root. He thinks that ſheep and horſes prefer clover, and he allows that it is by no means ſo productive as broad clover, by one third.—However he eſteems it a good plant to ſow inſtead of ray-graſs with clover or treſoil, being abiding, and extremely hardy, bidding defiance to froſt, coming very early in the ſpring, and ſuſtaining the chilling blaſts of the eaſt wind without fading. It has alſo the property of preſerving hay from overheating in the ſtack [u].

That ſheep eat wild Burnet when young appears from many of our chalk downs, particularly Saliſbury-plain between Saliſbury and Everley, where this plant forms almoſt the whole ſtaple of the herbage over a great extent of that moſt excellent ſheep-walk. It is kept ſheared very cloſe by the large flocks which depaſture on it every day, except here and there a flower-ſtem which is left growing. Hence Dr. Withering obſerves, he has no doubt but that it is a moſt valuable plant in hard-ſtocked ſheep paſtures [x].

To aſcertain how far ſheep are fond of cultivated Burnet, Thomas Le Blanc, Eſq. of Cavenham in Suffolk, in october 1782, ſowed a ſpace, ſeveral perch ſquare, with Burnet-ſeed and rye, being part of a hundred acres laid to ray-graſs, treſoil and white clover; the ſoil a blowing ſand upon a chalk bottom. It was folded for the rye. The 5th of april 1784 between ſix and ſeven hundred ſheep were turned in. The graſſes were in general backward, but the Burnet was much forwarder than the reſt. For the firſt two or three days they did not eat it at all; but a fortnight after it was eaten to the ground, and on the 4th of june it was pared cloſe. When a ſtock has ſo large a range as a hundred acres, and the growth of any ſmall ſpot is eaten up ſo clean, it is a far more ſatisfactory proof that the ſheep have no diſlike to the plants growing there, than if they were confined to a ſmall field with no other herbage [y].

On this deciſive experiment Mr. Young makes the following very pertinent obſervations.—On three-fourths of the ſheep-walks in England, ray-graſs is the only plant uſed, or ſometimes broad clover on ſoils much too poor for it. Granting the neceſſity of ſome ray-graſs, is it not a great object to introduce other plants, not ſo exhauſting, that ſhall have the ſame or ſuperior qualities? There is no doubt of the exhauſting quality of ray-graſs; but the broad leaf of Burnet, and its deep carrot root indicate the contrary effect, and accordingly in ſeveral trials it has been found to ameliorate. The pooreſt ſoils in the kingdom agree well with it; and the hot pungent quality of the plant has been found exceedingly beneficial to ſheep touched with the rot.

The aſſertions that were made for ſome years againſt Burnet reſulted from attempting to feed it when too much grown. The right time to feed it with ſheep is while it is in its young yellow ſhoot, and in that period of its growth nothing refuſes it.

Mr. Le Blanc alſo, in the ſpring of 1788, laid down an acre of incloſed good but looſe ſand, with ten pounds of Burnet ſeed. He kept it in autumn for ſheep feed, and fed it bare in the ſpring accordingly. At the end of may it was riſen again to be a fine regular growth, and produced ſeven buſhels of ſeed. In the ſpring of 1790 he fed it again with ſheep. In part of the ſame field were turnep-rooted cabbages. When ſheep and cows were turned in promiſcuouſly they did not begin the burnet till the cabbages were eaten; but at laſt they eat it bare as a board to paſt the middle of april [z].

J. William Allen, Eſq. of Whipſtead made an experiment on a ſtrong tenacious loam, on a clay bottom. Five roods of this land were ſummer-tilled in 1791, and in the ſpring of 1792 ſown with barley, at the ſame time twenty-eight pounds of Burnet were harrowed in. The Burnet looked well after harveſt, and at michaelmas was about ſix inches high. The 5th of april he turned in thirty Norfolk ewes and lambs; they eat it greedily, and in three weeks had trimmed it ſo

[r] Id. vol. 4. p. 70. [s] Vol. 4. p. 131. letter 35.
[t] Young's Annals, 1. 394.
[u] Idem, 3. 366.
[x] Arrangem. of Brit. plants, p. 494. ed. 3. note.
[y] Young's Annals, 2. 168. [z] Idem. 16. 355.

much as to become reſtleſs, and were therefore removed. On the 1ſt of may nineteen Leiceſter ewes with twenty-three lambs were turned in till the 10th, when the field was ſhut up for ſeed. It was mowed on the 20th of july, and produced three quarters and two buſhels of clean ſeed. The ſtraw was laid up for winter proviſion for ſheep; and the horſes are very fond of the chaff[f].

Robert Proctor Anderdon, Eſq. thinks Burnet ſo healthy a graſs for ſheep, that he earneſtly recommends it to all farmers to interſperſe ſome of it in every field ſown with graſs-ſeeds to remain in paſture; for he conceives it to be warm and aſtringent, having put ſheep that ſcoured into ſuch of his fields as abound with it, by which they have ſoon been viſibly benefited[g].

His cows, in a dry ſummer, being put into an old hilly paſture, where Burnet grows naturally, produced an amazing increaſe of milk[h].

From the above accounts we may collect the utility of this plant properly cultivated on a ſuitable ſoil. The produce of it, both in hay and ſeed is conſiderable; the paſturage, not only in autumn and ſpring, but in winter, maintaining its growth and verdure in drought and froſt, render it particularly valuable; in general cattle and ſheep are fond of it, and grow fat by it; the milk, cream and butter of cows feeding on it are excellent in quality and great in quantity: it will flouriſh and afford large crops on ſandy, gravelly and ſhaley ſoils. Theſe are valuable qualities, and yet Burnet is not cultivated to any great extent, nor is it generally admitted that cattle and ſheep will always eat it; and with reſpect to horſes many deny that they will crop the herbage willingly[i].

There are ſome varieties of the common upland Burnet ſcarcely worth mentioning: as one that is much ſmoother; a ſecond that has no ſmell; and a third with larger ſeeds.

The differences between this and the great Burnet (Sanguiſorba officinalis, *Linn.*) have been given above. Some confuſion has ariſen from the Burnets and Burnet-Saxifrages having all had the name of *Pimpinella* in old authors. The Burnet-Saxifrages (Pimpinella Saxifraga et magna, *Linn.*) are, as all botaniſts know, extremely different, being umbellate plants. Dr. Anderſon ſtill calls the cultivated Burnet *Pimpinella ſylveſtris*, which is the name of the Great Burnet in Gerarde's herbal.

2. Stem the thickneſs of the finger, rough with the dried rudiments of the petioles. Leaves unequally pinnate, very ſmooth, ſhining above, paler underneath. Petioles cluſtered on the top of the ſtem, ſheathing at the baſe. Leaflets nine to nineteen, ſuboppoſite, ſeſſile, truncate at the baſe. Flowering branches ſlender, angular, procumbent. Leaves on them few, with roundiſh leaflets, ſometimes obovate or even linear. Peduncles few, long, unequal. Head of flowers long. Germ inferior, four-cornered. Calyx four-parted. Stamens about twenty; with violet-coloured filaments. Drupe wrinkled, ſharp-pointed at both ends, coriaceous.

Native of Barbary near Tlemſen, in the fiſſures of rocks; flowering early in ſpring[k].]

3. This is a biennial plant, decaying ſoon after the ſeeds are ripe. Leaves like thoſe of Agrimony, compoſed of three or four pairs of oblong leaflets, placed a little alternate; they are deeply indented, and have an agreeable ſcent. Stems two feet high, with one of theſe leaves at each joint, gradually diminiſhing in ſize to the top; and juſt above the leaf ariſes a long peduncle, which ſupports two or three ſmall ones, each ſuſtaining a ſmall roundiſh ſpike of flowers. Theſe appear in july, and are ſucceeded by ſeeds which ripen in autumn.

[Desfontaines remarks, that the whole plant is villoſe, and of an aſh-colour; the leaflets ovate.

The drupe is ſmalliſh, ovate-oblong, attenuated to both ends, wrinkled, obſcurely four-cornered, bay-coloured, one-celled: rind coriaceous, thin: ſhell cartilaginous, ferruginous on the outſide. Seed cylindric-acuminate, bay-coloured[l].

Native of the South of France, Italy and Barbary. Cultivated in 1683, by Mr. James Sutherland[m].

4. Native of the Canary Iſlands, where it was found by Mr. Francis Maſſon. Introduced in 1779. It flowers in march and april[n].]

5. This has a ſhrubby ſtalk, riſing about three feet high, and dividing into ſeveral ſlender branches armed with ſharp branching thorns. Leaves very ſmall, unequally pinnate with ſix or ſeven pairs of oppoſite leaflets, of a lucid green and continuing all the year. Flowers of an herbaceous colour, in ſmall heads at the ends of the branches: they appear the beginning of june, and there is a ſucceſſion of them moſt part of the ſummer; but thoſe only which come early, are ſometimes ſucceeded by ſeeds in England.

[Drupe globular, obſcurely angular towards the baſe, red: rind ſpongy, very thick: ſhell elliptic, ſharp-pointed at both ends, bony, two-celled. Seeds ſemi-cylindrical, pale yelloviſh, with a cheſtnut-coloured area at the baſe[o].

Native of the Levant; the foot of Libanus, Candia and ſeveral iſlands of the Archipelago.—Cultivated by Gerarde in 1596[p].]

PROPAGATION AND CULTURE.

1. Common or Small Burnet is eaſily propagated in gardens for ſalads, &c. by ſeeds ſown in autumn, ſoon after they are ripe. If ſown in the ſpring, the ſeeds frequently lie in the ground till the ſpring following. If the ſeeds be permitted to ſcatter, the plants will come up in plenty; and if theſe be tranſplanted into a bed of undunged earth, at about a foot diſtance every way, and kept clean from weeds, they will continue ſome years without farther care, eſpecially if the ſoil be dry. Burnet may alſo be increaſed by parting the roots in autumn, but as it grows ſo freely from ſeeds, this method is ſeldom practiſed.

[*Field Culture of Burnet.*

Mr. Rocque directs the ground to be prepared for Burnet in the ſame manner as for Lucerne; to be ploughed or trenched as deep as the ſtaple will admit, and to be well dunged: the ſeed to be ſown broadcaſt without corn, twelve pounds to the acre, in april, or any of the ſucceeding months till auguſt; before ſowing, harrow and roll; after ſowing, harrow with a light harrow and roll again; ten days after the ſeed will come up with a round leaf; but it is generally ſaid by others that the ſeed takes about twenty-three days to vegetate: keep the crop very clean the firſt year, and it will keep itſelf clean afterwards[q].

Unleſs it be ſowed early, Burnet muſt not be grazed the ſame ſummer, becauſe when young it bleeds too much; but it ſhould be left till february or march; it may then be fed till the beginning of may, when the cattle ſhould be taken out, and it may be mowed for ſeed about the middle of june.

For Burnet after Turneps, Mr. Rocque directs, after the Turneps are cleared off, ſuppoſe in march, to plough the ſame depth as was ploughed for the Turneps; then about the middle of may to trench-plough it, to break the ſtaple, and facilitate the growth of the roots; in the middle of june trench-plough again, but no deeper than the firſt time, not to bring up the dead earth. Harrow and roll well, and then ſow; after which run a light harrow over it, not to bury the ſeed too deep, and roll it again: then let it lie till auguſt, when if there are any weeds harrow backwards and forwards, and if there ſhould be occaſion hoe or hand weed it[r].

A dry ſoil ſuits Burnet beſt. It grows in ſtony and gravelly lands, but its natural bed is calcareous. The ill ſucceſs which has ſometimes attended this crop may perhaps be owing to its having been ſowed in a ſoil improper for it. We have ſeen however that

[f] Id. 21. 171. [g] Bath papers, vol. 2. p. 58. [h] Id. ib. p. 60. note. [i] Muſeum ruſticum, vol. 6. 159. note, and 240. note. [k] Desfontaines. [l] Gærtner. [m] Hort. kew. [n] Idem. [o] Gærtner. [p] Hort. kew. [q] Muſ. ruſt. 1. 196. [r] Id. ib. 469.

it ſucceeded in one inſtance in ſtrong land, but perhaps the ſubſoil was marly. It will not do where water ſettles on the ſurface, or on a wet bottom.

Burnet will not ſucceed on new broke-up land, but a crop of oats or potatoes ſhould firſt be taken. The ground ſhould be worked very fine for this crop[s].

Others have tranſplanted Burnet in rows with good ſucceſs.—Mago ſowed five pounds of Rocque's ſeed in the ſummer of 1764 broad-caſt after peas. At the end of auguſt, when it was ſix or ſeven inches high, he mowed it to deſtroy the weeds. It ſoon ſhot up again, and topt the weeds.

By the fourth of october having got two acres of light dry land, that had had a crop of oats, well ploughed twelve inches deep, he planted them with the Burnet; and though it was ſo late as from the fourth to the tenth of october, the plants in general took, vegetated through the winter, and in the ſpring were very promiſing: the rows were twenty inches apart, and the plants were fifteen inches from each other in the rows[t]. In march the ſame gentleman tranſplanted two acres more.

Mr. Baldwin alſo purſued the ſame method. In the beginning of july 1764 he ſowed about eight rods of ground with five pounds of Rocque's Burnet ſeed. Rain falling ſoon after, the plants came up and throve ſo well, that he ploughed up an acre of ground, and planted it on the fourth of october, in rows twenty inches apart, and fifteen inches aſunder in the rows. The plants took well, and throve through the winter with ſurpriſing vigour. In the ſpring he planted three acres more, and notwithſtanding the uncommon drought of the ſummer, the whole grew well, without being watered. The plants were once hoed, and ſtood over for ſeed. Cows and horſes were turned in, and they having fed it down, it was hoed again and harrowed once over.

Mr. Baldwin afterwards ſowed twelve acres broad-caſt, after oats, with 160 pounds of ſeed, on the 26th of auguſt: no rain falling till the 18th of ſeptember, the plants did not appear till the 28th. His land is poor dry upland gravel[u].

Other gentlemen have practiſed the drill huſbandry with equal ſucceſs, on Burnet. It has been ſown indifferently in ſpring and autumn, but moſt commonly in the former ſeaſon: with corn and without, but ſeemingly to moſt advantage alone.

For hay it ſhould be mown when in full bloſſom. When mown for ſeed, much of it will be loſt; for what is full ripe is apt to ſhed, and as it ripens ſucceſſively, ſome will be quite green, when the forwardeſt is quite mature.]

3. Sow the ſeeds in autumn, and the plants will come up in ſpring: thin them and keep them clean from weeds. The ſecond year they will flower, ripen their ſeeds, and decay.

4, 5. Theſe may be increaſed by ſlips or cuttings, planted in a bed of light earth, during any of the ſummer months; cover them cloſe with a hand or bell-glaſs and ſhade them from the ſun. When they have taken root, take them up, and plant them ſingly in ſmall pots, filled with freſh undunged earth. Place them in the ſhade till they have ſtruck root, and then remove them to a ſheltered ſituation. When froſts come on, place them under a hot-bed frame. They require little water, eſpecially in cold weather.

[POTHOS (*of Pliny. Πόθος of Theophraſtus. It ſignifies deſire. Pauſanias calls Cupid by this name.*)

Lin. gen. n. 1031. *Reich. n.* 1122. *Schreb. n.* 210. *Juſſ.* 24.

Claſſ. 4. 1. Tetrandria Monogynia.—*olim* Gynandria Polyandria.

Nat. order of *Piperitæ*. *Aroideæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Spathe* globular, one-leafed, gaping on one ſide. *Spadix* quite ſimple, thickened, covered all over with ſeſſile fructifications.

Perianth none, unleſs the corolla be taken for it.

COR. *Petals* four, wedge-ſhaped, oblong, erect.

STAM. *Filaments* four, widiſh, erect, narrower than the petals, and of the ſame length. *Anthers* very ſmall, twin.

PIST. *Germ* parallelopiped, truncate. *Style* none. *Stigma* ſimple.

PER. *Berries* aggregate, roundiſh, two-celled.

SEED ſingle, roundiſh.

ESSENTIAL CHARACTER.

Spathe. Spadix ſimple, covered. *Cal.* none. *Pet.* four, *Stam.* four. *Berries* two-ſeeded.

SPECIES.

1. Pothos ſcandens. *Climbing Pothos.*
Lin. ſpec. 1374. *Reich.* 4. 76. *Willd.* 684. *fl. zeyl. n.* 329. *Burm. zeyl.* 197. *Lour. cochinch.* 532.
Appendix duplo folio. *Rumph. amb.* 5. 490. *t.* 184. *f.* 1, 2, 3.—*t.* 181. *f.* 2. *Lour.*
Ana-parva. *Rheed. mal.* 7. *t.* 40.
Petioles the breadth of the leaves, ſtem rooting.

2. Pothos acaulis. *Stemleſs Pothos.*
Lin. ſpec. 1675. *Jacq. amer.* 240. *t.* 153. *pict.* 118. *t.* 231.
Planta innominata. *Plum. amer. t.* 57.
Leaves lanceolate quite entire nerveleſs.

3. Pothos lanceolata. *Lance-leaved Pothos.*
Lin. ſpec. 1373. *Reich.* 4. 76. *Willd.* 684. *Plum. amer.* 47. *t.* 62. *fil. t.* 206. (Arum.)
Leaves lanceolate quite entire three-nerved, ſcape three-ſided at the tip.

4. Pothos crenata. *Notch-leaved Pothos.*
Lin. ſpec. 1373. *Reich.* 4. 76. *Willd.* 685. *Plum. ſpec.* 4. *ic.* 39. (Arum.)
Leaves lanceolate crenate.

5. Pothos violacea. *Violet-fruited Pothos.*
Lin. ſpec. Willd. 685. *Swartz, prodr.* 32. *deſcr.* 270. *Brown. jam.* 333. *n.* 13.
Dracontium ſcandens. *Aubl. guian.* 836. 3.
Leaves ovate-lanceolate entire nerved dotted.

6. Pothos craſſinervia. *Thick-nerved Pothos.*
Lin. ſpec. Willd. 685. *Jacqu. ic. rar.* 3. *t.* 610. *collect.* 4. 122.
Leaves oblong acuminate quite entire veined, with the midrib of the leaf three-keeled.

7. Pothos cordata. *Heart-leaved Pothos.*
Lin. ſpec. 685. *Reich.* 4. 76. *Willd.* 685. *Plum. ſpec.* 4. *ic.* 38. *fil. t.* 205. (Arum.)
Leaves cordate, lobes imbricate, ſpadix nearly equal to the ſpathe.

8. Pothos macrophylla. *Large-leaved Pothos.*
Lin. ſpec. Willd. 686. *Swartz, prodr.* 33. *deſcr.* 269.
P. grandifolia. *Jacqu. ic. rar.* 3. *t.* 610. *collect.* 4. 121.
Dracontium cordatum. *Aubl. guian.* 2. 836. *Plum. amer.* 48. *t.* 63.
Leaves cordate, lobes divaricate, ſpadix much longer than the ſpathe.

9. Pothos pinnata. *Pinnate-leaved Pothos.*
Lin. ſpec. 1374. *Reich.* 4. 77. *Willd.* 686.
Laſia aculeata. *Lour. cochinch.* 81. 103?
Appendix laciniata. *Rumph. amb.* 5. 489. *t.* 183. *f.* 2.
Leaves pinnatifid.

10. Pothos palmata. *Palmate-leaved Pothos.*
Lin. ſpec. 1374. *Reich.* 4. 77. *Willd.* 686. *Plum. amer.* 49. *t.* 64, 75. (Dracontium.) *fil. t.* 207, 208. *ſpec.* 5. (Dracunculus.)
Leaves palmate, lobes nine lanceolate blunt.

11. Pothos digitata. *Digitate-leaved Pothos.*
Lin. ſpec. Willd. 686. *Jacqu. ic. rar.* 3. *t.* 611. *collect.* 119.
Leaves digitate about nine oblong ſharpiſh.

12. Pothos pentaphylla. *Five-leaved Pothos.*
Lin. ſpec. Willd. 687.
Dracontium pentaphyllum. *Aubl. guian.* 2. 837. *t.* 326.
Leaves digitate quinate ovate acuminate.

13. Pothos fœtida. *Stinking Pothos* or *Skunk weed.*
Ait. kew. 3. 319.
Arum n. 12. *Mill. dict.*
Leaves cordate, ſpadix ſubglobular.

DESCRIPTIONS, *&c.*

1. This is a ſhrub climbing like Ivy, throwing out fibres as that does, by which it adheres to walls and the trunks

[s] Id. 4. 177. [t] Id. ib. 229. [u] Id. 6. 259.

trunks of trees. Branches round. Leaves diſtich, alternate, lanceolate, ſtriated, ſmooth, quite entire, on a membranaceous petiole, as in the Orange. Fructification axillary, ſolitary, peduncled, reflex [a]. Spike globular in this: oblong in the following ſpecies [b].

Loureiro deſcribes the leaves as much wider than the petioles, which are long, half embracing, and alternate. Flowers pale. Berries red, ſubovate, juicy, ſmall, containing one or two ſeeds.

Native of the Eaſt Indies and Cochinchina. Loureiro ſays that Rumphius's *Appendix duplo folio*, referred to this plant by Linneus, is not a *Pothos*, but *Flagellaria repens*.

2. This is alſo paraſitical, and in habit reſembles the Aloe. It has no ſtem. Leaves wedge-lanceolate, acuminate, ſmooth, on a ſhort petiole, coriaceous, ſomewhat rigid, numerous, radical, a foot and half or more in length. Scape axillary, round, a foot long. In Martinico they call it *Queue de rat* from the form of the flowering ſpadix [a].

Native of South America, and the iſlands of the Weſt Indies. Jacquin obſerved it in the vaſt mountain woods of Martinico.

3. This was found by Plumier in South America.

4. Found in the iſland of St. Thomas by Plumier [a].

5. This is a ſubparaſitical plant, with thick long filiform ſimple ſmooth whitiſh roots. Stems ſeveral, heaped, two or three feet long, rooting, ſimple, thickiſh, round, ſtiff, knobbed, ſheathed, leafy, ſmooth. Sheaths at the knots of the ſtem or at the inſertion of the petioles, ſurrounding the ſtem, of a netted contexture, ferruginous. Leaves ſcattered, alternate, acuminate, convex, dotted but not perforated, membranaceous. Petioles thickiſh, middling, round, channelled above, ſmooth, ſheathing at the baſe. Scapes from the boſom of and ſcarce longer than the petioles, erect, round, ſmooth, ſolitary, three-cornered. Spathe ovate, concave, entire, ſhorter by half than the ſpadix, ſpreading. Spadix half an inch long, cylindrical, green. What Linneus calls the corolla conſiſts of four triangular valves retuſe at the tip, not to be diſtinguiſhed but in the berry-bearing ſpadix. Filaments four, like petals, membranaceous, whitiſh, permanent, within the valves, cloſing up the germ, concealed ſo that the anthers appear to ſit on the ſtigma. Anthers twin, with one-valved lobes. Germ roundiſh. Stigma biſid. Berry rolled up in the valves at the baſe, pellucid, violet-coloured, four-ſeeded. Seeds oblong, remotely diſpoſed in a ſquare, white.

Native of Jamaica, on the higheſt mountains, at the roots and on the trunks of trees [b].

Browne obſerved it in the woods above St. Ann's bay; and ſays, that it ſticks pretty cloſe to the trunk of whatever tree it grows upon, but ſeldom runs above two or three feet in length.

Aublet found it in Guiana.

6. This is a paraſitic ſpecies, growing on trees in hilly woods in South America. The whole plant is ſmooth; the roots numerous, cylindric, long, of the thickneſs of a quill, outwardly whitiſh, inwardly green: the radical leaves are ſeveral, oblong-lanceolate, pointed, perfectly entire, without veins, coriaceous, firm, upright, of a bright green, a little thickened at the edges, owing to the margin being a little reflected: on the under part, if viewed with a glaſs, they appear thickly ſcattered with whitiſh points; and their length is from about a foot and half to two feet and a half: the midrib is extremely thick, often equalling the thickneſs of a finger at the lower part, and protuberating on both ſurfaces: the footſtalk is a finger thick and three or four inches long; flat above; round or a little ſubangulated beneath: the ſtipules are lanced, ſharp, upright, firm, and three inches long: the ſcapes ſeveral, ſubcylindric, horizontally ſpreading, and from one to two feet long. The ſpathe is lanceolate, and of the length of the ſpadix, ſharp, univalvé, flat, hanging, green, but ſoon growing brown, and afterwards withering: the ſpadix aſcendent, round, thicker than a quill, and three or four inches long; the whole being very thickly and unequally covered with the fructifications, which are hermaphrodite and tetragonal: the petals pale at the baſe, and browniſh at the top: the filaments white; anthers yellow: germ pale green with the top ſpotted with brown [c].

7. This very much reſembles the next ſpecies, but yet it is entirely diſtinct from it, by having the lobes of the leaves imbricate, the leaves much ſmaller, and the ſpadix much ſhorter [d].

Native of South America.

8. This is a ſubparaſitical, ſtemleſs plant. Root knobbed, unequal, thick, fleſhy, a foot long, ferruginous-mealy on the outſide, of a ſpongy red ſubſtance within, putting forth very long filiform fibres. Leaves all radical, very large, from one to two feet in length, membranaceous, hanging down, veined, nerved behind, ſmooth on both ſides, ſhining, green. Petioles long, round, channelled, ſmooth. Peduncles or ſcapes longer than the petioles, round, ſmooth. Spathe lanceolate, attenuated, membranaceous, coloured. Spadix a foot long and more, round, thick, nodding, covered with minute florets in cluſters, ſeparated by lines cutting each other in ſquares. Flowers blue [e].

Native of the Weſt Indies and Guiana.

9. Plant ſix feet high and ſtemleſs. Leaves large and pinnatifid; on round long erect petioles. Scape naked, almoſt equal to the leaves, quite ſimple. Leaves, petioles and ſcapes all beſet with many crooked ſhort ſcattered prickles [f].

Loureiro ſeparates it from *Pothos*, and names it *Laſia*, from Λαιος, *horridus*, on account of its pricklineſs. Willdenow remarks that his deſcription and Rumphius's figure do not agree.

Native of the Eaſt Indies and Cochinchina.

10. This was found by Plumier in South America. It is paraſitic on the trunks of trees: the leaves are often more than three feet long, with a footſtalk near four feet long: the leaves are divided in the manner of thoſe of the Vitex Agnus caſtus; they are as thick as ſtrong parchment, ſmooth, and of a deep green above; ſomewhat lighter beneath: the diviſions of the leaf do not reach to the footſtalk, and each is marked by a ſtrong nerve or midrib. The fructifications are born on ſpikes of more than a foot long.

11. This is paraſitic on trees in the hotter parts of South America. Profeſſor Jacquin deſcribes it as flouriſhing extremely well in the ſtove, and flowering through the whole ſummer and autumn, but not perfecting its fruit. It is a ſmooth plant, with large deep green leaves, riſing from channelled footſtalks: they are of a ſubcoriaceous ſubſtance, and marked with lateral veins: the ſpathe is ſeſſile, ſuberect, green, flat, and leaf-like, but ſmaller than the leaves. The ſpathe is finger-ſhaped, upright, and about two inches long; and very thickly covered with flowers: the petals are white with green tips [g].

12. Native of woods in Cayenne, where it was diſcovered by Aublet. It differs from the former in having ovate-acuminate leaflets, which are always five in number. The corolla is hexapetalous, and the ſtamens ſix. The plant riſes with ſeveral ſtems, which are voluble and ſcandent, and are ſcattered over the trunks of trees; rooting at the knots or joints. The leaves are alternate and ſmooth: the flowers numerous, and thickly ſet on the ſpadix [h].

13. This has already been deſcribed under *Dracontium fœtidum*, which ſee.

Mr. Miller was favoured with it by Mr. Peter Collinſon, (before 1759) who procured it from North America. It flowered two years in the garden at Chelſea, but in a very dry ſeaſon decayed. The flowers came up before there was any appearance of leaves, the ſpathe was large, and the ſpadix ſhort and blunt, the florets were ranged in a ſort of chequer-work diagonal to the ſpadix.

[POUTERIA. See *Labatia*.]

PRASIUM. (Πρασιον *of Dioſcorides.* Πρασιαι *are beds in gardens.* Πρασον *or* Πρασιον *is the leek; and* Πρασιον,

[a] Linn. ſyſt. [b] Linn. ſpec. [a] Jacquin. [b] Linn. ſpec. [b] Swartz, deſcr.

[a] Jacquin, collect. [b] Willdenow. [c] Swartz, deſcr. [d] Loureiro. [e] Jacquin. [f] Aublet.

is an herb resembling Horehound or Marjoram in Dioscorides and Pliny.)

Lin. gen. n. 737. *Reich. n.* 795. *Schreb. n.* 992. *Gærtn. t.* 66. *Juss.* 117.

Class. 14. 1. Didynamia Gymnospermia.

Nat. order of *Verticillatæ*. *Labiatæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, campanulate-turbinate, erect, bilabiate: *upper lip* wider, semitrifid, acute; *lower lip* a little smaller, two-parted.

COR. one-petalled, ringent: *upper lip* erect, ovate, obsoletely emarginate, concave: *lower lip* wider, trifid, reflex; the middle segment larger.

STAM. *Filaments* four, awl-shaped, pressed to the upper lip, spreading, shorter than the upper lip: two shorter than the two others. *Anthers* oblong, lateral.

PIST. *Germ* quadrifid. *Style* filiform, length and situation of the stamens. *Stigma* bifid, acute, with one segment shorter.

PER. *Berries* four, at the bottom of the calyx, roundish, one-celled.

SEEDS solitary, roundish.

OBS. *The seeds themselves, being clothed with a berried epidermis, have the nature of a berry. Hence we have a tetragymnospermous baccíferous plant, by which mark it is distinguished from all other plants of this order.*

ESSENTIAL CHARACTER.

Berries four, one-seeded.

SPECIES.

1. Prasium majus. *Great Spanish Hedge-nettle.*
   Lin. spec. 838. *Reich.* 3. 103. *hort. cliff.* 309. *upsal.* 173. *Gærtn. fruct.* 1. 321. *Desfont. atlant.* 2. 33. *Kniph. cent.* 4. *n.* 66. *Sabb. hort.* 3. *t.* 37.
   Lamium arboreum perenne creticum. *Zan. hist.* 112. *Raii hist.* 561.
   Galeopsis hispanica frutescens, Teucrii folio. *Tournef. inst.* 186. *Shaw. specim. n.* 249. *Zan. hist. t.* 80.
   Melissa fruticosa cretica sempervirens, Teucrii facie, flore albo. *Mor. hist.* 3. 408. *s.* 11. *t.* 21. *f.* 3.
   Teucrium fruticans, amplo & albo flore, italicum. *Barrel. ic. t.* 895.
   Leaves ovate-oblong serrate.
2. Prasium minus. *Small Spanish Hedge-nettle.*
   Lin. spec. 838. *syst.* 548. *Reich.* 3. 103. *hort. cliff.* 309. *Retz. obs.* 1. 22. *n.* 67.
   Lamium fruticans, Teucrii folio lucido, calyce & flore magno candido, tantilla purpura varie notato. *Cup. catbol.* 106.
   Melissa fruticosa sicula, calyce amplo patulo. *Raii hist.* 568.
   Leaves ovate with a double notch on each side.

DESCRIPTIONS, *&c.*

1. This rises with a shrubby stalk two feet high, covered with a whitish bark, and divides into many branches. The flowers come out from the bosom of the leaves in whorls round the stalks; they are white, and have large permanent calyxes, cut into five points.

[The branches are declining; the leaves are the size of those of Baum, cordate, smooth, blunt, petioled. Whorls of flowers approximating. Calyx large goblet-shaped, with ovate acuminate teeth. Corolla spreading: upper lip entire, obtuse, convex; lower three-lobed[1]. Seeds four, like berries, subglobular, convex on one side, angular on the other, turning black when ripe: they have three integuments, the outer fleshy thin and soft, the middle crustaceous and brittle, the inner membranaceous and dry[2]. Desfontaines remarks, that some of the seeds are usually abortive.

Native of Spain, Italy, Sicily, Tunis and Algiers, in hedges. It flowers here from june to august.—Cultivated by Mr. Miller in 1729[3].]

2. This has a shrubby stalk like the former, but rises a little higher; the bark is whiter, the leaves are shorter and ovate, and of a lucid green. The flowers are somewhat larger, and are frequently marked with a few purple spots.—Native of Sicily.

[1] Desfontaines. [2] Gærtner. [3] Hort. kew.

[Linneus doubts whether this be sufficiently distinct from the preceding to make it a species, or only a variety. Retzius asserts positively, that there is no character to distinguish them.]

PROPAGATION AND CULTURE.

These plants may be propagated either by cuttings, or from the seeds; if they are propagated by cuttings, they should be planted on a shady border towards the end of april; but the cuttings should not be taken from such plants as have been drawn weak, but rather from those which have been exposed to the open air, whose shoots are short and strong; and if a joint of the former year's wood is cut to each of them, they will more certainly succeed. These cuttings may remain in the same border till they are well rooted, when they may be transplanted into the places where they are to remain, or into pots, that they may be sheltered in winter under a common frame, where they may have as much free air as possible in dry weather, but only require to be screened from hard frost. If they are propagated by seeds (which the plants produce in plenty every year) they should be sown on a bed of light earth in april; and in may the plants will come up, when they require no other care but that of keeping them clean from weeds; and in the autumn following, they may be transplanted in the same manner as before directed for those raised from cuttings, and may be afterwards treated more hardily, as they acquire strength.

A plant or two of each of these species may be allowed to have a place where there are collections of the different sorts of ever-green shrubs, for the sake of variety; especially where the different sorts of Cistus, Phlomis, Tree-wormwood, and Medicago, are admitted, because these are equally hardy; and when a severe winter happens, which destroys the one, the others are sure of the same fate; but in mild winters they will live abroad, especially if they are planted in a dry rubbishy soil, and have a sheltered situation; but in rich wet ground, the plants growing vigorous in summer, are liable to injury from the early frosts in autumn.

[PREMNA. (*From πρεμνον, stirps, truncus.*)

Lin. gen. Reich. n. 823. *Schreb. n.* 1025. *Gærtn. t.* 56. *Juss.* 107.

Class. 14. 2. Didynamia Angiospermia.

Nat. order of *Personatæ*. *Vitices*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, campanulate, subbilobate, with the upper segment emarginate, permanent.

COR. one-petalled, irregular, tubulous: mouth quadrifid blunt: the two upper segments erect, shorter, the others spreading.

STAM. *Filaments* four, erect, middling: the two lower shorter. *Anthers* roundish.

PIST. *Germ* roundish. *Style* cylindrical, shorter. *Stigma* bifid.

PER. *Drupe* globular, one-celled.

SEED. *Nut* nearly four-cornered, four-celled, perforated by the axis.

ESSENTIAL CHARACTER.

Cal. two-lobed. *Cor.* four-cleft. *Berry* four-celled. *Seeds* solitary.

SPECIES.

1. Premna integrifolia.
   Lin. syst. 565. *Reich.* 3. 163. *mant.* 252.
   Cornutia corymbosa. *Burm. ind.* 133. *t.* 41. *f.* 1.
   Folium hirci. *Rumph. amb.* 3. 28. *t.* 134.
   Leaves quite entire.
2. Premna serratifolia.
   Lin. syst. 565. *Reich.* 3. 164. *mant.* 253. *Gærtn. fruct.* 1. 269.
   Cornutioides. *Lin. zeyl. n.* 416.
   Sambucus zeylanica odorata aromatica. *Herm. zeyl.* 14. *Burm. zeyl.* 209.
   Leaves serrate.

DESCRIPTIONS, *&c.*

1. This is a small tree, much resembling the next species, and perhaps only a variety of it. Leaves ovate or cordate-ovate, obtuse, quite entire. There is an acute-leaved variety with lanceolate-ovate leaves.—Native of the East Indies.

2. Branches

2. Branches round, purplish, with truncated margined scars on them from the fallen leaves. Leaves oppoſite, petioled, ovate, blunt, even, ſerrate, but quite entire towards the baſe. Stipules ſublanceolate, deciduous. Cymes terminating, firſt brachiate, then dichotomous. Bractes at the ramifications oppoſite, linear, minute. Flowers the ſame ſize with thoſe of *Viburnum*[m]. Calyx orbicular, quite entire, or obſoletely two-lobed, or ſlightly four-toothed. Drupe berried, ſmall, ſpherical, ruſeſcent or brown: fleſh thin, ſubcoriaceous; ſhell bony, ſubglobular or rounded four-cornered, four-celled, perforated at the axis. Seed one in each cell, ovate, acuminate downwards, convex on one ſide, obſcurely angular on the other, pale[n].—Native of the Eaſt Indies.]

PRENANTHES. (*From* πρηνης, *pronus*; *and* ανθος, *flos: from the flower hanging down.*)

Lin. gen. n. 911. *Rich. n.* 990. *Schreb. n.* 1236. *Gærtn. t.* 158. *Vaill. act. gall.* 1721. 2. 18. *Juſſ.* 168.

Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ Semiflosculoſæ*. *Cichoraceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Common* calycled, cylindrical, ſmooth; ſcales of the cylinder the number of the corollets; ſcales of the baſe few, unequal, very ſhort.

COR. *Compound* moſtly of a ſingle ring of florets; *Corollets* hermaphrodite, five to eight and more, equal. *Proper* monopetalous, ligulate, truncate, four-toothed.

STAM. *Filaments* five, capillary, very ſhort. *Anthers* cylindrical, tubulous.

PIST. *Germ* ſubovate. *Style* filiform, longer than the ſtamens. *Stigma* bifid, reflex.

PER. none. *Calyx* cylindrical, converging very ſlightly at the mouth.

SEEDS ſolitary, cordate. *Pappus* capillary, ſeſſile.

REC. naked.

OBS. *There is a ſpecies, in which the pappus is ſupported by a ſtipe.*

ESSENTIAL CHARACTER.

Cal. calycled. *Florets* in a ſingle row. *Pappus* ſimple, ſubſeſſile. *Recept.* naked.

SPECIES.

[1. Prenanthes tenuifolia. *Fine-leaved Prenanthes.*
Lin. ſpec. 1120. *Reich.* 3. 629. *Lepich. it.* 1. 264. *Krock. ſilef. n.* 1261. *Allion. pedem. n.* 828. *t.* 33. *f.* 2. *Villars dauph.* 3. 151.

P. anguſtifolius, flore purpureo. *Vaill. act.* 1721. 193.

Chondrilla anguſtiſſimo longiſſimo integroque folio. *Juſſ. act.* 1709.

Leaves linear quite entire.

2. Prenanthes chinenſis. *Chineſe Prenanthes.*
Lin. ſyſt. 714. *Thunb. jap.* 301.

Leaves linear-enſiform entire and toothed.

3. Prenanthes viminea. *Ruſhy-twigged Prenanthes.*
Lin. ſpec. 1120. *ſyſt.* 714. *Reich.* 3. 629. *Gouan, hort. monſp.* 409. *Villars dauph.* 3. 152. *Krock. ſilef. n.* 1262. *Allion. pedem. n.* 829. *t.* 52. *f.* 2. *Jacqu. auſtr.* 1. *t.* 9.

Lactuca decorticata. *Forſk. deſcr.* 216.

Chondrilla viminea viſcoſa monſpeliaca. *Bauh. pin.* 130. *prodr.* 68. 1.

C. viſc. caule foliis obducto. *Bauh. pin.* 130. *Raii hiſt.* 222. *Tournef. inſt.* 472. *Garid.* 263.

C. ſaxatilis viſcoſa, caule enemidophoro. *Column. ecphr.* 1. *t.* 240.

C. ſaxat. viſcoſo caule. *Park. theat.* 783. 5.

Fragments of the leaves adhering to the ſtem.]

4. Prenanthes purpurea. *Purple Prenanthes.*
Lin. ſpec. 1121. *ſyſt.* 714. *Reich.* 3. 629. *hort. cliff.* 383. *Gærtn. fruct.* 2. 358. *Gouan, hort.* 409. *Scop. carn. n.* 963. *Jacqu. auſtr.* 4. 9. *t.* 317. *Pollich, pal. n.* 732. *Krock. ſilef. n.* 1263. *Villars dauph.* 3. 150. *Allion. pedem. n.* 827. *Hall. helv. n.* 19.

P. amplexicaulis. *Mill. dict. n.* 4.

Lactuca montana purpuro-cærulea minor. *Bauh. pin.* 123.

L. ſylvatica purpurea. *Bauh. hiſt.* 2. 1005. *Raii hiſt.* 223.

L. ſylvatica. *Geſn. ad Cord. hiſt.* 140.

L. ſylveſtris purpureo flore. *Park. theat.* 814. 3.

Sonchus ſylvaticus. *Ger. emac.* 294. 10.

S. lævior punnonicus 4, purpureo flore. *Cluſ. hiſt.* 2. 147.

β. Prenanthes purpurea. *Mill. dict. n.* 2.
Lactuca montana purpuro-cærulea, major. *Bauh. pin.* 123.
Sonchus montanus purpureus tetrapetalos. *Col. ecphr.* 1. 246. *t.* 246.
Florets five, leaves lanceolate toothletted.

5. Prenanthes muralis. *Wall Prenanthes.*
Lin. ſpec. 1121. *ſyſt.* 714. *Reich.* 3. 630. *hort. cliff.* 383. *fl. ſuec. n.* 692. *Hudſ. angl.* 338. *Wither. arr. ed.* 3. 678. *Smith, angl. Engl. bot. t.* 457. *Curt. lond.* 5. 58. 306. *Lightf. ſcot.* 431. *Relh. cant. n.* 565. *Sibth. oxon. n.* 661. *Fl. dan. t.* 509. *Hall. helv. n.* 18. *Scop. carn. 2. n.* 964. *Reyg. ged.* 1. 191. *Pollich, pal. n.* 733. *Krock. ſilef. n.* 1265. *Villars dauph.* 3. 151.

Sonchus lævis laciniatus muralis, parvis floribus. *Bauh. pin.* 124.

S. lævior vulgaris 2. *Cluſ. hiſt.* 2. 146. 2.

S. lævis ſylvaticus 4. *Tabern.* 194. *Hall. Reich.*

S. lævis muralis. *Ger. emac.* 293. 5.

S. lævis alter parvis floribus. *Park. theat.* 805. 2.

S. fol. ſinuato hederaceo. *Merr. pin.*

S. alter folio profundis laciniis ſinuato hederaceo. *Lob. obſ.* 119. 1. *ic.* 1. 236. 1.

Lactuca ſylveſtris murorum flore luteo. *Bauh. hiſt.* 2. 1004. *Raii hiſt.* 223. *ſyn.* 162. *Petiv. brit. t.* 15. *f.* 5.

Chondrilla ſonchi folio, flore luteo palleſcente. *Tournef. inſt.* 475. *Garid.* 106.

Florets five, leaves runcinate.

6. Prenanthes altiſſima. *Tall Prenanthes.*
Lin. ſpec. 1121. *Reich.* 3. 630. *Pluk. phyt. t.* 317. *f.* 2. (Sonchus.)

P. canadenſis altiſſima, fol. variis, flore luteo. *Vaill. act.* 1721. *p.* 194.

Florets five, leaves three-lobed, ſtem erect.

[7. Prenanthes chondrilloides. *Chondrilla-like Prenanthes.*
Lin. ſyſt. 714. *Reich.* 3. 630. *mant.* 107. *Ard. ſpec.* 2. 36. *t.* 17. *Krock ſilef. n.* 1264.

Lactuca inermis. *Forſk. deſcr.* 144.

Florets ten, calyxes eight-cleft, leaves lanceolate, root-leaves undivided ſomewhat toothed.

8. Prenanthes japonica. *Japoneſe Prenanthes.*
Lin. ſyſt. 714. *Reich.* 3. 630. *mant.* 107. *Thunb. jap.* 302.

Florets fifteen, root-leaves lyrate, ſtem almoſt naked.

9. Prenanthes alba. *White Prenanthes.*
Lin. ſpec. 1121. *Reich.* 3. 631. *hort. cliff.* 383. *Gron. virg.* 113. 89. *Pluk. amalth.* 195.

Florets very many, flowers nodding ſubumbelled, leaves haſtate-angular.

10. Prenanthes repens. *Creeping Prenanthes.*
Lin. ſpec. 1122. *Reich.* 3. 631. *amoen.* 2. 360. *t.* 4. *f.* 23.

Hieracium heterophyllum. *Retz. obſ.* 2. 24. *n.* 80.

Creeping, leaves three-lobed.

11. Prenanthes pinnata. *Pinnate-leaved Prenanthes.*
Lin. ſyſt. 714. *ſuppl.* 347.

Shrubby, leaves unequally pinnate many-paired, leaflets linear quite entire, panicle compound.

12. Prenanthes integra. *Entire-leaved Prenanthes.*
Lin. ſyſt. 714. *Thunb. jap.* 300.

Leaves oblong entire ſmooth, panicle centrally.

13. Prenanthes debilis. *Weak Prenanthes.*
Lin. ſyſt. 714. *Thunb. jap.* 300.

Leaves ovate entire, ſtem almoſt naked erect.

14. Prenanthes dentata. *Tooth-leaved Prenanthes.*
Lin. ſyſt. 715. *Thunb. jap.* 301.

Leaves oblong toothed ſmooth, ſtem panicled.

15. Prenanthes haſtata. *Halbert-leaved Prenanthes.*
Lin. ſyſt. 715. *Thunb. jap.* 301.

Leaves haſtate embracing toothed, ſtem branched.

16. Prenanthes

[m] Lina. mant.

[n] Gærtner.

16. Prenanthes humilis. *Dwarf Prenanthes.*
Lin. ſyſt. 715. *Thunb. jap.* 302.
Leaves lyrate, lobes obtuſe, ſtem almoſt naked, flowers terminating in twos or threes.

17. Prenanthes multiflora. *Many-flowered Prenanthes.*
Lin. ſyſt. 715. *Thunb. jap.* 303.
Leaves petioled runcinate, lobes acute toothed, panicle faſtigiate diffuſed.

18. Prenanthes lyrata. *Lyrate-leaved Prenanthes.*
Lin. ſyſt. 715. *Thunb. jap.* 303.
Leaves runcinate-lyrate toothed, panicle contracted.

19. Prenanthes ſquarroſa.
Lin. ſyſt. 715. *Thunb. jap.* 303.
Leaves ſeſſile runcinate, ſegments recurved toothed.

DESCRIPTIONS, *&c.*

1. Root perennial, oblong, twiſted, oblique, creeping, and here and there putting forth other ſtraight roots. Stems erect, from two to three feet high and more, round, ſimple, leafy, ſlender. Leaves alternate, embracing, ſeſſile, bright green. From the axil of each leaf iſſues a panicle of flowers; the peduncles of which are one or two-flowered. Each flower has five florets, which are purple, as in the fourth ſpecies, which this reſembles, but the leaves are narrower, and rarely toothed at the baſe. Native of the South of Europe, on mountains[*].

2. The whole plant is ſmooth. Root-leaves attenuated at bottom, ſubpetioled, toothed, a hand in length: ſtem-leaves, the lower ones ſeſſile, enſiform, toothletted and entire, the upper ones lanceolate, entire, an inch long. Flowers panicled, yellow. Peduncles directed one way, drooping, capillary, naked. Native of China and Japan[†].

3. Root biennial or perennial, oblong, pale yellow. Stems decumbent, from a foot or eighteen inches to two feet or even three feet in length, hard, round, whitiſh, viſcid, ſtriated, branched, covered by a portion of the leaf which is faſtened along it. Root-leaves pinnatifid, and reſembling thoſe of *Lactuca perennis*: ſtem-leaves lanceolate, oblong, entire, viſcid. Flowers axillary, by threes, almoſt ſeſſile: calyx cylindrical, a little oval, ſmooth, compoſed of five large equal ſcales, and of four that are ſmaller, unequal, and membranaceous at the edge next the baſe: florets five yellow. Seeds oblong, flatted below; terminated by a ſmall ſeſſile egret. It is not eaſy to diſtinguiſh this plant at firſt ſight from *Lactuca ſaligna*, but the ſtem partly covered by the leaves, and the ſeſſile egret ſuffice for that purpoſe[‡].

Parkinſon calls it Galen's Gum Succory; and Ray, Wild Lettuce with booted ſtalks, which is a tranſlation of Columna's Greek name.

Native of the South of Europe; Ray gathered it about Montpelier, and near Meſſina in Sicily, on rocky hills. It flowers in june and july.

Allioni has another ſpecies, which he names *ramoſiſſima* (*n.* 830.) and figures in *t.* 33. *f.* 1. He ſays it approaches near to *viminea*, but that the latter is three times as high, and has much fewer branches; that the root-leaves are ſinuate-pinnatifid, with the extreme pinnule triangular, and that they are firm, not truly runcinate: whereas in *ramoſiſſima* the root-leaves are more tender, truly runcinate, not pinnatifid to the midrib, but only cut to the middle of the leaf, with the extreme pinnule linear-lanceolate. In *P. viminea* there are two, three or even four ſeſſile flowers: the florets are wide, marked with lines, yellow, five-toothed, the length of the calyx; of which the five inner long ſcales are nearly equal, the five outer are unequal. The ſtem-leaves are pinnatifid, and have hairs here and there at the midrib.—The leaves in *P. ramoſiſſima* are quite ſmooth, and not villoſe underneath, glaucous, even, tender, with a white rib: the ſtem is branched from the bottom; the branches are erect and ſimple; the leaves on the branches alſo are decurrent, lanceolate, and quite entire; there are two or three flowers from the axils of the leaves, with the florets twice as long as the calyx, which has all the ſcales imbricate and unequal; the florets are five-toothed, but narrower than in *viminea*.

Native of the county of Nice on the ſandy coaſt; and near Caſtiglia d'Ivrea. It is biennial and annual.

4. Root perennial, tranſverſe, long, woody, fibrous. Stem erect, three, four or five feet high, much branched towards the top, terminated by nodding panicles of flowers, placed on naked axillary peduncles longer than the leaves. Leaves even, bright green above, glaucous underneath; ſtem-leaves acuminate, embracing, hooked, ſpreading, lanceolate, ſharply toothed. Calyx green, cylindrical, with unequal ſcales in two rows, four or five in the inner, three or four in the outer. Florets four or five violet-purple, five-toothed. Seeds oblong, acute, with a ſeſſile egret. Anthers reddiſh. Filaments white. Style purpliſh[†].

Villars remarks that this plant varies much; that the ſtems are even, firm, and cylindrical, very much branched at the end, and frequently at the axils of the leaves; that the ſtem-leaves are half embracing, and then are lengthened out and wider more or leſs towards the middle and end; that the whole plant is ſmooth; that the flowers come out on branches and peduncles divaricating almoſt at right angles, and very much ſubdivided; and that the purpliſh blue florets are five in number, almoſt always rolled up and oblique, and often pendant.

Receptacle very narrow, papilloſe, ſmooth. Seed oblong, attenuated below, obſoletely angular, ſtriated, pale ſtraw-colour. Pappus ſeſſile, caducous; with numerous, ſilky-white, capillary rays, ſparingly toothletted, half as long again as the ſeed[‡].

Gærtner remarks, that *Prenanthes* differs chiefly from *Chondrilla* in having a *ſeſſile* pappus. Juſſieu thinks they might make one genus. But there is no end of ſuch doubts in natural orders, which may be conſidered as one genus.]

Miller, following Caſpar Bauhin, has made two ſpecies of this, a larger and a ſmaller, one four feet, the other only a foot in height, with a more branching ſtem, and wider leaves embracing it.

[Native of Germany, Switzerland, Auſtria, the South of France and Italy. Ray found it on mounts Jura and Saleve near Geneva, and in mountain woods between Schaffhauſen and Conſtance.—It was cultivated in Britain by Mr. James Sutherland, in 1683; and flowers from july to ſeptember[‡].

5. Root perennial, ſomewhat woody, branched, pale brown, milky. The whole plant ſmooth, tender, brittle, milky. Stem from one to two or three feet in height, upright, ſimple, leafy, ſomewhat flexuoſe at top, round, glaucous, purpliſh. Root-leaves very like thoſe of the common Sow-thiſtle, darkiſh green, purple on the under ſide, on long foot-ſtalks, deeply notched, the lower ſegments few, ſomewhat oval, the terminating one ſomewhat triangular, but with five lobes, the middle one ſharp, toothed. Stem-leaves alternate, embracing, nearly ſimilar in figure; deeply notched; ſegments oppoſite, toothed, the terminating one largeſt. Panicle divaricating, flexuoſe; each flowering-branch ſubdivided into ſlender peduncles, bearing one flower, and having one minute ovate or lanceolate bracte. The outer calyx conſiſts of three ovate or lanceolate ſcales; the inner of five linear leaflets, with membranaceous edges, and commonly coloured. Florets five, in a ſingle row, lemon-coloured, ſpreading, longer than the calyx. Seeds oblong or obovate, compreſſed, furrowed, black, ſurmounted with an egret on a flat circular ſubſtance on a very ſhort ſtipe, rays ſimple, the length of the interior calyx[*].

There is a variety of it with the upper leaves undivided, deſcribed by Withering.

Native of many parts of Europe, in woods, hedges, and ſhady banks in a calcareous ſoil, and on walls; flowering from july to ſeptember. On Hampſtead-heath, and Hornſey in Middleſex. On the willows by the old ſluice at Grantcheſter near Cambridge, and

[*] Krocker, Allion. Villars. [†] Thunberg. [‡] Villars and Krocker.

[*] Krocker. [†] Gærtner. [‡] Hort. kew. [*] Woodv. Mſs. Smith. Withering.

on Chippenham-park wall. On the top of Staunton Harcourt-kitchen, and in Stokenchurch-woods, Oxfordſhire. Biſhopſgate-ſtreet, Norwich. Welwyn in Hertfordſhire. Croyden in Surry. Cleiſden in Buckinghamſhire. Weekly in Northamptonſhire. Baſford in Nottinghamſhire. Peak's-hole in Derbyſhire. —Our old authors call it *Ivy-leaved Lettuce*, or *Wall Sow-thiſtle*.]

6. The lower leaves are four or five inches long, and three broad, they are ſometimes divided into five lobes, but generally into three; they are indented a little on their edges, ſmooth, dark-green above, but pale underneath. Stems three feet high, with a few ſmall entire leaves on them: the flowers come out from the ſide of the ſtem in ſmall bunches; they are of a pale yellow colour, and appear in july. There is a variety with pale purple flowers, ariſing from the ſame ſeeds.

Native of Virginia and Canada; according to Mr. Miller, of moſt parts of North America, where it is called Dr. Witt's Rattle-ſnake root, the roots being taken for an antidote to the venom of the Rattle-ſnake. It ſeldom lives longer than two years. [It is however marked as perennial in the Kew Catalogue; where it is alſo obſerved from Plukenet, that it was cultivated in the botanic garden at Chelſea in 1696.

7. Stem panicled. Stem-leaves linear, at the ramifications only, minute: root-leaves lanceolate, petioled, naked, minutely toothed[x]. Peduncles axillary, ſlender, not ſo long as in *purpurea*. Flowers almoſt as in that, but fewer, not nodding. Panicle narrower, leſs dichotomous[y]. Native of the South of Europe.

8. Root-leaves very many, lyrate, ſmooth, reſembling thoſe of *Lapſana communis*: lower lobes alternate, blunt, connected, reflex, angular-toothed, ciliate with a few ſhort hairs; the terminating lobe is very large, blunt, gaſhed, angular-toothed, ciliate. Stem almoſt leafleſs, weak, erect, branched, ſmooth, from a foot to two feet high and more. Branches alternate, filiform, flowering. Flowers terminating, panicled, yellow. Peduncles and pedicels alternate, capillary, ſpreading. Bractes under the peduncles briſtle-ſhaped. Calyx many-leaved, erect, ſmooth; calycle very ſhort, ſmooth, with ovate acute ſcales. Native of Japan[z].

Linneus remarks, that the flowers are very numerous and very ſmall; the florets in each about fifteen; and the down longer than the calyx.

9. Native of North America. Introduced in 1778, by Mr. William Young. It flowers in july and auguſt[a].

10. Retzius is of opinion that this plant belongs rather to the genus of *Hieracium*. He thus deſcribes it. Stem creeping, rooting. Branches aſcending, leafy, ſmooth. Root-leaves on long petioles, three-parted, with the lobes oval, toothletted: ſtem-leaves on ſhort petioles, ovate, toothletted. Peduncles from one to three-flowered, ſcaly. Calyx ſimple, erect, glaucous, with linear-lanceolate leaflets, ſomewhat ſcarioſe at the edge, calycled as it were with ſmaller ſcales at the baſe. Corollas yellow, about twelve. Egret ſimple, ſeſſile. Receptacle naked. Linneus had it originally from Kamtſchatka; Bladh ſent it afterwards from China[b].

11. This is a ſhrub with roundiſh reſinous branches. Leaves approximating, petioled, a ſpan long, ſpreading and recurved; pairs of leaflets ten or twelve, very ſlender and ſmooth. Panicle large. Calyxes ſmooth. Flowers ſmall, yellow[c]. Retzius ſays that it is undoubtedly a ſpecies of *Sonchus*[d]. It was found by Maſſon on rocks in the iſland of Teneriffe[e].

12. Root annual. The whole plant ſmooth. Stem decumbent at bottom and creeping, then erect, round, ſtriated, ſimple or panicled, a ſpan high. Lower leaves aggregate, alternate, petioled, obovate-oblong, obtuſe, rolled back at the edge, a hand in length; ſtem-leaves embracing, ſomewhat toothed, an inch long. Panicles terminating, roundiſh. Flowers yellow.

13. The whole plant is tender and ſmooth. Root annual, fibrous. Stems ſeveral, weak, almoſt upright, few-flowered, a ſpan high. Root-leaves very many, petioled, obtuſe, a finger's length: ſtem-leaves few, ſeſſile. Flowers terminating, one, two or three together, yellow.

14. The whole plant is ſmooth. Stem round, ſtriated, erect, from a foot to two feet in height. Root-leaves petioled, oblong, blunt with a point, toothletted, a hand in length: ſtem-leaves embracing, ciliate-toothed at the baſe and in the middle, acute, a finger's length. Flowering branches rod-like, erect, panicled. Peduncles capillary, ſpreading, ſubumbelled.

15. The whole plant ſmooth. Stem round, ſtriated, flexuoſe-erect, purpliſh, two feet high. Branches alternate, ſpreading, like the ſtem. Leaves on the ſtem and branches half embracing, haſtate, ſubſpatulate, acute, acutely toothed, nerved, an inch long, the upper ones gradually diminiſhing. Flowers on the extreme branches and branchlets terminating, panicled, yellow. Panicle roundiſh, ſpreading little, with very ſhort peduncles.

16. Root annual, fibrous. The whole plant ſmooth. Stems radical, ſeveral, weak, decumbent or flexuoſe-erect, a hand in height. Root-leaves many, a finger's length: ſtem-leaves very few, half an inch long, all petioled; the outer lobe very large, rounded, ſomewhat toothed; the reſt minute, reflexed. Flowers ſolitary, or two or three together, yellow.

17. Root fibrous, annual. Stem branched at the bottom, erect, grooved, villoſe, ſmooth at top, panicled, two feet high. Root-leaves ſubpetioled, ſmooth, a ſpan long; lobes difform, angular, briſtly-toothed: ſtem-leaves gradually leſs. Peduncles flexuoſe: pedicels capillary.

18. Root fibrous, annual. Stem round, ſtriated, villoſe at bottom, gradually attenuated at top, ſmooth, weak, erect, ſeldom branched. Root-leaves very many: ſtem-leaves alternate, remote: all petioled, ſmooth above, villoſe-ſcabrous underneath, a finger's length, gradually leſs: lobes angular, toothed; the terminating lobe larger. Flowers terminating, panicled, yellow. Panicle roundiſh, little ſpreading, often drooping.

19. Stem fleſhy, herbaceous, round, ſtriated, ſmooth, erect, ſimple, two feet high. Leaves alternate, attenuated below; pinnas recurved, toothed at the upper margin, glaucous underneath, acuminate, a ſpan long. Flowers terminating, panicled. Panicle oblong, thyrſoid.—All theſe were found by Thunberg in Japan[f].]

PROPAGATION AND CULTURE.

Theſe plants are ſeldom admitted into gardens; but the ſeeds may be ſown ſoon after they are ripe in a ſheltered ſituation, and when the plants come up, they require no other care but to be kept clean from weeds.

[PRIAPEIA. See *Nicotiana*.

PRICKLY PARSNEP. See *Echinophora*.

——— PEAR. See *Cactus*.

PRIMROSE. See *Primula*.

———, Nightly or Tree. See *Oenothera*.

——— Peerleſs. See *Narciſſus*.

PRIMULA (*Dimin. from primus, being one of the earlieſt flowers of the ſpring.*)

Lin. gen. n. 197. *Reich. n.* 210. *Schreb. n.* 258. *Gærtn. t.* 50. *Juſſ.* 96. Primula veris, *Tournef. t.* 47. Auricula urſi, *Tournef. t.* 46.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Preciæ*. *Lyſimachiæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Involucre* many-leaved, many-flowered, very ſmall.

Perianth one-leafed, tubular, five-cornered, five-toothed, acute, erect, permanent.

COR. monopetalous. *Tube* cylindrical, the length of the calyx, terminated by a ſmall hemiſpherical neck. *Border* ſpreading, half-five-cleft: *ſegments* obcordate, emarginate, obtuſe. *Throat* pervious.

[x] Linn. mant. [y] Krocker. [z] Thunberg.
[a] Hort. kew. [b] Retz. obſ. [c] Linn. ſuppl.
[d] Obſ. 5. p. 6. [e] Linn. ſuppl.
[f] Thunberg. jap.

STAM. *Filaments* five, very ſhort, within the neck of the corolla. *Anthers* acuminate, erect, converging, included.

PIST. *Germ* globular. *Style* filiform, the length of the calyx. *Stigma* globular.

PER. *Capſule* cylindrical, almoſt the length of the perianth, covered, one-celled, opening with a ten-toothed top.

SEEDS numerous, roundiſh. *Receptacle* ovate-oblong, free.

ESSENTIAL CHARACTER.

Involucr. of an umbellet. *Cor.* tube cylindrical with a ſpreading mouth.

SPECIES.

[1. Primula verticillata.
Lin. ſpec. ed. Willd. 800. *Vahl. ſymb.* 1. 15. *t.* 5. *Forſk. deſcr.* 42.
Leaves ſerrate ſmooth, flowers in whorls.]

2. Primula vulgaris. *Common Primroſe.*
Hudſ. angl. 83. *Wither. arr. ed.* 3. 233. *Smith, brit.* 222. *engl. bot. t.* 4. *Relh. cant. n.* 156.

P. veris. *Mill. dict. n.* 1. *Gærtn. fruct.* 1. 233. *Blackw. t.* 52.

P. veris γ. acaulis. *Lin. ſpec.* 205. *Reich.* 1. 411. *Fl. dan. t.* 194. *Hall. helv. n.* 608.

P. acaulis. *Jacqu. miſc.* 1. 158. *n.* 1. *Ait. kew.* 1. 192. *Curt. lond.* 6. *t.* 16. *magaz.* 229. *Sibth. oxon. n.* 224. *Abbot, bedf.* 44. *n.* 150. *Villars dauph.* 2. 467. *Allion. pedem. n.* 331.

P. elatior β. acaulis. *Willd. ſpec.* 800.

P. ſylveſtris. *Scop. carn. n.* 204.

P. veris minor. *Dod. pempt.* 147. 3. *Ger.* 636. *emac.* 781. 5.

P. veris vulgaris. *Park. parad.* 242. *theat.* 535. 1. *Raii hiſt.* 1080. *ſyn.* 284.

P. veris pallido flore humilis. *Cluſ. hiſt.* 1. 302.—floribus ex ſingularibus pediculis majoribus ſimplicibus. *Baub. hiſt.* 3. 497.

Sylvarum primula. *Lob. ic.* 508. *obſ.* 305. 4.

Aliſma ſylvarum. *Column. phytob.* 6. 1.

Verbaſcum ſylveſtre majus ſingulari flore. *Baub. pin.* 241.

Leaves toothed wrinkled, ſcapes one-flowered, border of the corolla flat.

3. Primula elatior. *Great Cowſlip* or *Oxlip.*
Jacqu. miſc. 1. 158. *n.* 2. *Wither. arr. ed.* 3. 234. *Smith, brit.* 223. *engl. bot. t.* 513. *Sibth. oxon. n.* 226. *Abbot, bedf.* 44. *n.* 252. *Ait. kew.* 193. *Lin. ſpec. ed. Willd.* 801. *Fl. dan. t.* 434. *Roth. germ.* 1. 90. 2. 229. *Villars dauph.* 466.

P. inodora. *Relh. cant. n.* 157. *Hoffm. germ.* 67.

P. veris β. elatior. *Lin. ſpec.* 204. *Reich.* 1. 411. *Hall. helv. n.* 609.

P. vulgaris β. *Hudſ. angl.* 84.

P. pratenſis inodorata lutea. *Ger.* 635. 1. *emac.* 780. 2. *Raii hiſt.* 1081. *ſyn.* 284.

P. veris major. *Dod. pempt.* 147. 1.

P. veris altera. *Camer. epit.* 884.

P. ſylveſtris tertia. *Tabern.* 220.

P. veris caulifera, pallido flore inodoro aut vix odoro. *Baub. hiſt.* 3. 496. 2.

P. veris pallido flore elatior. *Cluſ. hiſt.* 301. 2. *Tournef. inſt.* 124. *Dale, pharm.* 206.

Verbaſculum pratenſe vel ſylvaticum inodorum. *Baub. pin.* 241.

Paralyſis altera odorata flore pallido polyanthos. *Park. parad.* 244. *n.* 9.

Leaves toothed wrinkled contracted in the middle, ſcape many-flowered, border of the corolla flat.

4. Primula officinalis. *Common Cowſlip* or *Paigle.*
Jacqu. miſc. 1. 159. *n.* 3. *Ait. kew.* 1. 193. *Wither. arr. ed.* 1. 234. *Curt. lond.* 6. *t.* 15. *Sibth. oxon. n.* 225. *Abbot, bedf.* 44. *n.* 151. *Hoffm. germ.* 67. *Roth. germ.* 1. 89. 2. 229. *Scop. carn. n.* 205. *Allion. pedem. n.* 332. *Desfont. atlant.* 170.

P. veris. *Hudſ. angl.* 84. *Smith, brit.* 223. *engl. bot. t.* 5. *Relh. cant. n.* 158. *Willd.* 800. *Villars dauph.* 2. 466. *Berg. phyt.* 61. *Bulliard. herb.* 171.

P. veris a officinalis. *Lin. ſpec.* 204. *Reich.* 1. 411. *Fl. dan. t.* 433. *Liu. mat. med.* 57. *hort. cliff.* 51. *ſi. ſuec. n.* 171. *Hall. helv. n.* 610. *Polich pal. n.* 195. *Blackw. t.* 226. *Plenck, ic.* 86.

P. elatior. *Mill. dict. n.* 2.

P. veris major. *Ger.* 635. 2. *emac.* 780. 1. *Raii hiſt.* 1081. *ſyn.* 284. *Camer. epit.* 883. *Beſl. eyſt. hyem.* 4. *f.* 5.

P. veris odorata, flore luteo ſimplici. *Baub. hiſt.* 3. 495. *Tournef. inſt.* 124.

P. veris flavo flore elatior. *Cluſ. hiſt.* 301. 1.

Verbaſculum pratenſe odoratum. *Baub. pin.* 241. *Fuchſ. hiſt.* 850.

Paralyſis vulgaris pratenſis flore flavo ſimplici odorato. *Park. parad.* 244. *n.* 8.

Aliſma pratorum. *Column. phytob.* 11.

Leaves toothed wrinkled contracted in the middle, ſcape many-flowered, border of the corolla concave.

5. Primula farinoſa. *Bird's-eye Primroſe.*
Lin. ſpec. 205. *Reich.* 1. 412. *Willd.* 802. *vir. cliff.* 12. *hort. cliff.* 50. *ſi. ſuec. n.* 172. *lapp. n.* 79. *Jacqu. miſc.* 1. 159. *n.* 4. *Ait. kew.* 1. 193. *Hudſ. angl.* 84. *Wither. arr. ed.* 3. 235. *Smith, brit.* 224. *engl. bot. t.* 6. *Curt. lond.* 6. *t.* 14. *Dickſ. hort. ſicc.* 1. 4. *Fl. dan. t.* 125. *Gunn. norv. n.* 26. *Gmel. ſib.* 4. 83. *t.* 44. *f.* 3. *Reyg. ged.* 2. 52. *Hoffm. germ.* 67. *Roth. germ.* 2. 231. *Scop. carn. n.* 206. *Villars dauph.* 2. 467. *Allion. pedem. n.* 334. *Kniph. cent.* 9. *n.* 80. *Hall. helv. n.* 623. (Aretia.)

P. veris rubro flore. *Cluſ. pann.* 340. *hiſt.* 300. 1. *Ger.* 639. *emac.* 783. 1, 2.

P. veris minor purpuraſcens. *Baub. hiſt.* 3. 498. *Raii hiſt.* 1084.

Verbaſculum umbellatum alpinum minus. *Baub. pin.* 242. *Raii ſyn.* 285.

Paralyſis minor flore rubro. *Park. parad.* 246.

Leaves oblong toothletted waved mealy underneath, umbel erect faſtigiate, border of the corolla flat.

[6. Primula longifolia. *Long-leaved Bird's-eye Primroſe.*
Curt. magaz. 392.
Leaves ſpatulate toothletted naked on both ſides, after flowering elongated almoſt erect, umbel erect many-flowered.

7. Primula cortuſoides. *Cortuſa-leaved Primroſe.*
Lin. ſpec. 206. *Reich.* 1. 413. *Willd.* 802. *Jacqu. miſc.* 1. 159. *Gmel. ſib.* 4. 85. *t.* 45. *f.* 1. *Curt. magaz.* 399.
Leaves wrinkled lobed, ſcape many-flowered.

8. Primula villoſa. *Mountain Primroſe.*
Lin. ſyſt. 193. *Willd.* 803. *Jacqu. miſc.* 1. 159. *auſtr.* 5. *app. t.* 27. *Hall. helv. n.* 613. *Allion. pedem. n.* 337. (hirſuta.)

β. P. pubeſcens. *Jacqu. miſc.* 1. 157. *t.* 18. *f.* 2.

P. villoſa. *Ait. kew.* 1. 194. *Curt. magaz. t.* 14. Auricula urſi 2. *Cluſ. hiſt.* 303.
Leaves flat ſerrulate hirſute or ſubvilloſe.

9. Primula nivalis. *Snow Primroſe.*
Lin. ſpec. ed. Wilid. 803. *Pallas it.* 3. *app. n.* 81. *t.* 9. *f.* 2.
Leaves lanceolate flat ſharply toothed very ſmooth.

10. Primula longiflora. *Long-flowered Primroſe.*
Lin. ſyſt. 193. *Willd.* 803. *Jacqu. miſc.* 1. 159. *auſtr.* 5. *app. t.* 46. *Allion. pedem. n.* 335. *t.* 39. *f.* 3. *Hall. helv. n.* 611.
Leaves ſerrate ſmooth, umbel nodding, tube of the corolla very long.

11. Primula glutinoſa. *Glutinous Primroſe.*
Lin. ſyſt. 193. *Willd.* 803. *ſuppl.* 133. *Jacqu. miſc.* 1. 159. *auſtr.* 5. *app. t.* 16. *Ait. kew.* 194. Auricula urſi ſeptima. *Cluſ. hiſt.* 304. *Pluk. phyt. t.* 149. *f.* 6.
Leaves ſerrulate ſmooth glutinous, leaflets of the involucre very large.

12. Primula marginata. *Silver-edged Primroſe.*
Curt. magaz. 191. *Lin. ſpec. ed. Willd.* 804.
Leaves obovate ſerrate-toothed white-edged, ſcape many-flowered, leaflets of the involucre ſhorter than the peduncle.]

13. Primula Auricula. *Auricula* or *Bear's-ear.*
Lin. ſpec. 205 *ſyſt.* 192. *Reich.* 1. 412. *Willd.* 804. *vir. cliff.* 12. *hort. cliff.* 50. *upſ.* 36. *Jacqu. miſc.* 1. 160. *n.* 9. *auſtr.* 5. *p.* 7. *t.* 415. *Hall. helv. n.* 612. *Scop. carn. n.* 207. *Allion. pedem.*

pedem. n. 336. *Kniph. cent.* 1. *n.* 67. *Sabb. hort.* 1. *t.* 98.

α. Sanicula alpina lutea. *Baub. pin.* 242.
Auricula urſi. *Camer. epit.* 706. *Mill. dict.*—prima. *Cluſ. hiſt.* 302.—flore luteo. *Baub. hiſt.* 3. 499. *Ger.* 640. 1. *emac.* 784. 1. *Raii hiſt.* 1082. *Tournef. inſt.* 120.—lutea. *Park. parad.* 238. 12—17.
Yellow Auricula.

β. Sanicula alpina purpurea. *Baub. pin.* 242.
Auricula urſi flore purpureo. *Park. parad.* 235. 1. &c. *Ger.* 640. 2. *emac.* 784. 2. *Raii hiſt.* 1083.
Purple Auricula.

γ. Sanicula alpina flore variegato. *Baub. pin.* 243. *Park. parad.* 239. 20. & 240. 21.
Variegated Auricula.

Leaves obovate ſmooth ſerrate, ſcape many-flowered about the length of the leaves.

[14. Primula gigantea. *Tall Primroſe.*
Lin. ſpec. ed. Willd. 805. *Jacqu. miſc.* 1. 160. *Gmel. ſib.* 4. 84.
Leaves rhomb-ovate ſerrate ſmooth, ſtem few-flowered very tall.

15. Primula minima. *Dwarf Primroſe.*
Lin. ſpec. 205. *ſyſt.* 193. *Reich.* 413. *Willd.* 805. *Jacqu. miſc.* 1. 160. *vind.* 208. *obſ.* 1. 25. *t.* 14. *auſtr. t.* 273. *Hall. helv. n.* 614. *Scop. carn. n.* 209. *Krock. ſileſ. n.* 296.
Sanicula alpina minima. *Lob. ic.* 871.—carnea. *Baub. pin.* 243.
Auricula Urſi 8 minima. *Cluſ. hiſt.* 1. 305.—min. flore carneo & niveo. *Baub. hiſt. Raii hiſt.* 1083.—fl. niveo. *Ger.* 642. 8. *emac.* 786. 7.
Leaves quite ſmooth and ſhining wedge-ſhaped ſharply ſerrate at the top only, ſcape few-flowered, (one or two-flowered.)

16. Primula integrifolia. *Entire-leaved Primroſe.*
Lin. ſpec. 205. *ſyſt.* 193. *Reich.* 1. 413. *Willd.* 805. *Jacqu. miſc.* 1. 160. *vind.* 209. *obſ.* 1. 26. *t.* 15. *auſtr. t.* 327. *Hall. helv. n.* 615. *Scop. carn. n.* 208.
Sanicula alpina rubeſcens folio non ſerrato. *Baub. pin.* 243. *Raii hiſt.* 1083.
Auricula urſi quarta. *Cluſ. hiſt.* 1. 303. *t.* 304.—carnei coloris, fol. minime ſerratis. *Baub. hiſt.* 3. 868. *Scheuch. itin.* 1. 31. 2. 131.
Leaves quite entire elliptic, ſubcrenate-cartilaginous at the edges, umbel erect, calyxes with long tubes and very blunt.

17. Primula carniolica. *Carniolian Primroſe.*
Lin. ſyſt. 193. *Willd.* 806. *Jacqu. miſc.* 1. 160. *auſtr.* 5. *app. t.* 4.
Leaves quite entire elliptic, umbel erect, calyxes acute very ſhort.

18. Primula ſinmarchica. *Norwegian Primroſe.*
Lin. ſpec. ed. Willd. 806. *Jacqu. miſc.* 1. 160.
P. norvegica. *Retz. ſcand. n.* 240. *Fl. dan. t.* 188.
Leaves quite entire ovate on long petioles, umbel few-flowered erect, corolla funnel-form.

19. Primula viſcoſa. *Viſcid Primroſe.*
Lin. ſpec. ed. Willd. 806. *Allion. pedem. n.* 338. *t.* 5. *f.* 1.
Leaves ovate quite entire villoſe-viſcid, umbel erect, corollas ſalver-form.

20. Primula ſibirica. *Siberian Primroſe.*
Lin. ſpec. ed. Willd. 806. *Jacqu. miſc.* 1. 161. *Gmel. ſib.* 4. 83. *t.* 46. *f.* 1.
Leaves quite entire ovate on long petioles, umbel few-flowered nodding, corolla ſalver-form.

DESCRIPTIONS, *&c.*

1. Leaves radical, lanceolate ovate, ending in a flat petiole double the length of the leaves, unequally ſerrate towards the top, quite entire at bottom, acute, veined, mealy underneath, two inches long. Scape erect, round, the ſize of a gooſe quill, a foot high and more. Towards the top are two or three remote whorls, the lower ſix-flowered, the upper ones many-flowered. Bractes under the lower whorls lanceolate, ſerrate at top, an inch long; in the terminating whorl lanceolate-ſubulate, quite entire, all mealy underneath. Pedicels the length of the bractes, roundiſh, ſlender, mealy. Perianth one-leafed, bell-ſhaped, abbreviated, mealy, deeply five-cleft: ſegments ovate-lanceolate, acuminate. Tube of the corolla cylindrical, club-ſhaped, mealy at the baſe, an inch long[g].—Native of mount Kurma, by rivulets[h].

2. The common Primroſe has a perennial root, growing obliquely, appearing as if bit off at the end, beſet with thick reddiſh ſcales which are the remains of paſt leaves, ſending down numerous very long round whitiſh fibres; it has a ſingular ſmell, ſomewhat like that of Aniſe. Leaves obovate-oblong, about a hand's breadth in length, nearly upright, tapering to the baſe, blunt, veiny, wrinkled, ſmooth above, hirſute beneath, rolled back at the edge when young, ſlightly waved, unequally notched, the midrib whitiſh, terminating in a footſtalk of a reddiſh colour, channelled on one ſide and keeled on the other. Scapes or peduncles numerous, the length of the leaves, upright, round, hirſute, pale green, having awl-ſhaped bractes at the baſe, after the flowering is over bending back. Flowers upright, large, ſweet-ſcented. Corolla of a pale ſulphur colour; each of the five cleſts obcordate, and marked at the baſe with a ſpot of a much deeper yellow; the mouth has a faint rim round it. Filaments either within the tube or at the mouth of the corolla. Anthers oblong, ſomewhat three-cornered, converging. Germ ſuperior, ſmooth. Style uſually ſhorter than the tube[i]. Capſule ovate, narrower upwards, ſmooth, opening at top with ten ſhort recurved teeth. Receptacle globular, pedicelled, excavated, looſe. Seeds about thirty, very ſlightly convex on one ſide, and obſoletely angular on the other, ſhagreened with raiſed dots, and of a blackiſh colour; the navel in the middle of the belly[k].

Native of moſt parts of Europe, in woods, coppices, hedge-rows and ſheltered lanes, particularly in a clayey ſoil; flowering in march and april with the wood Anemone.

The leaves and root of Primroſe ſeem to partake in ſome degree of the nature of thoſe of *Aſarum*, acting as ſtrong errhines or ſternutatories, when ſnuffed up the noſe; the roots act as emetics. Gerarde reports, as from the experience of a ſkilful practitioner, that a drachm and half of the powder of the dried roots, taken up in autumn, purges by vomit very forcibly, but ſafely[l].

The flower of the wild Primroſe, as every body knows, is of a pale brimſtone colour; but in ſome parts of the country it is found of a purple hue. Its varieties are very numerous, partly wild and partly obtained from culture.

Parkinſon enumerates the following:

1. The ſingle white. 2. The ſingle green. 3. The ſingle green and white. 4. The double green. 5. Maſter Heſket's double Primroſe; which Gerarde ſays was found in Clapdale-wood near Settle in Yorkſhire, by a learned gentleman of Lancaſhire, called maſter Thomas Heſketh, a diligent ſearcher of ſimples. 6. The ordinary double. 7. The ſmall double.

Gerarde, beſides the common, figures the double white and the green Primroſe. Johnſon has added a figure of Heſketh's Primroſe; Mr. Curtis ſays he has not met with this curious variety in any of the collections about London. The following are the moſt ſtriking varieties which he has cultivated:

1. The ſingle white. 2. The paper white. 3. The red or purple of various ſhades. 4. The hoſe in hoſe. 5. The double yellow. 6. The deep velvet red. 7. The pale red or fleſh-coloured. 8. The dingy purple or Scotch Primroſe, which grows wild in Scotland, and is figured in the Flora Ruſtica. The double yellow is figured by Parkinſon and Beſler; and the double pink or lilac, a beautiful and much admired variety, is figured in Curtis's magazine. But the varieties of the Primroſe, ſo much eſteemed by florifts under the name of POLYANTHUS, are boundleſs.

A fine flower of this ſort ſhould poſſeſs a graceful elegance of form, a richneſs of colouring, and a perfect ſymmetry of parts. Its properties are in moſt

[g] Vahl. [h] Forſk. [i] Curtis, Smith. [k] Gærtner. [l] Lewis.

reſpects

reſpects the ſame as thoſe of the Auricula, as to the ſtem or ſcape, peduncles or flower-ſtalks, and the formation of the umbel, bunch or thyrſe, corruptly called the truſs.

The tube of the corolla above the calyx ſhould be ſhort, well filled at the mouth with the anthers, and terminate fluted rather above the eye.

The eye ſhould be round, of a bright clear yellow, and diſtinct from the ground colour.

The ground-colour is moſt admired when ſhaded with a light and dark rich crimſon, reſembling velvet, with one mark or ſtripe in the centre of each diviſion of the border, bold and diſtinct from the edging down to the eye, where it ſhould terminate in a fine point.

The petal (technically the pips) ſhould be large, quite flat, and perfectly circular, excepting the ſmall indentures between each diviſion, which ſeparate it into five (ſometimes ſix) heart-like ſegments.

The edging ſhould reſemble a bright gold lace, bold, clear and diſtinct, and ſo nearly of the ſame colour as the eye and ſtripes as ſcarcely to be diſtinguiſhed [n].

3. The Oxlip has the leaves contracted towards the middle almoſt as in the Cowſlip. Scapes few, erect, longer than the leaves, many-flowered. Flowers umbelled, pedicelled, the outer ones generally nodding; like thoſe of the Primroſe in form and colour, but ſmaller [o]. From this it is evidently diſtinguiſhed by its many-flowered ſcape; as it is from the Cowſlip by the flat border of the corolla. If it be a variety, it is rather of the former than the latter. Dr. Smith rather inclines to think that the Oxlip is a hybrid production or mule, from a Primroſe impregnated by a Cowſlip; its habit, the contraction towards the middle of the leaf, and the umbellate flower-ſtalk indicating (according to Linneus's ingenious idea) the father, whilſt in the corolla, its form, colour and ſcent, it moſt reſembles the mother [p]. To many this will ſeem fanciful; and to others, ſince the Oxlip produces fertile ſeed, it will appear doubtful.

Oxlip is found in woods, thickets, hedges, and ſometimes in paſtures, but it is by no means ſo common as the Primroſe and Cowſlip. Calcareous thickets and hedges in Cambridgeſhire; clayey paſtures in Suffolk; Headington-wick copſe, Stow-wood, and South Leigh in Oxfordſhire; common in ſome parts of Bedfordſhire; about Stilland and Shillingley-park in Suſſex; near Wray-houſe, Sir James Wright's, adjoining to the river Rhodon, in Eſſex; high paſtures near Little Wenlock in Shropſhire. It flowers in april and may.

4. The Cowſlip has a root like that of the Primroſe, but ſmelling more powerfully of Aniſe. Leaves obovate-oblong, contracted ſuddenly towards the middle; or rather ovate with the petioled winged; ſhorter than thoſe of the Primroſe by nearly one half, fuller at the edge, which is ſomewhat folded as well as notched, ſtronger, of a deeper green, not running ſo taper at the baſe, covered on the under ſide with ſofter and ſhorter hair; the petioles ſmoother, whitiſh with ſcarcely any red in them. Scapes few, three or four times longer than the leaves, round, upright, pale, villoſe. Involucre at the baſe of the umbel, ſurrounding the peduncles, conſiſting of many, very ſmall, concave, pale, acuminate leaflets. Flowers in an umbel, unequally pedicelled, hanging down, generally to one ſide, full yellow with an orange-coloured blotch at the baſe of each ſegment, contracted about the middle of the tube, where the ſtamens are inſerted, paler underneath, very fragrant. Calyx five-cornered, inflated, ſitting looſely about the tube of the corolla, villoſe; ſegments ovate, acute. Tube of the corolla a little longer than the calyx: border very ſhort, concave; ſegments emarginate; mouth ſimple, without any crown [q].

Native of Europe both in moiſt and upland paſtures, and on the borders of fields, in a clayey or loamy ſoil, preferring an open ſituation, and flowering in april and may. It is ſo common in many paſtures as to be an injurious weed, though reſpected for its elegance and uſe.

The leaves are ſometimes eaten as a pot-herb, and in ſalads. They are recommended for feeding ſilk-worms, and may ſerve the ſame purpoſe as ſeedling Lettuces, for the young worms, before the Mulberry leaves make their appearance. But the leaves of this tree only can feed the worms to maturity, to any good purpoſe.

The fragrant flowers make a pleaſant wine, approaching in flavour to the Muſcadel wines of the South of France. It is commonly ſuppoſed to poſſeſs a ſomniferous quality.

Theſe flowers have a roughiſh bitteriſh taſte, which they impart with their agreeable odour and a yellow tincture, both to water and ſpirit. Vinous liquors impregnated with them by maceration or fermentation, and ſtrong infuſions of them drank as tea, are ſuppoſed to be mildly corroborant, antiſpaſmodic and anodyne. An infuſion of three pounds of the freſh flowers in five pints of boiling water, is made into a ſyrup of a fine yellow colour, agreeably impregnated with the flavour of the Cowſlips [r].

Theſe plants are here deſcribed as three diſtinct ſpecies. Linneus, beginning his career at a time when varieties had attracted undue notice, perhaps went too far in avoiding a multiplication of ſpecies; in the preſent caſe at leaſt few botaniſts have followed him in conſidering the Primroſe, Oxlip and Cowſlip as one ſpecies. Had only the firſt and laſt exiſted in their pure natural ſtate, little doubt would probably have occurred of their being diſtinct ſpecies; but the Oxlip partakes ſo much of the nature of both, that it creates a ſuſpicion of all the three having been originally one, as Retzius (obſ. 2. p. 10.) ſtill affirms them to be, eſpecially when we become acquainted with their great mutability, and view a number of intermediate links connecting them ſtill more intimately. Linneus aſſerts, that the peduncles in the common wild Primroſe ſpring from a ſcape, which being ſo ſhort as to be concealed among the leaves, has not been obſerved; this latent ſcape has never occurred to me in the wild Primroſe; Mr. Curtis ſays he has found it in a few plants. I have however met with it, puſhing up a tall ſcape, which ſuſtained ſeveral flowers differing in no reſpect from the ordinary ſort except in this circumſtance. This forms a connecting link between the Primroſe and Oxlip. The Scotch Primroſe, figured in *Flora Ruſtica*, t. 62. is another link in the chain, and is a ſtep taken by nature towards the admired *Polyanthus*, of which culture has produced a variety almoſt infinite. Mr. Curtis informs us that wild Primroſes introduced into Dr. Buxton's garden, at Maize-hill near Greenwich, produced flowers both with and without a ſcape, and indeed became, colour excepted, perfect Polyanthuſes: and Willdenow ſays he has ſeen one-flowered peduncles and many-flowered ſcapes from the ſame root. I have not unfrequently found the common Primroſe wild, of a dingy purple colour, and the Scotch Primroſe ſhows a tendency in colour as well as plurality to the Polyanthus. Mr. Curtis relates, that in his garden the white hoſe in hoſe Primroſe produces early in the ſpring flowers on peduncles, and afterwards on a ſcape, or in a thyrſe; and that the Cowſlip and Oxlip ſometimes produce flowers on peduncles as well as on a ſcape. In other reſpects the Cowſlip does not ſeem to vary ſo much as the Primroſe, except in colour. I have ſometimes found the wild Cowſlip with the flowers of a fine red; in gardens this is not uncommon. Gerarde and Parkinſon figure a variety with double flowers, which ſeems now to be loſt; and Parkinſon enumerates ſeveral others in his Paradiſus: Mr. Curtis had a hoſe in hoſe variety with yellow and another with deep ſcarlet flowers. But what does all this prove, ſays Mr. Curtis, except that theſe plants, like many others, are ſubject to the ſportings of nature? May we not ſay rather, that theſe variations

[n] Maddock's Floriſt's Directory. p. 219.
[o] Smith. [p] Id. engl. bot. 543.
[q] Curtis, Smith, Withering, Lyons MS. in Relh.
[r] With. Engl. bot. Curtis, Lewis.

might well give occaſion to Linneus to conſider them all as one original ſpecies? though ſince they have ſome permanent diſtinctions, (which are given in the ſpecific characters) we cannot err in taking them for two diſtinct ſpecies at leaſt. Beſides the ſtriking character, ſays Mr. Curtis, drawn from the inflorescence, to ſay nothing of the leaves, how different is the corolla in ſize and ſhape, and how very different is the calyx? In their place of growth, and time of flowering there is a material difference, the Primroſe loving ſhade and ſhelter, and flowering from march to may with the Wood Anemone, and being much diſpoſed to flower again in autumn and even during winter, if the weather be not ſevere: the Cowſlip affecting open paſtures, flowering in may with the early ſpotted Orchis, and not manifeſting any diſpoſition to flower a ſecond time towards the cloſe of the year. Dr. Withering remarks, that the leaf-ſtalks of the Primroſe, when fully grown, are longer than the leaves, in the Oxlip ſhorter, in the Cowſlip often longer than the leaves.

The above diſtinctions are either inſufficient or not to be depended upon to furniſh ſpecific differences. Even the inflorescence is not conſtant; the corolla of the Oxlip is of a middle ſize between the other two; the place of growth is different, but yet the Cowſlip is ſometimes found under hedges; april is commonly aſſigned as the month of flowering for all, but the Primroſe appears in march and the Cowſlip in april. This ſpring (1800) the woods were covered with Primroſes in full blow on the 24th of march, and a few days after, I ſaw a ſingle bloſſom of the Cowſlip beginning to expand under a warm hedge. I have Cowſlips in my garden, that conſtantly blow a ſecond time in mild winters, during the months of november and december.

Linneus having united theſe plants in one ſpecies, had no difficulty in giving it the name of *veris*; but for thoſe who conſider them as three ſpecies, it is not ſo eaſy. *Acaulis* may tend to miſlead novices at leaſt, *veris* is too general, we have therefore applied the epithet *vulgaris* to the Primroſe, following Hudſon, Withering, Relhan and Smith. For the Oxlip we ſhould have preferred *inodora*, had it not been ſaid that the flowers are ſo far from inodorous, that they have a very grateful ſmell. *Elatior* may be a proper epithet for the Oxlip when it is compared with the Primroſe; but by no means in compariſon with the Cowſlip, which has a ſtill taller ſcape. Shakſpeare adverts to this in his beautiful deſcription of the Cowſlip in his Midſummer Night's Dream, wherein he makes it ſubſervient to the Queen of the Fairies—

"The Cowſlips tall her penſioners be."

In alluſion to the inſtitution of tall military courtiers by Queen Elizabeth, called *Penſioners*. The epithet *veris* is improperly applied to the Cowſlip, which flowers later than the Primroſe. *Officinalis* is more proper, the Cowſlip having been moſt uſed in medicine, though both that and the Primroſe are neglected in modern practice. After all, I confeſs myſelf not very well ſatisfied with the trivial names.

5. Root perennial, ſomewhat præmorſe, with numerous, long, perpendicular fibres, and ſweet-ſcented. Leaves obovate-lanceolate, bright green, ſmooth and even, thickiſh, here and there turned back on the edges; underneath veined and powdered with white meal. Scape a hand's breadth or ſpan in height, far exceeding the leaves, round, upright, ſtiff and ſtraight, of a pale green colour and mealy. Flowers ſweet-ſcented, in an upright umbel, having at its baſe a many-leaved involucre, each leaflet of which is awl-ſhaped, and placed at the baſe of each peduncle. Segments of the calyx upright, a little blunt, converging a little at their tips, of a dull green colour and mealy. Tube of the corolla longer than the calyx, contracted in the middle, but the neck ſomewhat enlarged, yellowiſh; ſmooth; the mouth open and yellow: border ſmall, flat, purple, pale underneath; ſegments linear-obcordate. Capſule twice the length of the calyx, brown, with the mouth five-toothed. Seeds brown[1].

This elegant plant is a native of many parts of Europe, eſpecially the moſt northern, and alſo of Siberia: with us it is found in Yorkſhire and Weſtmoreland in wet or boggy paſtures or by the ſide of rills, flowering in july and auguſt.

The flowers vary with different ſhades of purple, and they have been found entirely white; in point of ſize the plant is alſo ſubject to much variation; in a bog in Skirrith-wood near Ingleton, Mr. Curtis obſerved it a foot and half in height: in the cultivated plant he has ſeen it have a tendency to be viviparous, to produce one or more tufts of leaves among the flowers of the umbel. In its wild ſtate it ſeeds readily, and frequently when cultivated. Towards the end of ſeptember the outer leaves fade, and the heart of the plant forms itſelf into a knob or button, a kind of hybernacle: in the ſpring it, expands, and the leaves then appear wholly white and mealy; the corolla continues to envelope the germ till it has almoſt arrived at maturity; forming a ſort of calyptre to it[2].

In habit this ſpecies approaches moſt nearly to *Androſace* and *Aretia*. In thoſe genera however the tube of the corolla is oval, not cylindrical, and its orifice is more or leſs cloſed with glands; whereas in all the Primulas that part is open, and only ſlightly crenated. Nevertheleſs theſe three genera, and even *Cortuſa*, might perhaps be united without any great violence to nature[3].

6. This bears a great affinity to *P. farinoſa*, but the leaves differ in form, colour and mode of growth; when fully grown they are twice the length of thoſe of the other: they are not mealy, the under ſide being as green as the upper, and they have a greater tendency to grow upright. The ſcape is ſhorter and thicker. The flowers form a ſimilar umbel, but each is ſmaller than in *farinoſa*, and in point of colour much leſs brilliant. Upon the whole, though ſuperior in ſize, it is inferior to that in beauty. It flowers early in may. The original place of growth is not known.

Introduced by Meſſ. Grimwood and co. nurſerymen at Kenſington, about the year 1796. They had it from France, by Mr. Williams, nurſeryman near Paris[4].

7. In the wrinkled appearance of its foliage this approaches the common Primroſe, whilſt in its inflorescence, the colour of its flowers, and ſolitary ſcape, which riſes to an unuſual height, it bears an affinity to the *farinoſa*. In the winter it loſes the leaves entirely, and forms a ſort of bulbous hybernacle under ground; this circumſtance is the more neceſſary to be known, as it ſubjects the plant to be thrown away as dead. It flowers in june and july; and is a native of Siberia[5].

Linneus remarks, that it has the leaves of *Cortuſa*, with the flowers of *Aretia Vitaliana*.

Introduced by Meſſ. Lee and Kennedy, nurſerymen at Hammerſmith, in 1798 or 1799.

8. Leaves fleſhy but hirſute, in the ſmaller variety petioled, rhomboid, toothed on the two anterior ſides. Scape an inch high, ſuſtaining one or two flowers. Bractes ovate and lanceolate. Flower equal to the whole ſtem or leaf, purple, with the ſegments cordate, longer, gaſhed, with a pale eye. Calyx not mealy, hirſute, bell-ſhaped, blunt, half the length of the tube.

The greater variety, which Cluſius has figured, has ſcapes half a foot high, and as many as ſeven flowers on a ſingle ſcape: the leaves are much larger, petioled, rhomboidal or ovate, almoſt bald, but always with large teeth in the anterior part, and with the margins ciliate[6].

Allioni deſcribes his *hirſuta*; which he makes ſynonymous with Haller's plant deſcribed above, as having elliptic wedge-ſhaped leaves, hirſute all over, and ſomewhat viſcid, bluntly toothed in the wider part, and a many-flowered umbel. Colour of the flower violet-purple, with the neck whitiſh and contracted: border deeply cut to the neck; ſegments cordate, deeply emarginate, border flat. Scape round hirſute.

[1] Curtis. Smith. [2] Curtis. [3] Engl. bot. [4] Curtis magaz. [5] Idem. [6] Haller.

Calyx hirſute, with the ſegments longer than in *P. Auricula*. Tube of the corolla a little hirſute. It has nothing mealy in it. In the very high alps it is ſometimes very ſmall and one-flowered.

Native of the mountains of Carinthia and Switzerland. Allioni ſays the *hirſuta* begins where the *Auricula* ends, and is common in ſimilar places in the whole chain of the Alps from monte Veſulo into Savoy, and ſo to Switzerland.

β. The colour of the corolla in this variety is an elegant deep red, with a yellow eye; the leaves are longer and run down into a flat petiole to the root: though they are not ſo villoſe, yet they are not without very ſmall hairs, eſpecially towards the edges [f].

Mr. Curtis remarks, that with us it is ſo ſlightly villoſe as ſcarcely to deſerve that epithet, that it varies in the brilliancy of its colours, and is ſometimes white: he adds that Jacquin's plant does not quite agree with his. In Curtis's figure, the flowers are purple with a white eye, and the leaves are much ſhorter and broader than in Profeſſor Jacquin's: but large allowances may be made in plants that are ſo variable.—Native of Carinthia.

P. villoſa was introduced here in 1768, by Profeſſor de Sauſſure [g].

9. Leaves very ſmooth. Scape twice as high as the leaves. Involucre ſmall. Segments of the border in the corolla obcordate.—Native of the mountains of Dauria [h].

10. This reſembles *P. farinoſa*, but is much handſomer. The leaves are not mealy underneath, though paler; but they are longer. Scape higher. Bractes much longer. Flowers fewer, five or thereabouts. The calyxes have ſhort black hairs ſcattered over them, and are almoſt cut to the bottom; they are marked with five raiſed lines, are not mealy, but much larger. Tube of the corolla purple, very long and ſlender, an inch and half in length, and ſtanding high up above the calyx. Flower handſomer, violet-coloured not red, with narrower, ſemibifid ſegments; at the origin of each a ſpongy ſubſtance, forming a white ſpot, and all together a white eye [b].

It differs then from *P. farinoſa*, in having the leaves leſs mealy and leſs deeply toothed, the ſcape higher, fewer flowers in the umbel with the leaves of the involucre longer, the tube of the corolla three times as long, and the ſegments of the border narrower and of a violet purple colour [c].

Native of the mountains of the Upper Valais, Tyrol, Carinthia, Carniola, Italy and Croatia.

11. This has the ſtature of *P. farinoſa*. The umbel has from five to ſeven ſeſſile flowers. The involucre is from five to ſeven-leaved, the ſame length with the tube of the corolla. Calyx obovate, wrinkled. Segments of the corolla obcordate, violet-coloured. It has a ſmell like that of *Orchis conopſea*.

Native of the higher Alps, bordering on the ice and ſnow in Upper Carinthia and the Tyrol [d]. Introduced in 1777, by Meſſ. Kennedy and Lee [e].

12. In its farinaceous tendency this ſpecies accords with *P. Auricula*, but it is very unlike that in its wild ſtate, the leaves being much narrower, the flowers larger, and of a different colour. It differs from *glutinoſa* in the ſhortneſs of its involucre: from *villoſa* in having leaves much narrower, perfectly ſmooth in reſpect to *villi*, and in the colour of the flowers, which approaches to that of Lilac; but more eſpecially in its diſpoſition to become mealy, particularly on the edges of the leaves, between the ſerratures, where the mealineſs is ſo ſtrong as to make the leaf appear with a white or ſilvery edge. It is a delicate pretty plant, with a pleaſing muſky ſmell, and flowers in march and april.

Mr. Lee, of Hammerſmith, received it from the Alps in 1781, and it has continued unaltered by culture [f].

13. Leaves fleſhy, ſucculent, with the edges mealy, ſerrated, or entire according to Haller; deeply and equally toothed all round as Allioni affirms: but Scopoli ſays, the young leaves are entire, the adult ones ſerrate above the middle. Petioles leafy or winged. Leaflets of the involucre unequal, wide, lanceolate or blunt. Flowers very ſweet, four or five, in an upright umbel. Calyx one third of the length of the tube of the corolla, bell-ſhaped, toothed, mealy, as is alſo the ſcape. Tube of the corolla gradually widening upwards, not contracted at the neck: border concave, the ſegments emarginate but not deeply, and not cut to the neck. The moſt common colours are yellow or red, but it is found alſo purple and variegated, with a white eye powdered with meal. Capſule ſpherical or nearly ſo, flatted a little at top, of a coriaceous-cartilaginous ſubſtance, ſprinkled with meal; Haller ſays it is ſix-valved [g].

Native of the mountains of Switzerland, Auſtria, Styria, Carniola, Savoy and Piedmont; alſo about Aſtracan. It flowers in april and may. From Gerarde's herbal it appears that the Auricula was cultivated here in 1597. He calls it Mountain Cowſlip or Bear's-ear. Parkinſon ſays, "we in Engliſh call "them Bear's-ears, according to the Latin, or as they "are named by divers women *French Cowſlips*; they "may alſo be called *Mountain Cowſlips*." Ray names it *Bear's-ear, Oricola* or *French Cowſlip*. But all theſe are now diffuſed; and *Auricula* is become the general name.

The deſcription given above is from the wild plant of the Alps. The three principal varieties only are given, whence the innumerable cultivated ones are all derived. They differ not only in the colour of the corolla, but in the number of its ſegments, and of the ſtamens; not to inſiſt upon the difference obſervable in the leaves.

To ſhow what culture can perform in this ſpecies, we may mention from Morant's Colcheſter [h], that Henry Stow, of Lexden near that place, a famous raiſer of Auriculas, had ſome plants with no leſs than 133 bloſſoms upon one ſtem.

Gerarde figures the yellow, purple, red, ſcarlet, bluſh-coloured, and bright red, moſt of which grew then in the London gardens: but there does not ſeem to have been any attention paid to raiſing varieties from ſeed.

Parkinſon, in 1629, enumerates many varieties: 1. Purple or Murrey, with a white eye. 2. The ſame without any eye. 3. Tawny. 4. Deep or blood-red. 5. Violet. 6. Spaniard's bluſh. 7. Scarlet or light red. 8. Roſe-coloured. 9. Great White. 10. Leſſer White. 11. Greateſt fair Yellow. 12. Greater Yellow. 13. Great Straw-coloured. 14. Leſſer Straw-coloured. 15. Leſſer Yellow. 16. Deep Yellow. 17. Bluſh. 18. Hair-coloured. 19. Yellow Variable. 20. Green Variable.

"Many other varieties (he adds) were to be found, "with thoſe that are curious conſervers of theſe de-"lights of nature, either naturally growing on moun-"tains,—or raiſed from ſeed, as is more probable: "for ſeveral varieties have been obſerved to be got-"ten by ſowing of the ſeeds, every year lightly ſhew-"ing a diverſity, not obſerved before, either in the "leaf, or in the flowers."

The raiſing varieties from ſeed was then well known, but regular canons for diſtinguiſhing a good flower were not yet eſtabliſhed, as they probably were when the complete Florilege was publiſhed by John Rea, Gent. In the third edition of this work, printed at London in 1702, folio, we have the following Auriculas: *Purples*. 1. Fair Downham, one of the firſt good flowers that we had, named from the firſt owner, my very good friend Mr. John Downham, a reverend divine, and an induſtrious florift. 2. Mr. Good's purple, raiſed by Mr. Auſten of Oxford, and given to Mr. John Good of Baliol College. 3. Mrs. Buggs her fine purple, raiſed by her in Batterſey. 4. Mr. Whitſhore's purple, raiſed by my worthy friend William Whitmore, of Balmer near Hodgſden, Eſq. 5. Purple Fraufway. 6. Black Imperial. 7. Black Em-

[f] Jacq. miſc. [g] Hort. kew. [h] Willdenow. [a] Haller. [c] Allioni. [d] Linn. ſuppl. [e] Hort. kew. [f] Curtis.

[g] Haller, Scopoli, Allioni. [h] P. 92.

perour.

perour. 8. Purple-ſtriped. 9. Purple and lemon-colour ſtriped.

Red or *Scarlet-coloured*. 10. Mr. Auſten's Scarlet, is one of the beſt. Divers other excellent flowers have been raiſed in Oxford by Mr. Jacob Bobart, keeper of the public garden.

There are divers ſorts of Reds, upon which fantaſtical names have been impoſed—as 11. Fair Virgin. 12. Matron. 13. Alderman. 14. Mercury, and the other Planets. 15. The Cow. 16. The Red Bull, &c.

Yellows, of ſmall eſteem. Some of the Buff colours have been in good eſteem, and every Floriſt had his *Leather-coat*,—as Tradeſcant's, Lances, Tuggies, Turners, Collins, Lookers, Humphries, Meracows, Mows, Mullars, Randols, and Rickets Beazar, all good kinds of Leather-coats: and I have raiſed a Leather-coat myſelf from ſeeds, not inferior to the beſt.

White—of ſmall variety and eſteem: the beſt is called Virgin's milk.]

But to enumerate all the diverſities of this plant would be almoſt endleſs; for every year produces vaſt quantities of new flowers, differing in ſhape, ſize and colour: in the leaves alſo there is a great variety, ſo that the ſkilful floriſt can often diſtinguiſh the varieties from them.

It ſeldom happens that ſuch flowers as are in great eſteem at one time, continue to be regarded a few years after; ſtill finer or larger flowers being produced from ſeeds, and as the names convey little, and there are no deſcriptions of them, it is needleſs to give a liſt of them.

[The catalogue of Meſſrs. Maddock, of Walworth contains near five hundred varieties. The modern names are generally from ſome great perſonage, with the raiſers or floriſts name prefixed.

The properties of a fine Auricula are theſe:

1. The ſtem ſhould be ſtrong, upright, and of ſuch a height as that the umbel of flowers may be above the foliage of the plant.

2. The peduncles or foot-ſtalks of the flowers ſhould alſo be ſtrong, and of a length proportional to the ſize and quantity of the flowers; which ſhould not be leſs than ſeven in number, that the umbel may be regular and cloſe.

3. The tube, eye, and border ſhould be well proportioned; which they will be, if the diameter of the firſt be one part, of the eye three, and the whole border ſix parts or thereabouts.

4. The circumference of the border ſhould be round or nearly ſo, or at leaſt not what is called ſtarry.

5. The anthers ought to be large, bold and fill the tube well; and the tube ſhould terminate rather above the eye, which ſhould be very white, ſmooth and round, without cracks, and diſtinct from the ground-colour.

6. The ground-colour ſhould be bold and rich, and regular, whether it be in one uniform circle, or in bright patches; it ſhould be diſtinct at the eye, and only broken at the outer part into the edging: a fine black, purple, or bright coffee-colour contraſt beſt with the white eye; a rich blue, or bright pink is pleaſing, but a glowing ſcarlet or deep crimſon would be moſt deſirable, if well edged with a bright green; this however can ſeldom be expected.

The green edge is the principal cauſe of the variegated appearance in this flower, and it ſhould be in proportion to the ground-colour, that is, about one-half of each.

The darker grounds are generally covered with a white powder, which ſeems neceſſary, as well as the white eye, to guard the flower from the ſcorching heat of the ſun's rays[1].]

All flowers that want any of the above properties, are turned out into the borders of the garden or rejected wholly by every good floriſt; for as there are varieties every year from ſeeds, the bad ones muſt make room for their betters; but in ſome the paſſion for new flowers ſo much prevails, that ſuppoſing the old flower to be greatly preferable to a new one, the latter muſt take place, becauſe it is of their own raiſing.

[14. This very lofty ſpecies is a native of Siberia, and varies with a ſtem only eighteen inches high.

15. Root round, white within, blackiſh without, putting out very long whitiſh fibres horizontally, forming very large thick tufts, loaded with abundance of flowers. Leaves widening at the end, and there cut with from four to ſeven acuminate teeth, but quite entire at the ſides, ſeſſile, thickiſh, about half an inch long. Scape axillary, obſoletely triangular, ſmooth, erect, the length of the leaves or much ſhorter. Flower ſolitary, terminating, erect, ſupported by one or two linear bractes ſhorter than the calyx. Calyx round, almoſt half-five-cleft, blunt, ſmooth. Corolla purple: tube funnel-ſhaped, not contracted at the neck, commonly longer than the leaves, always longer than the calyx, ſometimes twice as long, whitiſh and hirſute within; border of the ſame length, with ſemibifid ſegments. Filaments in the lower part of the tube, often at the very bottom. Capſule very blunt, ſhining, brown[k].

Linneus ſays the corolla is yellow; Haller, Scopoli, Willdenow, that it is fleſh-coloured; Krocker and Jacquin that it is purple. Willdenow obſerves that it dries of a violet colour.

According to Haller, the root is large, the leaves very ſmall, with a right-lined, wide, ſerrate top, the ſcape ſcarcely a finger's length, with two ſharp narrow ſtipules (or bractes) and one or two inodorous flowers. It differs from the *villoſa* in having ſhining leaves not hirſute or bent in the arc of a circle, and much ſmaller; the flower lanuginoſe within, and the ſegments of the calyx blunt.

Scopoli ſays, the capſule is roundiſh, flat and red at top; containing as many as ſixty ſeeds, faſtened to an ovate, peduncled receptacle.

Native of mount St. Gothard, Schneeberg, and other mountains of Auſtria, &c. flowering from june to ſeptember.

16. In habit and ſtature this agrees with *P. Auricula*. The umbel is two or three-flowered, ſupported by an involucre of two, three or four linear leaflets the length of the peduncles. Tube of the calyx ſcarcely angular. Border of the corolla violet-coloured with ſemibifid ſegments: tube ſimple, without any contracted neck. Stamens in the middle of the tube. It varies very much in ſtature; nor does it grow in ſuch cloſe tufts as *P. minima*[l].

Haller ſays, that the leaves are ciliate at the edge; the ſcapes an inch or two inches in height, with one or two flowers at the top; the calyx bell-ſhaped, coloured, ſubhirſute.

According to Scopoli, the length of the calyx is one third part of the diameter of the corolla; the corolla red, the diameter of the border ſix or ſeven lines, the tube of the ſame length with the ſegments; filaments white; anthers yellow; germ green at the baſe, in other parts red and ſhining; ſtyle roſe-coloured, three lines in length; ſtigma pale green, gently inclining to one ſide. The flower has the ſmell of honey. Seeds from forty to fifty. He has found it with one flower only.

It is diſtinguiſhed from the next ſpecies, by having the leaves cartilaginous at the edge, ſcarce apparently crenulate or ciliate when examined with a magnifier; and the calyx tubular[m].

Native of the Swiſs, Pyrenean, Auſtrian, Styrian, and Carniolian mountains, as on Schneeberg, Etſcher, Struk near Idria, Grindovitz, Gothard, Speluga, &c. flowering towards the end of may; in gardens, where it flouriſhes very well, it flowers in april and may[n].

17. Leaves membranaceous, blunt, ſubrepand, not cartilaginous at the edge. Calyxes abbreviated.—Native of Carniola, in Idria, at the foot of a hill called Kobila[o].

18. Leaves ſmooth; calyxes tubular, blunt.—Native of the mountains of Norway[p].

[1] Maddock, 151.

[k] Jacqu. vind. [l] Jacqu. vind. and obſ. [m] Willdenow. [n] Jacquin. [o] Willdenow. [p] Retz. ſcand.

19. Root thick, at firſt duſky, then white, ſiliform, whence ariſe on a petiole an inch in length tongue-ſhaped leaves, a hand's breadth long, clammy, having a bituminous ſmell, finely villoſe, pale underneath, ſinuate, quite entire, in ſhape reſembling thoſe of *Cynoglossum vulgare*. Flowers pale blue, ſix or ſeven in an umbel, each on its proper pedúncle. Involucre of as many ſmall leaflets as there are pedúncles.

Native of the mountains of Piedmont, on rocks about the baths of Valderia[s].

20. Native of Siberia, in moiſt meadows, from the river Obo to the country beyond the lake Baikal.—Leaves ſmooth[t].]

PROPAGATION AND CULTURE.

2, 3, 4. The roots of the wild plants may be taken up and tranſplanted into gardens at michaelmas, that they may have ſtrength to produce their flowers early in the ſpring. They delight in a ſtrong ſoil, but will grow in almoſt any ſort of earth. The Primroſe ſhould have a ſhady ſituation.

POLYANTHUS.

The Polyanthuſes are all varieties of theſe, and have been ſo much increaſed and improved in the laſt century, as almoſt to equal the Auricula; and in ſome parts of England they are ſo much eſteemed as to ſell for a guinea a root, ſo that a great variety is continually raiſed, and many perſons are engaged in the culture of it.

The ſeveral varieties of Polyanthuſes are produced by ſowing of ſeeds, which ſhould be ſaved from ſuch flowers as have large upright ſtems, producing many flowers upon a ſtalk, which are large, beautifully ſtriped, open flat, and not pin-eyed. From the ſeeds of ſuch flowers there is room to hope for a great variety of good ſorts, but there ſhould be no ordinary flowers ſtand near them, leſt, by the mixture of their farina, the ſeeds ſhould be degenerated.

Theſe ſeeds ſhould be ſown in boxes filled with light rich earth in december, being very careful not to bury the ſeed too deep; for if it be only ſlightly covered with light earth, it will be ſufficient. Theſe boxes ſhould be placed where they may have the benefit of the morning ſun until ten of the clock, but muſt by no means be expoſed to the heat of the day, eſpecially when the plants begin to appear; for at that time, one whole day's ſun will entirely deſtroy them. In the ſpring, if the ſeaſon ſhould prove dry, you muſt often refreſh them with water, which ſhould be given very moderately; and, as the heat increaſes, you ſhould remove the boxes more in the ſhade, for the heat is very injurious to them.

By the middle of may theſe plants will be ſtrong enough to plant out, at which time you ſhould prepare ſome ſhady borders which ſhould be made rich with neats dung, upon which you muſt ſet the plants about four inches aſunder every way, obſerving to water them until they have taken root; after which they will require no farther care but to keep them clear from weeds, until the latter end of auguſt following, when you ſhould prepare ſome borders which are expoſed to the eaſt, with good light rich earth, into which you muſt tranſplant your Polyanthuſes, placing them ſix inches aſunder equally in rows, obſerving, if the ſeaſon proves dry, to water them until they have taken root; in theſe borders your plants will flower the ſucceeding ſpring, at which time you muſt obſerve to mark ſuch of them as are fine to preſerve, and the reſt may be tranſplanted into wilderneſſes, and other ſhady places in the garden, where, although they are not very valuable flowers, they will afford an agreeable variety.

Thoſe which you intend to preſerve, may be removed ſoon after they have done flowering (provided you do not intend to ſave ſeeds from them), and may be then tranſplanted into a freſh border of the like rich earth, allowing them the ſame diſtance as before, obſerving alſo to water them until they have taken root; after which they will require no farther care, but only to keep them clean from weeds, and the following ſpring they will produce ſtrong flowers, as their roots will be then in full vigour; ſo that if the kinds are good, they will be little inferior to a ſhew of Auriculas. Theſe roots ſhould be conſtantly removed and parted every year, and the earth of the border changed, otherwiſe they will degenerate, and loſe the greateſt part of their beauty.

If you intend to ſave ſeeds, which is the method to obtain a great variety, you muſt mark ſuch of them, which, as I ſaid before, have good properties. Theſe ſhould be, if poſſible, ſeparated from all ordinary flowers, for if they ſtand ſurrounded with plain-coloured flowers, they will impregnate each other, whereby the ſeeds of the valuable flowers will not be near ſo good, as if the plants had been in a ſeparate border, where no ordinary flowers grew; therefore the beſt way is to take out the roots of ſuch as you do not eſteem as ſoon as the flowers open, and plant them in another place, that there may be none left in the border, but ſuch as you would chuſe for ſeed.

The flowers of theſe ſhould not be gathered, except ſuch as are produced ſingly upon pedicels, leaving all ſuch as grow in large bunches; and if the ſeaſon ſhould prove dry, you muſt now and then refreſh them with water, which will cauſe their ſeed to be larger, and in greater quantity, than if they were entirely neglected. In june the ſeed will be ripe, which may be eaſily known by the pods changing brown and opening; ſo that you ſhould at that time look over the plants three or four times a week, gathering each time ſuch of the ſeed-veſſels as are ripe, which ſhould be laid upon a paper to dry, and may then be put up until the ſeaſon of ſowing.

As the plants which ariſe from ſeeds, generally flower much better than offſets, thoſe who would have theſe flowers in perfection, ſhould annually ſow their ſeeds.

[Polyanthuſes blow at the ſame time, and require nearly the ſame treatment as Auriculas, both with reſpect to ſoil and ſituation; they are however more impatient of heat and drought, and more partial to ſhade and moiſture. They may be ſet in the ſame-ſized pots, and in the ſame compoſt as the Auricula, only with the addition of more loam: or they may be planted on cool ſhady beds or borders, being very hardy, and ſeldom periſhing in the coldeſt and wetteſt ſeaſons, becauſe their parent is a native of this country; but during the heats of ſummer they are frequently deſtroyed, unleſs proper precautions be taken[r]. This diſlike of heat, ſeems to indicate that the Polyanthus is rather the offspring of the Primroſe, which requires ſhade, than of the Cowſlip, which grows in open paſtures; though Mr. Miller ſeems to regard it as a variety of the latter.

The Polyanthus is very liable to the depredations of ſnails and ſlugs, in the ſpring of the year; the plants and pots therefore ſhould be carefully examined on all ſides early in the morning. But its worſt enemy is a ſmall red ſpider or Acarus, which in ſummer forms its web on the under ſide of the leaves. Theſe little inſects, ſcarcely viſible without a magnifying glaſs, cauſe the leaves to become yellow and ſpotted, and eventually deſtroy the plant: they multiply with ſuch rapidity as to take poſſeſſion of a whole collection, in a very ſhort time.

Such plants as appear infected ſhould be immediately ſelected from the reſt, taken up, and ſoaked for two or three hours in a ſtrong infuſion of tobacco water, and then replanted in a freſh ſoil or compoſt, and removed to a ſituation at a diſtance from the former. But if the whole bed or border be overrun with this inſect, it is beſt to take up all the plants, and having ſoaked them, to plant them elſewhere.

The bed or border ſhould then be trenched up, and remain fallow to the next ſeaſon, or be planted with another crop not liable to this calamity.

Polyanthuſes may be increaſed by ſlips or offſets, taken off when the plants are freſh potted[t]. For other particulars, ſee P. AURICULA.

[s] Allioni. [t] Gmelin.

[r] Maddock, 219. [t] Idem, 220.

5. The Bird's-eye ſeeds readily in its wild ſtate, and alſo frequently when cultivated: but it is ſcarcely worth the pains to raiſe it from ſeed, ſince a ſtrong root may be divided ſo as to form many plants; the beſt time for doing this is in the ſpring, ſoon after the leaves are expanded. Place each offset in a ſeparate pot, filled with two parts of ſtiffiſh loam, and one part light ſandy bog-earth; water and ſet them in the ſhade, under a north wall or paling, but not under trees; keep them there during ſummer in pans of water, but in the autumn, as the wet ſeaſon comes on, take them out of the pans, and either lay the pots on their ſides, or place them during winter under a common cucumber frame, to keep them from immoderate wet, which this plant cannot bear, although it be a native of boggy meadows. The next, if not the ſame year, theſe plants will blow ſtrong; and thus they ſhould be treated every year, for Primulas in general require to have their roots frequently parted.

6. This is a hardy plant of ready growth, and will ſucceed either in the pot or border, by guarding it from the ſun in ſummer, and from ſevere froſt and too much wet in winter. It is increaſed by parting the roots, either in ſeptember or at the beginning of march. It is very liable to be injured by the Aphides or Plant-Lice.

7. Being yet a rare plant, this muſt be treated with care, as was directed for the fifth ſort. It may be raiſed from ſeeds, or increaſed by parting the roots; but it is apt to be loſt, if not duly attended to.

8. This may be treated like the three former ſorts, or as directed for the round-leaved Cyclamen.

12. This is a very delicate plant. To ſucceed in its cultivation, it ſhould be placed in a pot of ſtiffiſh loam, mixed with one third rotten leaves, bog-earth, or dung, and plunged in a north border, taking care that it does not ſuffer for want of water in dry ſeaſons; thus treated, it increaſes by its roots nearly as readily as the Auricula; and may be propagated by parting theſe in april or ſeptember*.

The above directions will amply ſuffice for the increaſe and management of the other alpine Primulas.]

13. Auricula.

In order to obtain good flowers from ſeeds, you muſt make choice of the beſt flowers you have, which ſhould be expoſed to the open air, that they may have the benefit of ſhowers, without which they ſeldom produce good ſeeds: the time of their ripening is in june, which you will eaſily know, by their ſeed-veſſel turning to a brown colour, and opening; you muſt therefore be careful leſt the ſeeds be ſcattered out of the veſſel, for it will not be all fit to gather at the ſame time.

The time for ſowing this ſeed is commonly in auguſt, but if it be ſown any time before Chriſtmas, it will be time enough.

The beſt ſoil for this ſeed is good, freſh, light, ſandy mould, mixed with very rotten neats dung, or very rotten dung from the bottom of an old hot-bed: with this fill the pots, boxes or baſkets in which the ſeeds are to be ſown; and having levelled the ſurface very ſmooth, ſow the ſeeds thereon, ſifting over them a little rotten willow mould; then cover them with a net or wire, to prevent cats or birds from ſcratching out, or burying the ſeeds; in which caſe they remain a year in the ground before the plants appear, if they ever appear at all. Many perſons never cover the ſeeds, but leave them on the ſurface, for the rain to waſh them into the ground, which is often the beſt method. Let the boxes, &c. be placed ſo as to receive half the day's ſun, during the winter ſeaſon; but in the beginning of march, remove them where they may have only the morning ſun till ten o'clock; for the young plants will now ſoon begin to appear, which, if expoſed to one whole day's ſun only, will be all deſtroyed.

During the ſummer ſeaſon, in dry weather, often refreſh them with water, but never give them too great a quantity at once. In july following, the plants will be large enough to tranſplant, at which time you muſt prepare a bed, or boxes, filled with the above-mentioned ſoil, in which you may plant them about three inches ſquare; and (if in beds) you muſt ſhade them every day, till they are thoroughly rooted, as alſo in very hot dry weather; but if they are in baſkets or boxes, they may be removed to a ſhady place.

When the ſeedling Auriculas are planted in beds, there ſhould be ſome rotten neats dung laid about ten inches under the ſurface, and beaten down cloſe and ſmooth: this will prevent the worms from drawing the young plants out of the earth, which they generally do where this is not practiſed. This dung ſhould be laid about half a foot thick, which will entirely prevent the worms getting through it until the plants are well eſtabliſhed in the beds; and the roots of the Auriculas will ſtrike down into the dung by the ſpring, which will make their flowers ſtronger than uſual: theſe beds ſhould be expoſed to the eaſt, and ſcreened from the ſouth ſun.

When you have taken all your plants, which are now come up, out of your boxes or pots, level the earth gently again; for it often happens, that ſome of the ſeeds will lie in the ground two years before they appear, eſpecially if they were covered too deep when ſown, as was before obſerved.

The ſpring following many of theſe flowers will ſhew, when you may ſelect ſuch of them as have good properties, which ſhould be removed each of them into a pot of the ſame prepared earth, and preſerved until the next ſeaſon, at which time you will be capable to form a judgment of the goodneſs of the flower; but thoſe that produce plain-coloured or ſmall flowers, ſhould be taken out, and planted in borders in the out-parts of the garden, to make a ſhew, or gather for noſegays, &c. the others, which do not produce their flowers the ſame year, may be taken up, and tranſplanted into a freſh bed, to remain till you ſee how they will prove.

The manner of propagating theſe flowers when obtained, is from offsets, or ſlips, taken from the old roots in april, when the flowers are in bloom: theſe offsets muſt be planted into ſmall pots filled with the ſame ſort of earth as was before directed for the ſeedlings, and, during the ſummer ſeaſon, ſhould be ſet in a ſhady place, and muſt be often (but very gently) refreſhed with water; but in the autumn and winter ſhould be ſheltered from violent rains. The ſpring following theſe young plants will produce flowers, though but weak; ſoon after they are paſt flowering, you muſt put them into larger pots, and the ſecond year they will blow in perfection.

But, in order to obtain a fine bloom of theſe flowers, you muſt obſerve the following directions.

Firſt, Preſerve your plants from too much wet in winter, which often rots and ſpoils them; but let them have as much free open air as poſſible; nor ſhould they be too much expoſed to the ſun, which is apt to forward their budding for flower too ſoon; and the froſty mornings, which often happen in march, thereby deſtroy their buds, if they are not protected therefrom. To prevent which, thoſe who are very curious in theſe flowers, place their pots in autumn under a common hot-bed frame, where, in good weather, the plants may enjoy the full air, by drawing off the glaſſes; and in great rains, ſnow, or froſt, the plants may be ſcreened by covering them. Where this method is practiſed with judgment, the flowers will be much ſtronger, and the plants will increaſe faſter than when they are expoſed abroad.

Secondly, In the beginning of february, if the weather is mild, you muſt take off the upper part of the earth in the Auricula pots, as low as you can without diſturbing their roots, and fill up the pots with freſh rich earth, which will greatly ſtrengthen them for bloom; as alſo prepare your offsets for tranſplanting in april, by cauſing them to puſh out new roots.

Thoſe plants which have ſtrong ſingle heads, always produce the largeſt cluſters of flowers; therefore the curious floriſts pull off the offsets as ſoon as it can be done with ſafety to their growing, to encourage the

mother

* Curtis.

mother plants to flower the ſtronger; they alſo pinch off the flowers in autumn, where they are produced, and ſuffer them not to open, that the plants ſhould not be weakened thereby.

Thirdly, You muſt cover your pots with mats in froſty weather, during this time of their budding for flower, leſt the ſharp mornings blight them, and prevent their blowing.

Fourthly, When your flower-ſtems begin to advance and the bloſſom buds grow turgid, you muſt protect them from haſty rains, which would waſh off their white meally farina, and greatly deface the beauty of their flowers; but at the ſame time obſerve to keep them as much uncovered as poſſible, otherwiſe their ſtems will be drawn up too weak to ſupport their flowers (which is often the caſe when their pots are placed near walls) give them gentle waterings to ſtrengthen them, but let none of the water fall into the center of the plant, or among the leaves.

Fifthly, when your flowers begin to open, you ſhould remove their pots upon a ſtage (built with rows of ſhelves, one above another, and covered on the top, to preſerve them from wet: this ſhould be open to the morning ſun, but ſheltered from the heat of the ſun in the middle of the day:) in this poſition they will appear to much greater advantage, than when the pots ſtand upon the ground; for, their flowers being low, their beauty is hid from us; whereas, when they are advanced upon ſhelves, we ſee them in a full view. In this ſituation they may remain until the beauty of their flowers is paſt, when they muſt be ſet abroad to receive the rains, and have open free air, in order to obtain ſeeds, which will fail if they are kept too long under ſhelter. When your ſeed is ripe, obſerve to gather it when it is perfectly dry, and expoſe it to the ſun in a window upon papers, to prevent its growing mouldy, and let it remain in the pods till the ſeaſon for ſowing it.

[Thoſe who are very nice in raiſing Auriculas, direct the compoſt to be made of one half rotten cow-dung two years old; one ſixth freſh ſound earth of an open texture; one eighth earth of rotten leaves; one twelfth coarſe ſea or river ſand; one twenty-fourth ſoft decayed willow wood; one twenty-fourth peaty or moory earth; one twenty-fourth aſhes of burnt vegetables, to be ſpread upon the ſurface of the other ingredients.

This compoſt is to be expoſed to the ſun and air, turned over once or twice, and paſſed as often through a coarſe ſkreen or ſieve: then it ſhould be laid in a regular heap from fifteen to eighteen inches thick, and in this ſtate remain a year, turning it over two or three times, and keeping it free from weeds.

The pots for Auriculas ſhould be hard baked: the inner diameter of the top ſhould be ſix inches and a half, of the bottom four inches, and they ſhould be about ſeven inches deep, for common-ſized blooming plants: but ſmaller plants and offſets ſhould have ſmaller ſhallower pots, and very large plants ſhould have larger pots in proportion; the bottom ſhould have a ſmall degree of concavity, and the hole ſhould be half an inch in diameter: the rims ſhould project about half an inch, in order to take up and remove them with greater eaſe and ſafety. The pots ſhould be buried in wet earth, or immerſed in water three or four days or a week, before they are wanted, to take off their abſorbency.

Tranſplant or pot the Auriculas annually ſoon after bloom; curtailing their fibres, if grown very long, and cutting off the lower part of the main root, if too long or decayed. The offſets at this ſeaſon ſtrike freely, and become well eſtabliſhed before winter. Examine the plant carefully, and where any unſoundneſs appears, cut it out entirely with a ſharp penknife; expoſe the wounded part to the ſun, and when it is quite dry, apply a cement of bees-wax and pitch in equal quantities, ſoftened in the ſun or before a fire. If the lower leaves be yellow or dried up, ſtrip them off in a direction downwards. Having put the hollow ſhell of an oyſter over the hole of the pot, fill three parts of it with compoſt, higheſt in the middle, place the plant there, with its fibres regularly diſtributed all round; then fill the pot with the compoſt adding a little clean coarſe ſand cloſe round the ſtem on the ſurface, and ſtrike the bottom of the pot againſt the ground or table to ſettle the earth.

The true depth to plant an Auricula is within half an inch of the loweſt leaves, becauſe the moſt valuable fibres proceed from that part; and the offſets will be thereby encouraged to ſtrike root ſooner. When theſe have formed one or more fibres of an inch or two in length, they may, by means of a piece of hard wood, or by the fingers, be ſeparated with ſafety, and planted round the ſides of a ſmall pot, filled with the ſame compoſt, till they are ſufficiently grown to occupy each a ſeparate pot: if a ſmall hand glaſs be placed over each pot it will cauſe the fibres to grow more rapidly; but if it be long continued, it will draw up and weaken the plants.

In the beginning of may, as ſoon as the operation of potting is finiſhed, the plants are to be placed in an airy, ſhaded ſituation, but not under the drip of trees. Here they are to remain till ſeptember or october, when they ſhould be removed into ſhelter.

In the firſt favourable weather in february diveſt the plants of their decayed leaves; and by the middle of that month earth them up; that is, take away the ſuperficial mould of the pots about an inch deep, and put in freſh compoſt, with the addition of a little loam, to give it more tenacity. This will contribute greatly to the ſtrength of the plants, and the vigour of their bloom; at the ſame time it will afford a favourable opportunity to ſeparate ſuch offſets as appear to have ſufficient fibre to be taken off at this early ſeaſon. The pots with theſe offſets ſhould be placed in a frame, in a ſheltered ſituation till their roots are eſtabliſhed.

Though froſt, unleſs it be very rigorous, will not deſtroy the plants, yet it will injure them, and perhaps ſpoil the bloom, eſpecially early in the ſpring: they ſhould therefore be covered with mats in a ſevere ſeaſon.

If any plant has more than one or two principal ſtems, it is adviſeable to pinch off the ſmalleſt and weakeſt, in order to render the bloſſoms of that which remains larger and more vigorous.

When the flowers (technically pips) become turgid, and begin to expand, ſelect the plants from the reſt, remove them to a calm ſhady corner, and ſuſpend ſmall hand-glaſſes over them.

The ſtage for the pots to ſtand on whilſt in bloom ſhould have a northen aſpect, and ſhould conſiſt of four or five rows of ſhelves, riſing one above another. The roof ſhould conſiſt of frames of glaſs. The talleſt blowing plants ſhould be placed behind, and the ſhorteſt in front. They muſt be regularly watered two or three times every week during the bloom.

In raiſing the Auricula from ſeed, if the boxes in which the ſeed is ſown be placed on the ſurface of a hot-bed, in a cucumber or melon frame, the ſeeds will begin to vegetate in about three weeks. The earth muſt be kept moderately moiſt, by ſprinkling it with a hard clothes-bruſh, dipped in ſoft water, warmed by ſtanding in the ſun. At the end of four or five weeks, when the young plants will be all come up, they muſt have gradually more air, and in a fortnight or three weeks the boxes ſhould be taken out of the frame, and placed in a warm ſituation, though not too much expoſed to the ſun till towards the end of april, when they may be removed to a cooler aſpect, where they can receive the ſun only till nine o'clock; and in may they ſhould be placed in the moſt cool and airy part of the garden; ſtill not neglecting to keep the earth moderately moiſt, and to protect them from violent rains.

As ſoon as any of the plants ſhow ſix leaves, tranſplant them into other boxes an inch and half or two inches aſunder: and when they are grown ſo as to touch each other, tranſplant them a ſecond time into larger boxes, at the diſtance of three or four inches, or into ſmall pots, where they may remain till they blow: and then ſuch as are very good ſhould be marked, and the bad ones deſtroyed. As ſoon as the bloom is over, thoſe that are marked ſhould be planted ſeparately in pots, and

taken

taken care of till they blow again, when their merit may be more accurately aſcertained. A great proportion of theſe ſeedlings will be plain-coloured (technically ſelf;) which are of no value but as common border flowers, unleſs they have good properties in other reſpects, or are ſingularly beautiful or brilliant in their colours[s].

PRIMULA. See *Aretia* and *Hydrangea*.

PRINCE'S FEATHER. See *Amarantbus*.

PRINCE'S WOOD. See *Cordia* and *Hamelia*.

PRINOIDES. See *Ilex*.]

PRINOS. (Πρῖνος, *the name of a tree in Theophraſtus and Dioſcorides. Perhaps from* πρίνω, *to ſaw.*)
Lin. gen. n. 441. *Reich. n.* 474. *Schreb. n.* 594. *Juſſ.* 379.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Dumoſæ*. *Rhamni*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, half-ſix-cleft, flat, very ſmall, permanent.

COR. one-petalled, wheel-ſhaped. *Tube* none. *Border* ſix-parted, flat: *ſegments* ovate.

STAM. *Filaments* ſix, awl-ſhaped, erect, ſhorter than the corolla. *Anthers* oblong, blunt.

PIST. *Germ* ovate, ending in a *Style* ſhorter than the ſtamens, and an obtuſe *Stigma*.

PER. *Berry* roundiſh, ſix-celled, much larger than the calyx.

SEEDS ſolitary, bony, obtuſe, convex on one ſide, angular on the other.

OBS. *It differs from* Ilex *chiefly in the number. Sometimes it excludes one ſixth part in the fructification.*

ESSENTIAL CHARACTER.

Cal. ſix-cleft. *Cor.* one-petalled, wheel-ſhaped. *Berry* ſix-ſeeded.

SPECIES.

1. Prinos verticillata. *Deciduous Winter-berry.*
Lin. ſpec. 471. *ſyſt.* 342. *Reich.* 2. 105. *Du Roi harbk.* 2. 157. *Gron. virg.* 39. 54. *Abbot, georg. t.* 86.
Alcanna major latifolia dentata. *Munt. phyt.* 213. *t.* 51.
Aquifolium fol deciduis. *Duham. arb.* 1. 62. *t.* 23.
Leaves lanceolate-ovate, pubeſcent underneath ſerrate on the whole margin, peduncles many-flowered.

2. Prinos glabra. *Evergreen Winter-berry.*
Lin. ſpec. 471. *Reich.* 2. 105. *Ait. kew.* 1. 478. *Abbot, georg. t.* 35.
Leaves lanceolate blunniſh ſmooth on both ſides, ſerrate at the tip.

[3. Prinos lucida. *Shining Winter-berry.*
Ait. kew. 1. 478.
Leaves elliptic acuminate even ſubſerrate at the tip.

4. Prinos dioica. *Dioecous Winter-berry.*
Vahl, ecl. 2. 25.
Leaves oblong-ovate ſubſerrate ſmooth coriaceous, peduncles axillary one or three-flowered, flowers dioecous tetrandrous.

5. Prinos nitida.
Vahl, ecl. 2. 26.
Leaves oblong-ovate ſerrate ſhining membranaceous, peduncles axillary one-flowered, flowers tetrandrous.

6. Prinos montana.
Swartz prodr. 58. *deſcr.* 622.
Leaves ovate ſerrate ſhining on both ſides.

7. Prinos ſideroxyloides.
Swartz prodr. 58. *deſcr.* 624.
Leaves roundiſh quite entire.]

DESCRIPTIONS, *&c.*

1. This riſes with a ſhrubby ſtalk to the height of eight or ten feet, ſending out many branches from the ſides the whole length. Leaves lanceolate, about three inches long, and one inch broad in the middle, terminating in an acute point, of a deep green, veined on the under ſide, alternate on the branches upon ſlender footſtalks. The flowers come out from the ſide of the branches, ſingle or two or three at each joint. Berries the ſize of Holly, turning purple when ripe. It flowers in july, and the ſeeds ripen in the winter.

[s] Maddock's Floriſt's Directory, 111—151.

[According to Du Roi, it varies with a ſeven-cleft, and ſometimes though rarely with an eight-cleft flower, having ſeven or eight ſtamens. Juſſieu alſo ſays, that it has ſometimes only five clefts in the flower and five ſtamens, and from five to eight ſeeds. Gronovius affirms that it is dioecous.]

Native of Virginia, and according to Mr. Miller, of other parts of North America. [Kalm obſerved it near Philadelphia.—It was introduced in 1736, by Peter Collinſon, Eſq.[t]

2. Leaves alternate, petioled, oblong, of a firm texture, ſmooth, acute, nearly reſembling thoſe of *Myrica*; there are commonly two ſerratures towards the tip. Peduncles axillary, ſmall, commonly three-flowered[u].]

It is of lower growth than the preceding; the leaves are ſhorter, and ſerrate at their points only. It is a native of Canada.

[Neither Linneus nor Miller had ſeen the flowers. The ſynonyms which the former has given from Cateſby, and Miller's figures belong to *Ilex vomitoria*. It was cultivated by Mr. Miller in 1759, and flowers in july and auguſt[x].

3. This was introduced about 1778, by Mr. James Gordon, from what country is not known. It flowers in july[y].

4. Branches the thickneſs of a ſwan's quill, with a gray bark dotted here and there, round below, angular towards the tip: branchlets alternate, duſky purple, ſmooth, ſomewhat angular, compreſſed at the tip. Leaves frequent, alternate, two inches wide, in the male often rounder, terminated by a ſhort point; in the female oblong ovate ſometimes emarginate, all a little bent back at the edge, remotely and obſoletely ſerrate but quite entire towards the baſe, ſmooth on both ſides, veined, ſcarcely ſhining on the upper ſurface, underneath pale with a few ſmall raiſed dots ſcattered about. Petioles duſky purple, half an inch long, keeled underneath.—In the Male, peduncles axillary, about twenty, the length of the petiole, moſtly three-flowered, but ſome one-flowered. Pedicels very ſhort. Calyx very ſmall, four-cleft. Petals four, oblong. Stamens four, ſpreading, the length of the petals. Anthers roundiſh. The rudiment of a germ, without either ſtyle or ſtigma.—In the Female, peduncles fewer, ſhorter, all one-flowered. The flowers a little larger. Calyx and Corolla as in the Male. Stamens four, with effete anthers. Germ oblong, blunt. Found in the iſland of Montſerrat by Ryan.

5. Branches angular, ſmooth, compreſſed a little at the tip, duſky purple. Leaves alternate, from two to three inches in length, and often two inches wide, little acuminate, blunniſh, remotely and obſoletely ſerrate, towards the baſe quite entire and often acute, very ſmooth on both ſides, veined, ſhining on the upper ſurface, on the under paler and not dotted. Petioles half an inch long, brown. Peduncles axillary, five or ſix, the length of the petiole, all one-flowered, ſmooth, brown. Calyx four-cleft; the ſegments ovate. Petals four, ovate, ſpreading, finally reflex. Filaments four, erect, a little longer than the petals. Anthers oblong, erect. Germ roundiſh. Style ſcarcely any. Stigma acute. Berry ovate, roundiſh, the ſize of Black Pepper.

It is allied to the preceding, but differs in having the flowering-branches more ſlender, brown not whitiſh: the leaves thinner, more ſhining, commonly narrowed towards the baſe and acute: fewer peduncles, all one-flowered: the flowers twice as large and hermaphrodite. Found in Montſerrat by Ryan[z].

6. Trunk twenty or thirty feet high, with an even brown bark. Branches ſubdivided, almoſt upright, round ſmooth. Leaves alternate, acuminate at both ends, ſerrate on the whole margin; ſerratures remote, acute-nerved, ſmooth, an inch and half long, ſtiffiſh, when dried of a dark livid colour. Petioles ſhort, round, ſmooth. Peduncles axillary, ſolitary, ſhorter than the leaves, half an inch long, filiform, com-

[t] Hort. kew. [u] Linn. ſpec. [x] Hort. kew. [y] Idem. [z] Vahl, eclogæ.

preſſed a little, three-flowered or three-parted: pedicels one-flowered: flowers ſmall, white. Calyx ſix-cleft: ſegments ſmall, ovate, convex. Corolla divided almoſt to the baſe into ſix parts: ſegments ovate-lanceolate, ſpreading, bent back at the tip. Filaments inſerted between the diviſions of the corolla. Anthers roundiſh, bifid at the baſe. Germ roundiſh, ſuperior. Style very ſhort, thick, permanent. Stigma ſubcapitate, depreſſed, rolled back at the edge, ſubſexfid. Berry bluntly ſix-cornered, ſmall, umbilicated with the ſtigma, black when ripe. Seed oblong, compreſſed, ſhining, black. It very much reſembles *P. lucida* in the flowers and leaves; but in that ſpecies the leaves are ſerrate only at the tip, paler underneath, and of a leſs ſtout conſiſtence.

Native of Jamaica, in coppices on the higheſt mountains.

7. The wood of this tree is hard. Branches ſubdivided, round, with an aſh-coloured bark, unarmed. Leaves on ſhort petioles, alternate, nerved, veined, ſmooth on both ſides, paler underneath, ſomewhat coriaceous. Peduncles axillary, longer than the petioles, four to eight cluſtered together, one-flowered. Flowers ſmall, whitiſh. Calyx ſix-toothed. Corolla ſix-parted to the very baſe, ſo as to be in a manner ſix-petalled: ſegments obovate, ſpreading, permanent, with the tips erect. Filaments inſerted into the baſe of the corolla, alternating. Anthers oblong, incurved. Germ roundiſh, ſuperior. Style none. Stigma ſeſſile, ſubcapitate, ſix-ſtreaked. Berry crowned with the ſtigma preſſed cloſe. Seeds ſix, oblong, grooved, cloſely contiguous.

Native of the Caribee iſlands, St. Chriſtopher's and Montſerrat [d].]

PROPAGATION AND CULTURE.

1, 2. Theſe are propagated by ſeeds, ſown ſoon after they are ripe upon a bed of light earth, covering them about half an inch with the ſame ſort of earth. The ſeeds which are ſo ſoon put into the ground, will many of them come up the following ſpring; whereas thoſe which are kept longer out of the ground, will remain a whole year before the plants will appear, in the ſame manner as the Holly, Hawthorn, and ſome others. When the young plants come up, they may be treated in the ſame manner as has been directed for the American Hawthorns; theſe being full as hardy: but they delight in a moiſt ſoil and a ſhady ſituation. In hot land they make little progreſs, and rarely produce any fruit.

[PRINUS. *See Quercus.*
PRIONITIS. See *Barleria.*
PRISMATOCARPUS. See *Campanula.*]
PRIVET. See *Liguſtrum.*
[——— Mock. See *Phillyrea.*
PROBOSCIDEA. See *Martynia.*
PROCKIA. (*So named by Browne.*)
Lin. gen. n. 674. *Reich. n.* 729. *Schreb. n.* 916. *Juſſ.* 340.
Claſſ. 13. 1. Polyandria Monogynia.
Nat. order of *Roſaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* three-leaved: *leaflets* ovate (ſeldom two very ſmall leaflets at the baſe.)
COR. none.
STAM. *Filaments* numerous, capillary, the length of the calyx. *Anthers* roundiſh.
PIST. *Germ* roundiſh, ſubquinquangular. *Style* filiform, the length of the ſtamens. *Stigma* bluntiſh.
PER. *Berry* quinquangular.
SEEDS very many.

ESSENTIAL CHARACTER.

Cal. three-leaved, beſides (ſometimes) two leaflets at the baſe. *Cor.* none. *Berry* five-cornered, many-ſeeded.

SPECIES.

1. Prockia Crucis.
Lin. ſpec. 745. *Juſſ.* 500. *Reich.* 2. 605. *Vahl, ſymb.* 3. 69 *t.* 64.

[d] Swartz, deſcr.

DESCRIPTION, *&c.*

This is a ſhrub with round branches. Leaves alternate, petioled, ovate, acuminate, ſerrate, ſmooth. Stipules linear. Flowers few, terminating, alternate, pedicelled; with linear bractes [e].—Stipules caducous. Peduncles from one to five, axillary, one-flowered, having one or two little ſcales in the middle [f]. Found in the iſland of Santa Cruz by Browne, who ſent it to Linnæus; and ſince that by Commerſon. Juſſieu ſuſpects it to be allied to *Laetia.*

The whole of this ſhrub is ſmooth; the bark of the branches is purpliſh. Leaves four inches long, or leſs, attenuated, ſcarcely cordate at the baſe, three-nerved, tender. Stipules ſickle-ſhaped, attenuated, a quarter of an inch long, toothed on the outer ſide to the very baſe, on the inner to the middle only. Racemes at the ends of the branchlets, from three to five-flowered. Peduncles filiform. Pedicels a little thicker under the flower, when mature longer than the common peduncle. Bracte towards the baſe of the pedicels. Calyx three or four-leaved: leaflets ovate, acute, ſmooth on the outſide, villoſe within, a little longer than the ſtamens. Style longer than the calyx. Berry globular, the ſize of a pea, mucronate with the permanent ſtyle. Seeds three-ſided, ſhining [g].

PROSERPINACA. (*An ancient name in Apuleius.* Proſerpina *of Pliny, from Proſerpine, Queen of the infernal regions, becauſe it grows in low places, infeſted with frogs and newts.* Gronovius. *Linneus derives it* a proſerpendo, *from its creeping.*)
Lin. gen. n. 102. *Reich. n.* 108. *Schreb. n.* 134. & *p.* 818. *Juſſ.* 68. Trixis. *Mitch.* 23. *Gærtn. t.* 24.
Claſſ. 3. 3. Triandria Trigynia.
Nat. order of *Inundatæ. Hydrocharides*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* three-parted, ſuperior: *leaflets* erect, acuminate, permanent.
COR. none.
STAM. *Filaments* three, awl-ſhaped, ſpreading, the length of the calyx. *Anthers* twin, oblong, acute.
PIST. *Germ* inferior, three-ſided, very large. *Style* none. *Stigmas* three, pubeſcent, thickiſh, the length of the ſtamens.
PER. *Drupe* ſmall, juiceleſs, ovate-three-ſided, three-winged, crowned with the permanent cloſed calyx.
SEED. *Nut* ſomewhat bony, three-ſided, three-celled: *kernels* oblong, faſtened by a thread.

ESSENTIAL CHARACTER.

Cal. three-parted, ſuperior. *Cor.* none. *Drupe* with a three-celled nut.

SPECIES.

1. Proſerpinaca paluſtris.
Lin. ſpec. 129. *Reich.* 1. 245. *Willd.* 488. *Act. upſ.* 1741. *p.* 81.
Trixis paluſtris. *Gærtn. fruct.* 1. 115. *Mitch. in ephem. nat. cur.* 1748. *n.* 23.

DESCRIPTION, *&c.*

Root creeping. Stems a foot high, roundiſh. Leaves alternate, lanceolate, ſerrate, ending in petioles; the lower or thoſe that are under water pinnatifid with linear ſegments. Flowers axillary, ſolitary. Fruit the ſame form as in *Polygonum* [h]. According to Gærtner, it is a three-ſided drupe, with each of the angles extended into a narrow membranaceous wing: the rind very thin, ſpongy-membranaceous: the ſhell whitiſh, three-celled; in each cell one oblong ſeed, acuminate downwards, of a pale reddiſh colour, faſtened by a thread aſcending from the baſe to the vertex of the ſeed, and faſtened to the inner ſide of it [i].

Native of Virginia in marſhes.

PROSOPIS. (Προσωπις, perſona ſ. larva, *a maſk.*)
Lin. gen. Reich. n. 568. *Schreb. n.* 706. *Juſſ.* 348.
Claſſ. 10. 1. Decandria Monogynia.
Nat. order of *Lomentaceæ. Leguminoſæ*, Juſſ.

[e] Linn. ſpec. [f] Juſſieu, gen. [g] Vahl. [h] Lin. ſpec. [i] Gærtner.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, hemiſpherical, ſlightly five-toothed.

COR. *Petals* five, lanceolate, ſeſſile, equal.

STAM. *Filaments* ten, filiform, equal. *Anthers* incumbent, grooved, verſatile.

PIST. *Germ* oblong. *Style* filiform, the length of the petals. *Stigma* ſimple.

PER. *Legume* oblong, linear, roundiſh, attenuated at both ends, jointed, ſmooth, pendulous.

SEEDS many, rounded-oblong, coloured, immerſed in a mealy ſubſtance.

ESSENTIAL CHARACTER.

Cal. bell-ſhaped, five-toothed. *Stigma* ſimple. *Legume* linear, many-ſeeded.

SPECIES.

1. Proſopis ſpicigera.
   Lin. ſyſt. 398. *Reich.* 2. 267. *mant.* 68. *Roxb. corom.* 3. 45. *t.* 63. *Burm. ind.* 102. *t.* 25. *f.* 3. (ſpicata.)

DESCRIPTION, *&c.*

This grows to a large tree, with a tolerably erect trunk; the bark deeply cracked, and of a dirty aſh-colour: branches irregular, very numerous, forming a globular, ſhady head: prickles ſcattered over the ſmall branches, but in ſome trees wanting. Leaves alternate, abruptly bipinnate, from two to three inches long; pinnas from one to four inches; when in pairs, oppoſite, and have a gland between; one inch and a half long. Leaflets oppoſite, from ſeven to ten pairs, obliquely lanceolate, ſmooth, entire, about half an inch long, and one ſixth of an inch broad. Stipules none. Spikes many, terminating, or from the exterior axils, filiform, nearly erect. Bractes minute, one-flowering, falling off. Flowers numerous, ſmall, yellow, ſingle, approximated. Calyx inferior, five-toothed. Petals linear-lanceolate, erect, recurved at the tip, ſmooth. Filaments united at the baſe, faſtened to the baſe of the petals, the length of the corolla. Anthers incumbent, fulvous, with a white gland at the apex of each, which falls off ſoon after the flower expands. Style crooked. Legume a ſpan in length, ſcarcely the thickneſs of a gooſe-quill, pendulous, not inflated. Seeds many, lodged in a brown, mealy ſubſtance.

It is a native of moſt parts of the Coromandel coaſt; flowering during the cold, and beginning of the hot ſeaſon.

The pod of this tree is the only part uſed; it is about an inch in circumference, and from ſix to twelve inches long; when ripe, it is brown, ſmooth, and contains, beſides the ſeeds, a large quantity of a brown mealy ſubſtance, which the natives eat; it has a ſweetiſh agreeable taſte, and may be compared to the Spaniſh Algaraba, or Locuſt-tree, Ceratonia Siliqua.

It is called *Tſhamie* by the Telingas; and *Vanni maram* by the *Tamuls**.]

PROTEA. (*One of the poetical names from* Proteus. *So named from the great variableneſs in the fructification.*)
   Lin. gen. n. 111. *Reich. n.* 117. *Schreb. n.* 143. *Gærtn. t.* 51. *Juſſ.* 78. Leucadendron. *Lin. gen. ed.* 6. *n.* 110. Aulax. *Berg.* Lepidocarpodendron, Hypophyllocarpodendron & Conocarpodendron. *Boerh.*

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Aggregatæ. Proteæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth common* uſually imbricate: *ſcales* permanent, various in form and proportion.
   Perianth proper none.

COR. *univerſal* uniform.
   Proper one, two or four-petalled, with the petals different in figure.

STAM. *Filaments* four, inſerted into the petals below the tip. *Anthers* linear.

PIST. *Germ* ſuperior, awl-ſhaped or roundiſh. *Style* filiform. *Stigma* ſimple.

PER. none. *Calyx* unchanged.

SEEDS ſolitary, roundiſh.

RECEPT. common naked or villoſe or chaffy.
   OBS. *The ſpecies of this genus differ very much from each other in all the parts of fructification, but agree in the eſſential character of the ſtamens, inſerted below the tip of the corolla.*
   P. pinifolia *and* racemoſa *have a one-flowered calyx.*
   P. parviflora *has an oblong ſtigma, bifid at the top.*

ESSENTIAL CHARACTER.

Cor. four-cleft or four-petalled. *Anthers* linear inſerted into the petals below the tip. *Cal.* proper none. *Nut* one-ſeeded, ſuperior.

SPECIES.

1. Pinnate: *with pinnate filiform leaves.*

[1. Protea decumbens. *Decumbent Protea.*
   Lin. ſyſt. 136. *ed. Willd.* 506. *Thunb. prodr.* 25. *diſſ. n.* 1. *t.* 1. *f.* 3.

P. procumbens. *Linn. ſuppl.* 116.
   Leaves trifid filiform, ſtem decumbent.

2. Protea florida.
   Lin. ſyſt. 136. *ed. Willd.* 506. *Thunb. prodr.* 25. *diſſ. n.* 2. *t.* 1. *f.* 1.
   Leaves trifid filiform, ſtem erect, heads ſolitary encompaſſed with bractes.

3. Protea cyanoides.
   Lin. ſyſt. 136. *ed. Willd.* 507. *Reich.* 1. 260. *mant.* 188. *Thunb. prodr.* 25. *diſſ. n.* 3.

Leucadendron cyanoides. *Lin. ſpec.* 137. *Berg. cap.* 27. *act. holm.* 1766. *p.* 326. *Pluk. mant.* 61. *t.* 345. *f.* 6. (Cyanus.)
   Leaves trifid-pinnate filiform, ſtem erect, heads ſolitary naked.

4. Protea patula.
   Lin. ſyſt. 136. *ed. Willd.* 507. *Thunb. prodr.* 25. *diſſ. n.* 4.
   Leaves trifid-pinnate filiform, ſtem erect, heads aggregate.

5. Protea pulchella.
   Lin. ſyſt. ed. Willd. 507. *Schrad. ſert. hannov.* 1. *faſc.* 2. *p.* 15. *t.* 7.
   Leaves bipinnate ſmooth filiform, heads terminating club-ſhaped aggregate leafleſs bracted.

6. Protea ſphærocephala.
   Lin. ſyſt. 136. *Reich.* 1. 260. *Willd.* 508. *mant.* 188. *Thunb. prodr.* 25. *diſſ. n.* 5.

Leucadendrum ſphærocephalum. *Berg. cap.* 26. *act. holm.* 1766. *p.* 327.

Anethifolius frutex africanus minor, capite tomentoſo. *Herm. afr.* 3.
   Leaves bipinnate filiform, peduncles ſhorter than the heads, calycine ſcales ovate villoſe at the baſe.

7. Protea Serraria. *Cut-leaved Protea.*
   Lin. ſyſt. 136. *Reich.* 259. *Willd.* 508. *mant.* 188. *Thunb. prodr.* 25. *diſſ. n.* 6. *Ait. kew.* 1. 125.

Leucadendron Serraria. *Lin. ſpec.* 137. *Berg. cap.* 28. *act. holm.* 1766. *p.* 327. *Burm. afr.* 264. *t.* 99. *f.* 1. (Serraria.) *Pluk. mant.* 1. *t.* 329. *f.* 1. (Abrotanoides.) *Seba, theſ.* 2. *t.* 63. *f.* 6. (Anethifolius.)
   Leaves bipinnate filiform rough-haired, peduncles longer than the heads, calycine ſcales ovate-lanceolate, rough-haired.

8. Protea triternata.
   Lin. ſyſt. 136. *Willd.* 509. *Thunb. prodr.* 25. *diſſ. n.* 7.
   Leaves bipinnate filiform ſmooth, peduncles longer than the heads, calycine ſcales lanceolate rough-haired.

9. Protea glomerata.
   Lin. ſyſt. 136. *Reich.* 1. 259. *Willd.* 509. *mant.* 187. *Thunb. prodr.* 25. *diſſ. n.* 8.

Leucadendron glomeratum. *Lin. ſpec.* 137.

L. elongatum. *Berg. cap.* 27.

Serraria fol. tenuiſſimis diviſis, capitulis tomentoſis. *Burm. afr.* 265. *t.* 99. *f.* 2.
   Leaves bipinnate filiform, common peduncle elongated, naked, pedicels longer than the heads.

10. Protea phylicoides.
   Lin. ſyſt. 137. *Willd.* 510. *Thunb. prodr.* 25. *diſſ. n.* 9.

Leucadendron

* Roxburgh, corom.

Leucadendron phylicoides. *Berg. cap.* 29. *act. holm.* 1766. *p.* 328.
Leaves bipinnate filiform, heads terminating solitary woolly.
11. Protea Lagopus,
Lin. fyst. 137. *Willd.* 510. *Thunb. prodr.* 25. *diff. n.* 10.
Leaves aggregate filiform, heads in spikes aggregate.
12. Protea spicata. *Spiked Protea.*
Lin. fyst. 137. *Reich.* 258. *Willd.* 511. *mant.* 187. *Thunb. prodr.* 25. *diff. n.* 11.
Leucadendron spicatum. *Berg. cap.* 25. *act. holm.* 1766. *p.* 326.
Leaves bipinnate filiform, heads in spikes distinct.
13. Protea Sceptrum.
Lin. fyst. 137. *Willd.* 511. *Thunb. prodr.* 25. *diff. n.* 12.
P. Sceptrum Gustavianum. *Lin. suppl.* 116. *Sparm. act. holm.* 1777. *p.* 55. *f.* 1.
Lower leaves bipinnate, upper trifid and entire.

2. Toothed: *with toothed callous leaves.*

14. Protea crinita.
Lin. fyst. 137. *Willd.* 511. *Thunb. prodr.* 25. *diff. n.* 13.
P. crinifiora. *Lin. suppl.* 117.
Leucadendron oleæfolium. *Berg. cap.* 15. *act. holm.* 1766. *p.* 320.
Leaves five-toothed smooth, stem erect, heads two or three terminating.
15. Protea Conocarpa. *Tooth-leaved Protea.*
Lin. fyst. 137. *Willd.* 512. *Thunb. prodr.* 25. *diff. n.* 14. *Ait. kew.* 1. 125.
Leucadendron Conocarpodendrum. *Lin. spec.* 136. *Berg. act. holm.* 1766. *p.* 321. *Pluk. phyt. t.* 200. *f.* 2.
Conocarpodendron fol. crasso, nervo lanuginoso, supra crenato ibique limbo rubro, flore aureo, cono facile deciduo. *Boerh. lugdb.* 2. 196. *ic.*
Scolymocephalus africanus latifolius lanuginosus, fol. in summitate crenatis. *Herm. afr.* 20. *Raii dendr.* 9.
Conophorus capitis bonæ spei fol. in summo dentato. *Raii app.* 240. *Petiv. mus.* 240.
Leaves five-toothed smooth, stem erect, head terminating.
16. Protea elliptica.
Lin. fyst. 137. *Willd.* 512. *Thunb. prodr.* 26. *diff. n.* 15.
Leaves elliptic three-toothed smooth, stem erect, head terminating.
17. Protea Hypophylla.
Lin. fyst. 137. *Willd.* 513. *Thunb. prodr.* 26. *diff. n.* 16.
P. Hypophyllocarpodendrum. *Lin. mant.* 191. *Reich. fyst.* 1. 265. *hort. cliff.* 29.
Leucadendron Hypophyllocarpodendrum. *Lin. spec.* 136. *Berg. cap.* 16. *act. holm.* 1766. *p.* 321. *Pluk. mant. t.* 440. *f.* 3.
Conocarpodendron fol. rigido angusto apice tridentato rubro, flore aureo. *Boerh. lugdb.* 2. 198. *ic.*
Scolymocephalos fol. angustis, in summitate tridentatis. *Raii dendr.* 9.
Leaves three-toothed smooth directed one way, stem decumbent, head terminating.
18. Protea cucullata.
Lin. fyst. 157. *Reich.* 1. 261. *Willd.* 514. *Thunb. prodr.* 26. *diff. n.* 17.
Leucadendron cucullatum. *Lin. spec.* 136. *Berg. cap.* 14. *act. holm.* 1766. *p.* 320. *Pluk. phyt. t.* 304. *f.* 6.
Hypophyllocarpodendron fol. inferioribus apice trifido rubro, superioribus penitus rubris glabris. *Boerh. lugdb.* 2. 206. *ic.*
Scolymocephalos africana, fol. angustis brevioribus, tribus in summitate denticulis, capitulis foliosis interceptis. *Herm. afr.* 20.
Leaves three-toothed smooth, heads lateral.
19. Protea tomentosa.
Lin. fyst. 138. *Willd.* 514. *suppl.* 118. *Thunb. prodr.* 26. *diff. n.* 18.
Leaves three-toothed tomentose.

20. Protea heterophylla.
Lin. fyst. 138. *Willd.* 515. *Thunb. prodr.* 26. *diff. n.* 19.
Leaves three-toothed and entire, stem decumbent.

3. Acerose: *with filiform awl-shaped leaves.*

21. Protea pinifolia. *Pine-leaved Protea.*
Lin. fyst. 138. *Reich.* 1. 258. *Willd.* 515. *mant.* 187. *Thunb. prodr.* 26. *diff. n.* 20.
Leucadendron pinifolium. *Lin. mant* 36.
Aulax pinifolia. *Berg. cap.* 33.
Pini foliis planta africana, cyperi capitulis. *Herm. afr.* 18.
Pini folio planta capensis, floribus spicatis. *Petiv. icill.* 47.
Leaves filiform, flowers in racemes not calycled smooth.
22. Protea racemosa. *Downy-flowered Protea.*
Lin. fyst. 138. *Reich.* 1. 258. *Willd.* 515. *mant.* 187. *hort. cliff.* 496. *Thunb. prodr.* 26. *diff. n.* 21.
Leucadendron racemosum. *Berg. cap.* 23. *act. holm.* 1766. *p.* 325.
Leaves filiform, flowers in racemes calycled tomentose.
23. Protea incurva.
Lin. fyst. 138. *Willd.* 516. *Thunb. prodr.* 26. *diff. n.* 22. *t.* 3. *f.* 2.
Leaves filiform incurved smooth, heads raceme-spiked tomentose.
24. Protea caudata.
Lin. fyst. 138. *Willd.* 516. *Thunb. prodr.* 26. *diff. n.* 23. *t.* 2. *f.* 3.
Leaves filiform rough-haired, heads subsessile in spikes.
25. Protea bracteata.
Lin. fyst. 138. *Willd.* 517. *suppl.* 118. *Thunb. prodr.* 26. *diff. n.* 24. *t.* 1. *f.* 2.
P. cancellata. *Lin. fyst. Reich.* 1. 270.
Leucadendron cancellatum. *Lin. spec.* 134. *Berg. act. holm.* 1766. *p.* 326.
Lepidocarpodendron fol. angustissimis graminеis, fructu cancellato, femine coronato. *Boerh. lugdb.* 2. 193. *ic.*
Scolymocephalus africanus foliis rosmarini acutis. *Herm. afr.* 20. *Raii dendr.* 10.
Leaves filiform-channelled, head terminating, bractles multifid.
26. Protea comosa.
Lin. fyst. 138. *Willd.* 517. *Thunb. prodr.* 26. *diff. n.* 25.
Lower leaves filiform, upper lanceolate, head terminating.
27. Protea purpurea.
Lin. fyst. 138. *Reich.* 1. 269. *Willd.* 518. *mant.* 195. *Thunb. prodr.* 26. *diff. n.* 26.
Leucadendron proteoides. *Lin. spec.* 134. *Berg. cap.* 14. *act. holm.* 1766. *p.* 326.
Leaves linear recurved, heads terminating drooping, stem decumbent.
28. Protea prolifera.
Lin. fyst. 138. *Willd.* 518. *suppl.* 118. *Thunb. prodr.* 26. *diff. n.* 27. *t.* 4. *f.* 5.
Leaves awl shaped appressed, stem proliferous.
29. Protea corymbosa.
Lin. fyst. 139. *Willd.* 518. *Thunb. prodr.* 26. *diff. n.* 28. *t.* 2. *f.* 1.
P. bruniades. *Lin. suppl.* 117.
Leucadendron corymbosum. *Berg. cap.* 21. *act. holm.* 1766. *p.* 326.
Leaves linear-subulate appressed, branchlets in whorls subfastigiate.
30. Protea nana.
Lin. fyst. 139. *Willd.* 519. *Thunb. prodr.* 26. *diff. n.* 29.
P. roscida. *Lin. mant.* 189. *Lin. fyst. Reich.* 1. 261.
Leucadendron nanum. *Berg. cap.* 22. *act. holm.* 1766. *p.* 325.
Conophoros capensis pini folio. *Raii suppl. app.* 243. *Petiv. gaz. t.* 25. *f.* 7.
Leaves linear-subulate, head terminating, calyx coloured.
31. Protea lanata.
Lin. fyst. 139. *Willd.* 519. *Thunb. prodr.* 26. *diff. n.* 30. *t.* 3. *f.* 1.
Leaves three-sided appressed, head terminating woolly.

4. Linear: *with linear leaves.*

§2. Protea torta.
Lin. fyſt. 139. *Willd.* 519. *Thunb. prodr.* 26. *diff. n.* 31.
Leaves linear oblique callous.

33. Protea alba.
Lin. fyſt. 139. *Willd.* 520. *Thunb. prodr.* 26. *diff. n.* 32.
Leaves linear ſilky tomentoſe.

5. Lanceolate: *with elliptic and lanceolate leaves.*

34. Protea aulacea. *Widow-wail leaved Protea.*
Lin. fyſt. 139. *Willd.* 520. *Thunb. prodr.* 26. *diff. n.* 33. *t.* 2. *f.* 2. *Ait. kew.* 1. 126.
Leaves linear-ſpatulate ſmooth, flowers in racemes not calyceled.

35. Protea umbellata. *Umbelled Protea.*
Lin. fyſt. 139. *Willd.* 520. *Thunb. prodr.* 26. *diff. n.* 34. *Ait. kew.* 1. 126.
Leaves linear-ſpatulate ſmooth, heads terminating, bractes multifid.

36. Protea linearis. *Linear-leaved Protea.*
Lin. fyſt. 139. *Willd.* 521. *Thunb. prodr.* 26. *diff. n.* 35. *t.* 4. *f.* 2. *Ait. kew.* 1. 127.
Leaves linear-ſpatulate ſmooth, head terminating tomentoſe.

37. Protea cinerea. *Gray Protea.*
Ait. kew. 1. 127. *Lin. ſpec. ed. Willd.* 521.
P. proſtrata. *Thunb. prodr.* 27 ?
Leaves linear-wedge-ſhaped ſilky, head terminating ſilky.

38. Protea Scolymus. *Small ſmooth-leaved Protea.*
Lin. fyſt. 139. *Willd.* 522. *Thunb. prodr.* 26. *diff. n.* 36.
P. ſcolymocephala. *Lin. fyſt. ed. Reich.* 1. 271.
Leucadendron ſcolymocephalum. *Lin. ſpec.* 135. *Berg. act. holm.* 1766. *p.* 323.
Lepidocarpodendron acaulon, &c. *Boerh. lugdb.* 2. 192. *ic.*
Scolymocephalus africanus, &c. *Raii hiſt.* 3. 10.
Leaves lanceolate acute ſmooth, head terminating round ſmooth.

39. Protea abyſſinica.
Lin. ſpec. ed. Willd. 522.
Gaguedi. *Bruce itin.* 5. *app.* 52. *ic.*
Leaves lanceolate attenuated at the baſe blunt, head terminating hemiſpherical.

40. Protea mellifera. *Honey-bearing red barked Protea.*
Lin. fyſt. 139. *Willd.* 522. *Thunb. prodr.* 26. *diff. n.* 37. *Curt. magaz.* 346.
P. repens. *Lin. mant.* 189. *fyſt. ed. Reich.* 1. 262.
Leucadendron repens α. *Lin. ſpec.* 135.
Lepidocarpodendron fol. anguſtis brevioribus ſalignis, calycis ſquamis elegantiſſime ex roſeo aureo albo atro-rubro variegatis, florum plumis albis. *Boerh. lugdb.* 2. 187. *ic.*
Scolymocephalus africana, fol. anguſtis villoſis, cono mellifero. *Raii hiſt.* 3. 9.
Leaves lanceolate-elliptic ſmooth, head terminating oblong ſmooth.

41. Protea repens. *Creeping Protea.*
Lin. fyſt. 139. *Willd.* 523. *Thunb. prodr.* 26. *diff. n.* 38.
P. repens β. *Lin. fyſt. ed. Reich.* 1. 262.
Leucadendron repens β. *Lin. ſpec.* 135.
Lepidocarpodendron fol. longiſſimis anguſtiſſimis fructum elegantiſſime ex rubro flavo & albo variegatum ſuccingentibus, radice repente. *Boerh. lugdb.* 2. 190. *ic.*
Leaves lanceolate elliptic ſmooth, head ovate ſmooth, ſtem decumbent very ſhort.

42. Protea plumoſa. *Feather-flowered Protea.*
Ait. kew. 1. 127. *Lin. ſpec. ed. Willd.* 524.
Leaves lanceolate-wedge-ſhaped hoary, head terminating oblong, petals ſmooth beneath, hairy with very long hairs above.

43. Protea obliqua. *Oblique-leaved Protea.*
Lin. fyſt. 140. *Willd.* 524. *ſuppl.* 117. *Thunb. prodr.* 27. *diff. n.* 39.
Leaves linear-lanceolate ſmooth callous oblique, head cauline terminating.

44. Protea parviflora. *Small-flowered Protea.*
Lin. fyſt. 140. *Reich.* 1. 270. *Willd.* 524. *mant.* 195. *Thunb. prodr.* 27. *diff. n.* 40. *t.* 4. *f.* 1.
Leaves elliptic obtuſe callous oblique, heads ſmooth at the ends of the branchlets.

45. Protea pallens. *Pale Protea.*
Lin. fyſt. 140. *Reich.* 1. 267. *Willd.* 524. *mant.* 193. *Thunb. prodr.* 27. *diff. n.* 41.
P. conifera β, γ, δ, ε. *Lin. ſpec.* 138.
Conocarpodendron. *Boerh. lugdb.* 2. 197. *ic.* & 200. *ic.* & 203. *ic.* & 204. *ic.*
Leaves lanceolate attenuated at the baſe ſmooth acute callous, head terminating involucred, involucre long pale.]

46. Protea conifera. *Cone-bearing Protea.*
Lin. ſpec. 138. α. *fyſt.* 140. *Willd.* 525. *mant.* 193. *Thunb. prodr.* 27. *diff. n.* 42.
P. ſaligna. *Lin. mant.* 194. *fyſt. ed. Reich.* 1. 267. *hort. cliff.* 29.
Leucadendron ſalignum. *Berg. cap.* 17. *act. holm.* 1766. *p.* 303.
Scolymocephalus africana fol. brevioribus, in tubercula definentibus. *Herm. afr.* 20.
Thymelæa capitata ſ. julifera anguſto ſalicis folio. *Pluk. mant.* 181. *t.* 229. *f.* 6.
Frutex æthiopicus conifer, fol. Cneori, Salici æmulus. *Breyn. cent.* 21. *t.* 9.
Leaves lanceolate attenuated at the baſe ſmooth acute callous, head terminating involucred, involucre long acute concolor.

[47. Protea Leviſanus. *Branching Protea.*
Lin. fyſt. 140. *Reich.* 1. 268. *Willd.* 526. *mant.* 194. *Thunb. prodr.* 27. *diff. n.* 43.
P. fuſca. *Lin. ſpec.* 1. 95.
Brunia Leviſanus. *Lin. ſpec.* 2. 289. *Burm. afr.* 267. *t.* 100. *f.* 2.
Leucadendron Leviſanus. *Berg. cap.* 20. *act. holm.* 1766. *p.* 324.
Leviſanus capenſis ſerpilli folio. *Petiv. gaz. t.* 5. *f.* 7.
Conocarpodendron fol. ſubrotundis breviſſimis, &c. *Boerh. lugdb.* 2. 202. *ic.*
Chryſanthemum conyzoides, &c. *Pluk. mant. t.* 343. *f.* 9.
Leaves obovate bluntly acuminate imbricate ſmooth, ſtem hairy, the head having a blunt longer involucre.

48. Protea ſtrobilina. *Obtuſe-leaved Protea.*
Lin. fyſt. 140. *Reich.* 1. 266. *Willd.* 527. *mant.* 192. *Thunb. prodr.* 27. *diff. n.* 44. *Schraid. ſert. hanov.* 1. *faſc.* 1. *p.* 7. *t.* 1.
Conocarpodendron acaulon, &c. *Boerh. lugdb.* 2. 201. *ic.*
Leaves elliptic-oblong retuſe-callous ſmooth, head terminating ſmooth.

49. Protea imbricata. *Imbricate-leaved Protea.*
Lin. fyſt. 140. *Willd.* 527. *ſuppl.* 116. *Thunb. prodr.* 27. *diff. n.* 45. *t.* 5. *f.* 2.
Leaves lanceolate ſmooth ſtriated imbricate, head terminating.

50. Protea ſericea. *Silky Protea.*
Lin. fyſt. 140. *Willd.* 528. *ſuppl.* 118. *Thunb. prodr.* 27. *diff. n.* 46.
Leaves lanceolate ſilky, branches filiform, ſtem decumbent.

51. Protea ſaligna. *Willow-leaved Protea.*
Lin. fyſt. 140. *Willd.* 528. *Thunb. prodr.* 27. *diff. n.* 47. *Pluk. mant.* 181. *t.* 229. *f.* 4.
Leaves lanceolate ſilky, ſtem ſtrubby, heads oblong involucred.]

52. Protea argentea. *Silvery Protea.*
Lin. ſpec 137. *fyſt.* 141. *Reich.* 1. 268. *Willd.* 529. *mant.* 194. *hort. cliff.* 29. *Gærtn. fruct.* 1. 23. *Thunb. prodr.* 27. *diff. n.* 48.
Leucadendros africana arbor tota argentea ſericea, fol. integris. *Pluk. phyt. t.* 200. *f.* 1.
Argyrodendros afr. fol. ſericeis & argenteis. *Comm. hort.* 2. 51. *t.* 26. *Raii dendr.* 9.
Conocarpodendron fol. argent. ſeric. latiſſimis. *Boerh. lugdb.* 2. 195. *ic.*
Globularia afr. fruteſcens thymelææ folio lanuginoſo. *Tournef. inſt.* 467.
Frutex æthiopicus conifer, fol. Cneori lanuginoſis ſalici æmulis. *Breyn. prodr.* 2. 49.
Arbor ferens folia argentea. *Zanon. hiſt. ed.* 1. 24.
Leaves lanceolate ſilvery-tomentoſe ciliate, ſtem arboreous, heads globular.

6. Oblong:

6. Oblong: *with oblong ovate leaves.*

[53. Protea acaulis. *Stemleſs Protea.*
Lin. ſyſt. 141. *Reich.* 1. 270. *Willd.* 529. *Thunb. prodr.* 27. *diff. n.* 49.
Leucadendron acaulon. *Lin. ſpec* 135.
Lepidocarpodendron acaulon. *Boerh. lugdb.* 2. 191. *ic.*
Scolymocephalus africanus lauri folio & procumbens. *Raii hiſt.* 3. 9.
Leaves oblong ſmooth, head globular ſmooth, ſtem decumbent very ſhort.
54. Protea myrtifolia. *Myrtle-leaved Protea.*
Lin. ſyſt. 141. *Willd.* 530. *Thunb. prodr.* 27. *diff. n.* 50.
Leaves oblong ſmooth, heads terminating aggregate.
55. Protea grandiflora. *Great-flowered Protea.*
Lin. ſyſt. 141. *Willd.* 530. *Thunb. prodr.* 27. *diff. n.* 51.
Leaves oblong veined ſmooth, head hemiſpherical ſmooth, ſtem arboreous.
56. Protea glabra. *Smooth Protea.*
Lin. ſyſt. 141. *Willd.* 530. *Thunb. prodr.* 27. *diff n.* 52.
Leaves oblong veinleſs ſmooth, head hemiſpherical ſmooth, ſtem ſhrubby.
57. Protea ſpecioſa. *Handſome Protea.*
Lin. ſyſt. 141. *Reich.* 264. *Willd.* 631. *mant.* 191. *Thunb. prodr.* 27. *diff. n.* 53.
P. Lepidocarpodendron. *Lin. mant.* 190.
Leucadendron Lepid. *Lin. ſpec.* 134. *Berg. act. holm.* 1766. *p.* 322.
Lepidocarpodendron. *Boerh. lugdb.* 2. 185. 186. 188. 189. *ic.*
Scolymocephalus africana fol. longis glabris, cono ſericeo, ſquamis rubiginea villoſa criſta ornatis. *Raii hiſt.* 3. 9.
Leaves oblong ſmooth, head oblong, calycine ſcales bearded at the tip.
58. Protea totta. *Upright ſmooth Protea.*
Lin. ſyſt. 141. *Reich.* 1. 265. *Willd.* 532. *mant.* 191. *Thunb. prodr.* 532. *diff. n.* 54.
Leaves ovate ſmooth callous, head ovate, corollas cylindrical rough-haired.
59. Protea hirta. *Hairy Protea.*
Lin. ſyſt. 141. *Reich.* 1. 260. *Willd.* 532. *mant.* 188. *Thunb. prodr.* 27. *diff. n.* 55.
Leucadendron hirtum. *Lin. ſpec.* 136. *amoen.* 4. *afr.* 3.
Lepidocarpodendrum. *Boerh. lugdb.* 2. 194. *ic.* & Hypophyllocarpodendron. *Ejuſd.* 205. *ic.*
Salix conophora africana anguſto obtuſo folio lanuginoſo. *Breyn. prodr.* 372.
Leaves ovate ſmooth, flowers lateral.
60. Protea pubera. *Downy-leaved Protea.*
Lin. ſyſt. 141. *Reich.* 1. 266. *Willd.* 533. *mant.* 192. *Thunb. prodr.* 27. *diff. n.* 56.
Leucadendron thymæleoides. *Berg. cap.* 19. *act. holm.* 1766. *p.* 324.
Leaves ovate tomenteſe, heads terminating tomenteſe.
61. Protea divaricata. *Straddling-branched Protea.*
Lin. ſyſt. 142. *Reich.* 1. 269. *Willd.* 533. *mant.* 194. *Thunb. prodr.* 27. *diff. n.* 57.
Leucadendron divaricatum. *Berg. cap.* 19. *act. holm.* 1766. *p.* 324.
Scolymocephalus africanus argenteus, fol. brevioribus myrtiformibus, capitulis rarioribus. *Herm. afr.* 20.
Leaves ovate rough-haired, heads terminating, branches divaricating.
7. Rounded: *with roundiſh leaves.*
62. Protea ſpatulata. *Spatulate-leaved Protea.*
Lin. ſyſt. 142. *Willd.* 533. *Thunb. prodr.* 28. *diff. n.* 58. *t.* 5. *f.* 3.
Leaves ſpatulate ſomewhat cowled ſmooth.
63. Protea cynaroides. *Round-leaved Protea.*
Lin. ſyſt. 142. *Reich.* 1. 263. *Willd.* 534. *mant.* 190. *Thunb. prodr.* 28. *diff. n.* 59.
Leucadendron cynaroides. *Lin. ſpec.* 135.
Lepidocarpodendron. *Boerh. lugdb.* 2. 184. *ic.* & Conocarpodendron. *Ejuſd.* 199. *ic.*
Cynaroides frutex folio ſubrotundo rigido. *Petiv. muſ.* 374.
Scolymocephalos africana, lato rotundo glabro folio, cono maximo ſericeo candido. *Raii hiſt.* 3. 9.
Salix conophora afr. rigido craſſo folio. *Breyn. prodr.* 373.
Leaves roundiſh petioled ſmooth.
64. Protea cordata. *Heart-leaved Protea.*
Lin. ſyſt. 142. *Willd.* 534. *Thunb. prodr.* 28. *diff. n.* 60. *t.* 5. *f.* 1.
Leaves cordate.

DESCRIPTIONS, *&c.*

Theſe are beautiful elegant Shrubs; natives of the Cape of Good Hope. They have alternate leaves, which by their different forms have afforded ſeven ſubordinate diviſions of the numerous ſpecies. Flowers in ſome diſtinct, in ſpikes, perhaps monoecous, ſome of them being abortive; but in the greater part hermaphrodite, aggregate above a common receptacle, which is naked or elſe covered either with hairs or ſmall ſcales, ſurrounded with ſcales imbricate and forming a ſtrobile, ſometimes ſeparating the flowers, ſometimes only encircling the aggregate of flowers. Heads terminating or ſometimes but rarely axillary[1].

The celebrated Boerhaave was the firſt who made this fine genus much known, in his catalogue of the Leyden garden publiſhed in 1720, wherein he deſcribed and figured twenty-four ſpecies, under the ſeſquipedalian names of *Lepidocarpodendron*, *Conocarpodendron*, and *Hypophyllocarpodendron*. Royen (in 1740) has only twenty-one ſpecies, ſome of Boerhaave's being only varieties. He diſcarded his maſter's long names, and adopted the more elegant ones of Linnæus. Only two of theſe ſpecies were cultivated in the Leyden garden; the reſt were known no farther than by dried ſpecimens.] Mr. Miller had three ſorts growing in the Chelſea garden, but one of them was loſt in 1768. [The catalogue of the Royal botanic garden at Kew, publiſhed in 1789, enumerates twenty-four ſpecies as growing there. We owe our preſent more accurate knowledge of this genus to the indefatigable pains of the Chevalier Thunberg, who has deſcribed moſt of the ſpecies in his monograph or diſſertation, from which the following deſcriptions will be chiefly taken.

1. Stem filiform, angular, little branched, ſmooth, blood-red, a foot high. Branches at the top of the ſtem, about four, alternate, reſembling the ſtem. Leaves ſimply trifid, directed one way, erect, ſmooth, remote, a finger's length, longer than the internodes; pinnas in the middle of the leaf oppoſite, like the leaf, a little ſhorter than the middle lobe. Head of flowers at the end of the ſtem and branches, the ſize of a large pea. Common calyx imbricate, ſmooth, with ovate, acute ſcales. Corolla ſilky.

2. The whole, except the calyx, ſmooth. Stem round, purple, a foot high and more. Leaves ſcattered, glandular at the tip, the lower pinnate, the upper trifid, erect: pinnas oppoſite, about three pairs, gradually diminiſhing from an inch in length. Heads of flowers terminating, peduncled. Peduncles ſeveral, alternate, from erect ſpreading, one-flowered, unequal, from an inch to a hand in length. Bractes at the bottom of the peduncles, ſcattered, lanceolate; above aggregate, fencing the flowers, larger, oblong, all acute, quite entire, membranaceous, purpliſh, an inch long. Calyx imbricate; ſcales lanceolate, membranaceous, ſmooth, ciliate, eſpecially towards the top, with long, yelloviſh hairs.

3. Stem round, ſimple or branched, ſmooth. Branches in a ſort of whorl, like the ſtem, unequal. Leaves ſimply trifid, or ſometimes twice trifid, acute, ſmooth, frequent, erect, an inch long and more; pinnas oppoſite. Head the ſize of a hazel nut. Common calyx imbricate, ferruginous, ſmooth: ſcales lanceolate, the upper ones ciliate, with white hairs. Corolla purpliſh within, all woolly without with long white hairs.

4. Stem filiform, ſmooth, with branches in umbels, ſmooth or pubeſcent, unequal, ſpreading. Leaves trifid-pinnate, ſometimes bipinnate, ſmooth, callous-acute. Heads of flowers aggregate at the ends of the

[1] Juſſieu gen.

branches, the ſize of a pea. Calycine ſcales ovate, acuminate, ſmooth. Corollas ſnow-tomentoſe [m].

5. This is very diſtinct from all the reſt in its club-ſhaped heads, aggregate in whorls at the ends of the branches. It is a native of New Holland [n]; the reſt grow at the Cape of Good Hope.

6. Stem round, flexuoſe, erect, rigid, duſky-purple, ſimple, above wholly covered with leaves, below naked. Leaves flexuoſe, ſmooth; pinnas about four, oppoſite; pinnules alternate, at top acute with ruſeſcent glands. Heads peduncled, aggregate, almoſt the ſize of a hazel nut. Peduncles ruſeſcent, rough-haired, one-flowered, ſhorter by half than the head. Calycine ſcales ruſeſcent. Corolla ſilvery with long imbricate hairs.

7. Stem flexuoſe, erect, purple, ſmooth, two feet high and more. Branches alternate, flexuoſe, filiform, ſubfaſtigiate. Leaves longer than the internodes: pinnas about three, oppoſite; pinnules alternate, glandular-acute. Heads faſtigiate, aggregate, the ſize of a pea; on villoſe peduncles. Common calyx many-leaved, rough-haired, very ſhort, with lanceolate ſcales. Corolla rough-haired on the outſide.

It varies with all the leaves ſmooth; with the lower leaves ſmooth, and the upper rough-haired; with the lower leaves rough-haired, and the upper ones very hirſute [o].

Introduced in 1786, by Mr. Francis Maſſon [p].

8. Stem ſomewhat angular, flexuoſe at top, ſimple, ſmooth, a foot and half high. Leaves triternate; pinnas oppoſite, acute, glandular at the top; pinnules alternate. Heads aggregate, the ſize of a large pea; on alternate, tomentoſe, flexuoſe, drooping peduncles, one-flowered and two-flowered; with a ſmooth bractæ at the baſe. Corolla woolly with ſilvery hairs.

9. Stem round, ſmooth. Leaves aggregate at the top, ſmooth; pinnas about four, with ruſeſcent-callous tips; pinnules two alternate. Common peduncle ſingle; ſometimes ſeveral from the top of the ſtem: proper peduncles at the top of the common peduncle, alternate, one or two-flowered. Bractes awl-ſhaped, ſmooth, under the peduncles. Calycine ſcales ovate acute, ſmooth. Corolla hirſute on the outſide.

10. Stem round, brown, ſmooth, tubercled with the remains of the fallen leaves, a foot high and more, with umbelled ſubfaſtigiate branches. Upper leaves rough-haired, lower ſmooth: pinnas about three, oppoſite; pinnules alternate, awl-ſhaped, ruſeſcent at the tip. Head ovate, larger than a hazel nut. Calycine ſcales lanceolate, rough-haired on the outſide, ſmooth within. Corolla woolly with denſe gray hairs.

11. Stem round, erect, aſh-coloured, below naked and ſmooth, at top branched. Branches in a ſort of whorl, erect, rough-haired. Lower leaves ſmooth, upper villoſe: pinnas three, oppoſite; pinnules alternate, acute, glandular at the tip, ruſeſcent, faſtigiate. Heads at the ends of the branches in ſpikes, which are ſolitary, ſeſſile, oblong, acute, villoſe with very denſe white hairs, erect, a finger's length: heads aggregate, four-flowered.

12. Stem round, purple, very finely tomentoſe, with branches four together in whorls. Leaves ſmooth, the upper ones ſilky: pinnas three, oppoſite: pinnules alternate, acute, with an oblong yellowiſh gland at the tip. Heads four-flowered. Common calyx tomentoſe, four-leaved. Corollas very finely tomentoſe at the baſe, bearded at the tip [q].

Introduced in 1786, by Mr. Francis Maſſon [r].

13. This ſpecies is ſingular for the diverſity of leaves on the branches: the lower ones are decompound, with long linear leaflets; the upper ones are almoſt wedge-ſhaped, gradually attenuated towards the inſertion, erect, channelled, ſubcucullate about the ſtem, imbricate, very ſmooth. At the end of each branchlet is a ſingle ſeſſile ſpike, with ſilvery, whitiſh flowers [s].

14. Stem round, villoſe. Leaves ſeſſile, ovate, very blunt, entire, commonly five-toothed at the top, ſometimes but ſeldom undivided and three-toothed, the teeth callous; ſmooth, villoſe at the baſe, veined. Heads aggregate, almoſt as big as a walnut. Calycine ſcales lanceolate, ſmooth within, very finely villoſe without, bearded at the tip. Corolla cylindrical, villoſe, purpliſh. It differs from P. Conocarpa in having more and ſmaller heads of flowers, the calycine ſcales lanceolate, long; the corollas ſhorter with ſhort hairs.

15. It varies with a ſmooth and a villoſe ſtem; as alſo with ſeven-toothed, five-toothed, three-toothed and undivided leaves, on different trees, and often on the ſame branch [t].

Introduced in 1774, by Mr. Francis Maſſon [u].

16. Stem flexuoſe, villoſe. Leaves ſometimes but ſeldom four-toothed. Head ſolitary, the ſize of a pear. Common calyx imbricate, tomentoſe. Corollas long, hirſute.

17. Stem ſmooth, ſimple. Leaves elliptic-lanceolate, blunt with a point, having callous teeth and no perceptible veins. Head ſolitary, the ſize of a walnut. Common calyx tomentoſe, with ovate acute ſcales. Corolla filiform, villoſe. It is diſtinct from all the other ſpecies, in its decumbent ſtem, and leaves directed one way.

18. Stem knobbed, tomentoſe, ſimple. Leaves ſeſſile, below the middle wider and ovate, above narrower, linear, three-toothed, with callous teeth, imbricate. Heads in the axils of the upper leaves, ſeſſile, five-flowered. Common calyx imbricate, little villoſe: the lower ſcales ovate, acute; the upper ones oblong, acuminate: corolla filiform, below pubeſcent, above denſely villoſe. It is eaſily diſtinguiſhed by its narrow lateral heads.

19. The whole plant is hoary-tomentoſe. Stem round, ſimple. Leaves linear, commonly three-toothed, very ſeldom five-toothed; the teeth callous. Heads ſolitary or two together, almoſt as big as a walnut. Calycine ſcales ovate, acute. Corolla very finely pubeſcent. It is eaſily known by its being tomentoſe all over. It varies with narrower and wider leaves.

20. Stem ſmooth, a foot high, branched at top. Branches alternate, divaricating, pubeſcent. Leaves oblong, attenuated below, acute, either entire or having two or three callous teeth, ſmooth. Heads ſolitary, the ſize of a hazel nut. Common calyx tomentoſe, with lanceolate ſcales ſmooth within. Corolla villoſe.

21. Stem two feet high, erect, with branches in whorls. Leaves ſlightly channelled, acute, glandular at the tip. Racemes in terminating bundles, faſtigiate. Bractes awl ſhaped. Peduncles angular, very ſhort. Common calyx none. Corolla has four linear petals. Anthers inſerted into the middle of the corolla, linear, bent round. The whole plant is ſmooth [x].

Introduced in 1780, by Mr. William Forſyth [y].

22. Stem ſmooth, three feet high, erect, branched. Leaves acute; the lower ſmooth, the upper ſilky. Racemes a finger's length. Peduncles capillary, ſmooth, one-flowered. Calyx one-flowered, three-leaved; leaflets ovate, acute, villoſe. The whole corolla hirſute with denſe wool.—This is the only ſpecies hitherto known with a one-flowered calyx; by which mark it is well diſtinguiſhed from *P. caudata* and *incurva*; ſpecies which it very much reſembles at firſt ſight [z].

Introduced in 1787, by Mr. Francis Maſſon [a].

23. Stem erect, with branches in whorls towards the top. Leaves ſcattered. Heads ſubſeſſile. Calyx four-leaved, three or four-flowered. It differs from *P. racemoſa* in not having one-flowered calyxes, and in the leaves being more incurved: from *P. caudata* in the leaves being much longer and incurved, the heads in racemes and more remote [b]. The younger leaves are pubeſcent [c].

24. Stem ſmooth, branched at top. Leaves erect, the lower ones glandular at top, the upper ones hirſute and imbricate. Spikes cylindrical, erect. Common

[m] Thunberg. [n] Willdenow. [o] Thunberg. [p] Hort. kew. [q] Thunberg. [r] Hort. kew. [s] Linn. ſuppl. [t] Thunberg. [u] Hort. kew. [x] Thunberg. [y] Hort. kew. [z] Thunberg. [a] Willdenow. [b] Hort. kew. [c] Hort. kew.

calyx four-leaved, two-flowered, ſeldom one or three-flowered. Calycine leaflets ovate, acuminate, villoſe, unequal. Corolla hirſute. It differs from *P. racemoſa* in having ſeſſile heads, the calyxes four-leaved and two or three-flowered, the ſpike of flowers long and like a ſtrobile, the leaves ſhorter, and moſtly directed one way, ſpreading at the top.

25. Stem a foot high, ſimple, ſeldom biſid, wrinkled. Leaves acute, moſtly directed one way. Head ſolitary, the ſize of a walnut. Common calyx none, but the common receptacle fenced with three-ſided leaves and pinnatifid bractes. Corolla cohering at bottom, four-cornered, four-cleft at top, with the border ſpreading, ſmooth, ſtuffed on the inſide with a denſe white pappus ſhorter than the corolla.—This ſpecies agrees with *pinifolia* and *aulacea* in having no calyx, with *umbellata* in having multifid bractes.

26. Stem erect, knobbed with fallen leaves, ſmooth, with branches four together in whorls and faſtigiate. Lower leaves blunt; incurvate-erect; upper leaves elliptic-lanceolate, blunt, with a comoſe point. Head ſolitary, the ſize of a walnut.

27. The whole of this is ſmooth. Stem very much branched, wrinkled. Branches ſubumbelled, pubeſcent. Leaves linear-ſubulate, grooved above, entire, imbricate, from ſpreading recurved. Heads ſolitary, the ſize of a pea. Common calyx imbricate, tomentoſe: the outer ſcales minute, ovate, very ſhort; the lower lanceolate, longer than the head. Corollas ferruginous, minute.

28. Stem ſmooth, ſlender, proliferous, two feet high. Branches covered with leaves; which are ſubimbricate and ſmooth. Heads in the fork and at the tops of the branches, the ſize of a pea.

29. Stem erect, four feet high, with ſubverticillate-aggregate faſtigiate branches. Leaves flat above, convex underneath, ſharpiſh, imbricate. Heads the ſize of a pea, ſolitary, at the ends of the branches and branchlets. Common calyx many-leaved, ſhorter than the corolla; which is yellow and minute. Nut obovate, compreſſed, with an acute margin, and blunt villoſe hollow top, and a white kernel, not opening. It varies with a tomentoſe calyx.

30. Stem erect, with drooping branches in threes or thereabouts. Leaves acute, ſubimbricate. Head ſolitary, the ſize of a plum. Common calyx imbricate; outer ſcales ovate, inner oblong, acute, purple, ſpreading. Corolla covered on the outſide with a golden fleece. It is immediately known by the reſemblance of the flowers to a Roſe.

31. Stem filiform, weak, ſmooth, covered with leaves. Leaves linear, flat above, convex underneath, ſharpiſh, imbricate. Head ſilky, the ſize of a walnut. Corolla woolly all over and bearded with ſilvery hairs.

32. Stem two feet high, erect, even, with branches in whorls of four, and very ſhort branchlets alſo in whorls. Leaves bluiſh, entire, from erect ſpreading. Heads at the ends of the branchlets, the ſize of a pea. Common calyx imbricate, very ſhort, tomentoſe. Corolla ſilvery.

33. The whole of this is ſilvery tomentoſe. Stem round, erect, little tomentoſe, with umbelled branches, about ſix, filiform, erect, unequal. Leaves blunt, erect-imbricate. Heads in the fork and at the tips of the branches, ſilvery-woolly all over, fenced with leaves, the ſize of a pea.

34. The whole is ſmooth. Stem erect, little branched, three or four feet high, with branches in a ſort of whorl and ſtriated. Leaves blunt with a point. Racemes terminating, ſubumbelled. Peduncles wrinkled, ſcarcely a line in length. Bracte under each peduncle, lanceolate, channelled, white, erect, the length of the peduncle and half the flower. Common calyx none. Corolla four-petalled: petals linear, acute, channelled, equal, ſmooth, white. Anthers inſerted into the middle of the petal, linear, ſpiral, white [d].

Introduced by Mr. Francis Maſſon in 1774 [a].

35. Stem two feet high, erect. Branches at bottom few, towards the top frequent, umbelled, faſtigiate. Leaves as in the preceding. Heads the ſize of a hazel nut, ſolitary, fenced with leaves and bractes. Calyx none, but bractes on the common receptacle, alternate, pinnatifid. Corolla as in *P. bracteata* [f].

Introduced in 1787, by Mr. Francis Maſſon [e].

36. Stem erect, four feet high. Branches long, ſimple, leafy, ſmooth. Leaves ſeſſile, blunt, callous at the baſe underneath, with a ruſeſcent callus at top, a little bent back at the edge, ſomewhat convex and wrinkled on the upper ſurface, concave on the lower. Head ſolitary, as big as a middling-ſized apple. Calycine ſcales wide, ovate, acute, ſmooth within, pubeſcent on the outſide, denſely tomentoſe at the baſe. Receptacle denſely white-villoſe. Tube of the corolla compreſſed: border two-parted, the ſegments linear: one of them wider and trifid; the ſtamens and reflex ſtigma are inſerted into theſe ſegments, before they are unfolded: the other one-third of the width and entire: both villoſe, ſhorter by half than the ſtyle.—This agrees with *P. conocarpa*, *totta*, &c. in having an imbricate calyx, ſhorter by half than the ſtyle [b].

Introduced by Maſſon in 1774 [i].

37. Stem ſmooth, two feet high, with branches in whorls. Leaves linear-ſpatulate, imbricate, obtuſe, ſeſſile, with a ruſeſcent callus at the top; the lower ones ſmooth, the upper covered with whitiſh ſilky hairs preſſed cloſe. Heads ſilky, the ſize of a hazel nut [k].

Introduced by Maſſon in 1774 [l].

38. Stem three feet high, erect, wrinkled, with the branches in a ſort of whorl. Leaves attenuated below, terminated by a gland. Heads ovate, fenced with leaves, the ſize of a plum. Outer calycine ſcales ovate, inner oblong, concave, blunt. Corolla purpliſh. Receptacle ferruginous-tomentoſe [m].

Introduced in 1780, by the Counteſs of Strathmore [n].

39. Stem nine feet high, and three feet in diameter. Leaves hoary. Calyx hemiſpherical, imbricate. Corolla pubeſcent. Receptacle yellow-villoſe [o].

Native of Abyſſinia, near Lamalmon [p].

As Bruce ſaw it, this tree was thick and ſtunted, with few branches. Leaves of a dead green, not unlike the Willow, alternate, ſeſſile. Calyx of many broad ſcales. In the middle of a very hot day, the flowers unbend themſelves more, the calyx ſeems to expand, and the whole flower to turn itſelf towards the ſun, in the ſame manner as the Sun-flower. When the branch is cut, the flower dries almoſt inſtantaneouſly.

40. Stem arboreous, a fathom high, erect, branched. Leaves attenuated below, bluntiſh. Head ferruginous, viſcid, the ſize of a gooſe's egg. Calyx imbricate, with the loweſt ſcales minute, ovate; the upper ones oblong, the uppermoſt lanceolate [q].

Introduced in 1774, by Mr. Francis Maſſon [r].

41. Stem ſcarcely a hand in height, with two or three branches. Leaves at the top of the ſtem in cluſters, often convolute, with a cartilaginous rugged margin. Head ſolitary, fenced with leaves, the ſize of a plum. Common calyx imbricate; the outer ſcales minute, ovate, blunt; the inner lanceolate. Corolla covered with a white pile.—This differs very widely from the preceding in having a creeping root, the ſtem very ſhort, almoſt ſimple, one-flowered, the leaves linear margined, the head ovate ſmaller, not at all viſcid [s].

42. Introduced by Maſſon in 1774 [t].

43. Stem erect, two feet high. Branches filiform, ſcattered, unequal, pubeſcent. Leaves ſeſſile, acute, ſmooth or very finely tomentoſe. Head ſolitary, the ſize of a plum. Outer calycine ſcales ovate, acute, ſmooth; the inner ones oblong, hairy.

44. Stem very much branched, three feet high, upright, with filiform rod-like branches, and alternate branchlets

[a] Thunberg. [b] Hort. kew. [c] Thunberg. [d] Hort. kew. [e] Hort. kew. [f] Thunberg. [g] Hort. kew. [h] Willdenow. [i] Hort. kew. [k] Hort. kew. [l] Willdenow. [m] Thunberg. [n] Bruce. [o] Thunberg. [p] Hort. kew. [q] Thunberg. [r] Hort. kew. [s] Willdenow. [t] Hort. kew.

branchlets towards the top of them. Leaves lanceolate, narrowed below. Heads bluntly four-cornered. Calycine ſcales imbricate in four rows, ovate, blunt, concave, ſmooth.—It varies with the ſtem and leaves ſmooth, and hoary ſubtomentoſe [x].

Introduced in 1774, by Mr. Francis Maſſon [x].

45. Stem erect, a foot high and more, with ſimple divaricating branches. Leaves ſeſſile, ſcattered, ſubdecurrent. Bractes fencing the cone, ſomewhat like the leaves, concave, erect, whitiſh with a ſpreading callous top, three times as long as the cone. Cone ovate, ſmooth, ſeſſile. Calycine ſcales ovate, ſharpiſh, concave; the lower larger and ſmooth, the upper ſilky-tomentoſe. Receptacle naked. Corolla four-petalled. Petals linear, obtuſe; claws white, villoſe, border ſpreading, yelloviſh. Anthers four, below the top of the petals, ſeſſile, ovate, twin, yellow. Germ ſuperior, two-lobed, ſmooth. Style filiform, thickened, yelloviſh, the length of the corolla. Stigma club-ſhaped, blunt, yelloviſh [y].

According to Maſſon, this is the male of *P. conifera* [z]. It was introduced by him in 1774 [a].

46. Stem erect, three feet high, with branches in whorls and ſubdivided. Leaves terminated by a concave ſmooth gland. Cone tomentoſe ovate, the ſize of a pea. In *P. pallens* the branches are ſcattered and ſimple, the leaves are more lanceolate, the cone of flowers is ſmooth, and the bractes are coloured. But in *P. conifera*, the branches are in whorls and again ſubdivided, the leaves elliptic, the cone of flowers tomentoſe, and the floral leaves concolour. Theſe were conſidered as one ſpecies by Linneus, as were alſo *mellifera* and *repens* [b].

It was cultivated in 1752, by Mr. Miller [c].

47. Stem ſhrubby, proliferous, erect, even, with ſubpubeſcent branchlets. Leaves ſpatulate, even, ſmall, ſcattered. Flowers hemiſpherical, terminating and axillary, villoſe. Involucres equal to the floſcules, very like the ſtem-leaves, and not longer [d].

Introduced in 1774, by Mr. Francis Maſſon [d].

48. Stem erect, pubeſcent. Leaves ſeſſile. Cone ſolitary, the ſize of a plum [e].

Introduced in 1774, by Mr. Francis Maſſon [e].

49. Stem erect, three feet high, with two or three filiform pubeſcent branches. Leaves ſeſſile, imbricate with a terminating gland, preſſed cloſe at the baſe, but ſpreading at the tip. Heads ſolitary, ſeldom two together, oblong, the ſize of a ſmall walnut. Calycine ſcales lanceolate, acute-glandular. Corolla wholly covered on the outſide with a yelloviſh wool.

50. Stems branched, ſmooth. Leaves ſilky-tomentoſe all over. Heads at the ends of the branches, ſeldom aggregate, ſomewhat drooping, the ſize of a ſmall pea. Calycine ſcales lanceolate, ſmooth. Corolla yellow-tomentoſe.

51. Stem four feet high, erect, naked at bottom, ſmooth. Branches alternate, cluſtered, ſhort. Leaves acute, glandular at the top, very finely ſilvery-tomentoſe. Heads at the ends of the branches, fenced with leaves, ſolitary, the ſize of a pea [f].

Introduced in 1774, by Mr. Francis Maſſon [f].]

52. This has a ſtrong upright ſtalk, covered with a purpliſh bark, dividing into ſeveral branches which grow erect. Leaves broad, ſhining, ſilvery, making a fine appearance, when the plant is intermixed with other exotics.

[It was cultivated here ſo long ſince as 1693; and flowers in auguſt [g].

53. The whole plant is ſmooth. The ſtem is only about two inches in length, and ſeldom branched. The branches are in a ſort of whorl, diffuſed, ſomewhat knobbed, wrinkled, unequal. Leaves ſcattered, terminating, attenuated below. Head ſolitary, the ſize of a walnut. Outer calycine ſcales ovate, inner oblong. Corolla hirſute.

54. Stem three feet high, erect, branched. Branches alternate or in threes, filiform, patulous, a little villoſe at the top. Leaves ſeſſile, blunt, glandular at the tip, oblique at the baſe. Heads at the ends of the branches and branchlets, ſolitary, the ſize of a pea. Outer calycine ſcales ſmaller, lanceolate, black at the tip; inner larger, ovate, blunt, ſubciliate. Corollas on the outſide white-hirſute.

55. Stem a fathom high and more, branched. Leaves ſeſſile, blunt, ſpreading. Head terminating, ſolitary, the ſize of the fiſt. Outer calycine ſcales ovate, gradually larger; inner oblong, blunt. Corolla tomentoſe-white.

This ſpecies and *P. cynaroides* are handſome with very large heads. This has lanceolate ſeſſile leaves, with a loſty arboreous branched ſtem: but *P. cynaroides* has roundiſh petioled leaves, with a low frutecſcent ſtem ſcarcely branched.

56. Stem ſmooth all over. Leaves *ſeſſile, glandular* at the tip, thick. Head terminating, ſolitary, the ſize of an apple.

57. Stem arboreſcent, villoſe, branched, erect, a fathom in height. Leaves ſubpetioled, acute, black at the tip. Head terminating, the ſize of a gooſe's egg. Calycine ſcales all ſmooth, bearded on the outſide below the tip with long black or ferruginous hairs; the outer ones ovate, the middle oblong, the inner linear-oblong, narrower below. Corolla filiform, hirſute. It varies with narrower and broader leaves; and with a black and ferruginous beard [i].

Introduced in 1786, by Mr. Fr. Maſſon [m].

58. Stem round, erect, villoſe. Leaves ſeſſile, ovate-oblong, blunt, terminated by a red gland, ſeldom three-toothed, ſmooth. Head terminating, ſolitary, the ſize of a pear. Calycine ſcales ſmooth, ovate, acute, ciliate, *many times* ſhorter than the corolla [n].

Introduced in 1774, by Mr. Fr. Maſſon [n].

59. Stem erect, villoſe, three feet high. Leaves ſeſſile, terminated by an obtuſe gland, very ſeldom ciliate and imbricate. Heads below the top, in the axils of the leaves, ſolitary, eight-flowered or thereabouts. Calycine ſcales oblong, acute, of a yelloviſh blood red, ſhining. Corollas villoſe, a little ſhorter than the calyx. Piſtils twice as long as the corolla, curved, ſmooth [o].

Introduced in 1774, by Mr. Fr. Maſſon [o].

60. Stem two feet high, villoſe, with branches in a ſort of whorl and patulous. Leaves ſeſſile, terminated by a blunt gland, tomentoſe, imbricate. Heads ſeldom ſolitary, often many aggregate, larger than a hazel nut. Calycine ſcales lanceolate, hirſute. Corolla woolly with villoſe hairs. It varies with ovate and oblong leaves [p].

Introduced in 1774, by Mr. Fr. Maſſon [p].

61. Stem a foot high, flexuoſe, pubeſcent, with branches in whorls three or four together. Leaves ovate-roundiſh, villoſe, imbricate; the lower reflex. Head at the end of the branchlets, ſolitary, drooping, the ſize of a pea. Corolla ſilvery.

62. Stem two feet high, erect, ſmooth, branched; branches by two or threes. Leaves petioled, blunt, imbricate. Petiole round, ſhorter by half than the leaf. Heads aggregate at the ends of the branches. Calyx four-leaved, tomentoſe, four-flowered. Corolla woolly.

63. Stem erect, wrinkled, ſimple, ſcarcely a foot high. Leaves ſpreading. Petiole ſemicylindrical, wrinkled, ſmooth, an inch long. Head terminating, ovate, nearly the ſize of a child's head. Calycine ſcales gradually larger, acute, tomentoſe. Corolla white-tomentoſe [q].

Introduced in 1774, by Mr. Fr. Maſſon [q].

64. Stem ſimple, decumbent, round, ſtriated, a ſpan long. Leaves alternate, ſeſſile, roundiſh, nine-nerved; the lower ones larger, the upper ones gradually ſmaller. Head almoſt radical, ovate, truncate. Calycine ſcales gradually larger, oblong, blunt. Down fencing the ſeed, purpliſh [r].

[a] Thunberg. [b] Willdenow. [c] Hort. kew. [d] Thunberg. [e] Hort. kew. [f] Linn. mant. [g] Hort. kew. [h] Thunberg. [i] Hort. kew. [k] Idem. [l] Thunberg. [m] Hort. kew. [n] Hort. kew. [o] Thunberg. [p] Hort. kew. [q] Thunberg. [r] Hort. kew. [s] Thunberg.

All these species are natives of the Cape of Good Hope, or the country immediately above it, except the fifth and thirty-ninth.]

PROPAGATION AND CULTURE.

These plants are too tender to live abroad through the winter in England, but some of them are hardy enough to live in a good green-house. In the summer these may be placed in the open air in a sheltered situation; for, if they are exposed to winds, the plants will be torn, and rendered unsightly, nor will they make any progress in their growth. In warm weather they must be frequently but sparingly watered, and in cold weather this must not be too often repeated, lest it should rot their fibres.

The fifty-second sort should be placed in an airy dry glass-case, where it may be protected from cold, and have as much light as possible, and in winter should have little water; this rises easily from seeds, which must be procured from the Cape of Good Hope, where it grows naturally. The seeds will sometimes remain in the ground six or eight months, and at other times the plants will appear in six weeks; therefore the best way is to sow the seeds in small pots filled with soft sandy loam, and plunge them into a moderate hot-bed; and, if the plants should not come up so soon as expected, the pots should remain in shelter till the following spring, when, if the seeds remain sound, the plants will come up. The pots in which the seeds are sown, should have but little wet, for moisture frequently causes them to rot. When the plants appear, they should not be too tenderly treated, nor should they have much wet; but in warm weather they must be exposed to the open air in a sheltered situation, and in winter protected from frost.

Many of the sorts may be propagated by cuttings, taken off in april, just before the plants begin to shoot. Plant them in small pots filled with light earth, plunge them into a moderate hot-bed, shade them from the sun, refresh them with water gently and sparingly. About midsummer, by which time they will have put out roots, shake them gently out of the pots, plant each in a separate small pot, filled with light earth, place them in a frame, and shade them till they have taken new root, gradually inure them to the open air, and treat them like the old plants.

[Since all the Proteas except two come from the same country, the above directions are in general sufficient. Several of them have not flowered in this country, and many do not perfect their seeds. These therefore can only be increased by cuttings; and some of the species are not propagated this way without difficulty.

The warmth of a common greenhouse is generally sufficient for their protection; but many of them are delicate with respect to damp, and are apt to suffer if too much crouded, or over-watered, or placed in a damp part of the house.

PROTIUM. See *Amyris*.

PROVENZALIA. See *Calla*.

PRUNELLA, (*or* Brunella, *from the German* die Braune, *a disorder in the jaws and throat, which this plant is said to cure.*)

Lin. gen. n. 735. *Reich. n.* 793. *Schreb. n.* 990. Brunella. *Tournef. t.* 84. *Juss.* 116.

Class. 14. 1. Didynamia Gymnospermia.

Nat. order of *Verticillatæ* or *Labiatæ*.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, two-lipped, shorter than the throat, permanent. *Upper lip* flat, wider, truncate, very slightly three-toothed. *Lower lip* erect, narrower, acute, semibifid.

COR. one-petalled, ringent: *tube* short, cylindrical: *throat* oblong: *upper lip* concave, entire, nodding: *lower lip* reflex, trifid, blunt; *middle segment* wider, emarginate, serrate.

STAM. *Filaments* four, awl-shaped, forked at top; two of them a little longer than the others. *Anthers* simple, inserted into the filaments below the top, as it were on another branch.

PIST. *Germ* four-parted. *Style* filiform, with the stamens bending to the upper lip. *Stigma* bifid.

PER. none. *Calyx* closed, containing the seeds.

SEEDS four, subovate.

OBS. *The essence of the genus consists in the forked filaments, as in* Crambe.

ESSENTIAL CHARACTER.

Filaments forked, with an anther on one of the forks. *Stigma* bifid.

SPECIES.

1. Prunella vulgaris. *Common Self-heal.*
   Lin. spec. 837. *Reich.* 3. 101. *hort. cliff.* 316. *fl. suec. n.* 540. *mat. med.* 154. *Hudf. angl.* 264. *Wither. arr. ed.* 3. 541. *Smith, angl.* 646. *Curt. lond.* 4. *t.* 42. 229. *Lightf. scot.* 321. *Relh. cant. n.* 450. *Sibth. oxon. n.* 540. *Hall. helv. n.* 277. *Nerk. gallob.* 261. *Scop. carn. n.* 715. *Pollich pal. n.* 577. *Fl. dan. t.* 910. *Krock. silef. n.* 964. *Villars dauph.* 2. 396. *Allion. pedem. n.* 123. *Ludw. ect. t.* 19. *Knipb. cent.* 5. *n.* 72. *Sabb. hort.* 3. *t.* 32. *Fl. ruff. t.* 137. *Park. theat.* 1680. 1.
   P. officinalis. *Crantz. austr.* 279.
   Prunella. *Fuchf. hist.* 621. *Ger.* 507. 1. *emac.* 632. 1. *Raii hist.* 551. *fru.* 238. *Petiv. brit. t.* 32. *f.* 11.
   P. flore minore vulgaris. *Baub. hist.* 3. 428. 2.
   Brunella. *Dod. pempt.* 136. 1. *Riv. mon.* 29. 1. *Blackw. t.* 24.
   B. major folio non dissecto. *Baub. pin.* 260. *Mill. fig. t.* 70. *f.* 2. *Mor. hist. s.* 11. *t.* 5. *ord.* 1. *f.* 1.
   Consolida minor. *Cambr. epit.* 763. *Matth.* 963.
   β. Prunella grandiflora. *Great flowered Self-heal.*
   Lin. spec. 837. *β. fuff.* 547. 1. *a. Reich.* 3. 101. 1. *β. Pollich. pal. n.* 578. *Jacqu. austr.* 4. 40. *t.* 377. *Krock. silef. n.* 965. *Villars dauph.* 2. 396. 2. *Allion. pedem. n.* 124. *Hall. helv. n.* 278. (Brunella.) *Curt. magaz.* 337.
   P. magno flore purpureo, & alio albo. *Park.*
   P. flore magno, folio non laciniato. *Baub. hist.* 3. 429. *Raii hist.* 552.
   P. flore albo. *Ger.*
   Brunella cœrulea magno flore. *Baub. pin.* 261. *Mor. hist. ord.* 2. *f.* 4.
   B. flore majore. *Riv. mon.* 29. 2.
   All the leaves ovate-oblong petioled.
2. Prunella laciniata. *Jagged-leaved Self-heal.*
   Lin. spec. 837. *fuff.* 547. *Reich.* 3. 101. *Leers, herborn. n.* 476. *Jacqu. austr.* 4. 41. *t.* 378. *Krock. silef. n.* 966. *Villars dauph.* 2. 397. 3. *Allion. pedem. n.* 125. *Hall. helv. n.* 279. (Brunella.)
   P. flore albo parvo, folio laciniato—flore magno purpureo, fol. lacin.—&, flore magno albo, fol. lacin. *Baub. hist.* 3. 429. *Raii hist.* 551. 2. & 552. 4. *Mor. hist. f.* 11. *t.* 5. *ord.* 2. *f.* 6. 2.
   Brunella folio laciniato. *Baub. pin.* 261. *Riv. mon. t.* 30.
   B. 2. non vulgaris. *Cluf. hist.* 2. 43.
   β. B. minor alba laciniata. *Baub. pin.* 261. *Knipb. cent.* 10. *n.* 72.
   γ. B. verbenulæ folio, flore cœruleo. *Vaill. par. t.* 5. *f.* 1.
   Symphytum petræum Lobelii. *Dalech.* 1174.
   Leaves ovate-oblong petioled, the four uppermost lanceolate toothed.
3. Prunella hyssopifolia. *Hyssop-leaved Self-heal.*
   Lin. spec. 837. *fuff.* 547. *Reich.* 3. 102. *Sauv. monsp.* 141. *Villars dauph.* 398. *Allion. pedem. n.* 126.
   P. angustifolia. *Baub. hist. Raii hist.* 552.
   Brunella hyssopifolia. *Baub. pin.* 261.
   B. anguft. integra hirsutior. *Mor. hist.* 3. 364. *f.* 11. *t.* 5. *f.* 7.
   Leaves lanceolate quite entire sessile, stem erect.

DESCRIPTIONS, &c.

1. Root perennial (according to Mr. Curtis, annual) very fibrous. The whole plant is thinly set with hairs; the hairs upright and white. Stem from six to twelve inches in height, upright, commonly branching from the very bottom, hairy, purplish especially towards the top. Branches in pairs at each joint, brachiate, ascending. Leaves blunttish, hairy, obsoletely toothed or repand: petioles channelled above

and hairy along the edges. Bractes reniform, acuminate, ciliate, nerved. At the top of the ſtem, and at the end of each branch is a ſubcylindrical ſpike of flowers, truncate at top, the largeſt an inch in length. Calyx ſomewhat longer than the bractes; upper lip dilate, three-toothed, having ſeven ribs; lower bifid, mucronate, each ſegment marked with three lines, and ſerrate with ſhort ſtiff hairs; the lips are purple. Corolla violet-coloured, with a white tube, and eaſily falls: then the lips of the calyx cloſe together, the better to ſecure the germ. Seeds ſmooth, brown, terminated by a white point[f].

This plant varies much in ſize. Linneus remarks, that in open expoſed ſituations it is ſhort and trailing; but when drawn up among high graſs, and eſpecially in woods, it is upright and a foot high. In the latter caſe it has a flexuoſe ſtem, branches little, and has very long internodes. The corolla varies to red, and to white.

Native of Europe in paſtures and meadows, flowering from june to auguſt. According to Linneus, kine, ſheep and goats eat it, but horſes refuſe it.

Being aſtringent, it was formerly uſed in fluxes, and in gargariſms for aphthæ and inflammations of the fauces. It was conſidered as one of the beſt vulnerary herbs, but is now out of uſe.

β. Great-flowered Self-heal differs from the common ſort in having the ſtems lower, the leaves more tender, and the flowers double the ſize[g].—The ſtems are ſcarcely a long ſpan in height, they are erect, not branched, obſoletely quadrangular, and hirſute. Leaves either entire or very thinly toothed, narrower, on longer petioles, of a brighter green, the upper ones almoſt laciniate, all more hirſute. Spike looſer, more ovate. Corollas an inch long, paler, or not of ſo deep a blue. The upper lip of the calyx is perfectly three-toothed, whereas in the common ſort it has only three ſpinules. The bractes are wider. The root is ſhorter, ſcarcely creeping[h].

The flower is ſometimes white, and it varies with laciniate leaves, which varieties differ as much from the ſpecies as the ſecond differs from the firſt. A drier ſoil ſeems to render the leaves more or leſs cut, more hairy, and frequently the corolla white[i].

Mr. Curtis cultivated it ſeveral years without diſcovering it to have the leaſt diſpoſition to vary. In july and auguſt, it puts forth its large ſhowy bloſſoms, of a fine purple colour.

Native of Auſtria, Sileſia, Dauphiné. Profeſſor Jacquin found it mixed with the *laciniata*. Villars obſerved it on high mountains, in moiſt meadows, and near water.

2. Root perennial. Stems hard, ſmall and branched, from three to ſix inches in height, but in one variety creeping on the ground. Leaves more or leſs villoſe, and more or leſs cut. Flowers not larger than thoſe of the common ſort; but more commonly white or yellow than blue or purple[k].

Native of Germany, Auſtria, Switzerland, Dauphiné, Piedmont, in the lower mountains, dry paſtures, and by the ſide of cultivated grounds.

This plant is more nearly allied to the common ſort, than that is to the *grandiflora*. This, like the *grandiflora*, is more hairy, the leaves more cut, and the flowers more frequently white, in the dry grounds where it is commonly found[l].

Linneus conſiders it as differing very little from the common ſort, and as having ſprung originally from that; the ſame ſtructure remaining, and the fructification being entirely the ſame.]—There are ſeveral varieties of it: γ has narrower leaves, cut into finer ſegments.

[It was cultivated here in 1713, and flowers from july to ſeptember[m].

3. This differs from the common ſort in having an erect ſtem, not an aſcending one, the leaves lanceolate, ſeſſile, quite entire, rugged, not ovate, petioled, ſerrate, even; the corollas four times as large with the keel of the upper lip hairy[n].]

[f] Curtis, Smith, Withering, Lightfoot. [g] Villars. [h] Krocker. [i] Villars. [k] Idem. [l] Idem. [m] Hort. kew. [n] Linn. ſyſt.

The leaves are narrower than either of the former, and are covered on both ſides with fine hairs, and have very ſhort foot-ſtalks; the ſpikes of flowers are ſlender, and the corolla of a pale blue colour.

[Stem ſtraight, firm and little branched; leaves narrow, oblong, entire, hairy; flowers large, blue or white; the upper lip is deeper, hollowed like a helmet, compreſſed by an eminence and villoſe on the outſide; the lower a little concave, cut at the edge[o].

Allioni ſays, that he found the plants removed into the garden from the county of Nice to become leſs ſtrigoſe, and to approach in habit to the common ſort. Bellardi alſo made the ſame obſervation, on ſowing the ſeeds in a garden. Hence Allioni ſuſpects very much that it is nothing more than a variety.

We have here then either four ſpecies or one ſpecies with three varieties; for *grandiflora* differs as much and is as permanent as the others.

P. hyſſopifolia is a native of the South of France and the county of Nice; and was cultivated in 1731, by Mr. Miller. It flowers from july to october[p].]

Mr. Miller enumerates four other ſorts. His fifth ſpecies *P. ſulphurea*, with ſulphur-coloured flowers, is probably a variety of the ſecond. The three others, *P. canadenſis*, n. 4. *P. caroliniana*, n. 6. and *P. Novæ Angliæ*, n. 7. are, as the names imply, natives of North America.

PROPAGATION AND CULTURE.

Sow the ſeeds in the autumn, ſoon after they are ripe; for when ſown in the ſpring, they ſeldom grow till twelve months after; if they ſucceed at all. Thin the plants where too cloſe, and keep them clean from weeds. They thrive beſt on a moiſt ſoil and in a ſhady ſituation, where they will live three or four years, but in rich land they ſeldom continue longer than two years.

[They may alſo be increaſed by parting the roots in autumn.

PRUNELLA. See *Cleonia*, *Dracocephalum*, *Ruellia*.

PRUNIFERA. See *Laurus Perſea* and *Sapindus*.]

PRUNING OF TREES. There is not any part of Gardening of more general uſe than that of Pruning, and yet it is very rare to ſee Fruit Trees ſkilfully managed. Almoſt every Gardener will pretend to be a maſter of this buſineſs, though there are few who rightly underſtand it; nor is it to be learnt by rote, but requires a ſtrict obſervation of the different manners of growth of the ſeveral ſorts of fruit trees, which muſt be differently treated, according as they are naturally diſpoſed to produce their fruit. Some ſorts produce it on the ſame year's wood, as Vines; others for the moſt part upon the former year's wood, as Peaches, Nectarines, &c. and others upon curſons or ſpurs, which are produced upon wood of three, four or five to fifteen or twenty years old, as Pears, Plums, Cherries, &c. In order to the right management of Fruit Trees, there ſhould always be proviſion made for a ſufficient quantity of bearing wood in every part of the tree; and at the ſame time there ſhould not be a ſuperfluity of uſeleſs branches, which would exhauſt its ſtrength, and cauſe it to decay in a few years.

The reaſons for pruning Fruit Trees are: firſt, to preſerve them longer in a vigorous bearing ſtate: ſecondly, to render them more beautiful to the eye: and thirdly, to cauſe the fruit to be larger and better taſted.

1. It preſerves a tree longer in a healthy bearing ſtate: for by pruning off all ſuperfluous branches, the root is not exhauſted in ſupplying ſuch as are uſeleſs, and which muſt afterwards be cut out.

2. By ſkilful Pruning, a tree is rendered much more pleaſing to the eye. But here I would not be underſtood to be an advocate for drawing a regular line along the wall, according to the ſhape which the tree is to be reduced to, and cutting all the branches, ſtrong or weak, exactly to the chalked line; the abſurdity of which practice will ſoon appear to every one who obſerves the difference of thoſe branches ſhooting, at the ſucceeding ſpring. All therefore that I mean by rendering a tree beautiful by pruning is,

[o] Villars. [p] Hort. kew.

that

that the branches ſhould be all cut according to their ſeveral ſtrengths, and nailed at equal diſtances, in proportion to the different ſizes of their leaves and fruit, and that no part of the wall (ſo far as the trees are advanced) be left unfurniſhed with bearing wood. A tree well managed, though it does not repreſent any regular figure, yet will appear very beautiful to the ſight, when thus dreſſed and nailed to the wall.

3. It is of great advantage to the fruit, for the cutting away all uſeleſs branches, and ſhortening all the bearing ſhoots according to the ſtrength of the tree, will render the tree more capable to nouriſh thoſe fruit and branches which are left remaining, ſo that the fruit will be much larger and better taſted. And this is the advantage which thoſe trees againſt walls or eſpaliers have to ſuch as are ſtandards, and are permitted to grow as they are naturally inclined; for it is not their being trained either to a wall or eſpalier which renders their fruit ſo much better than ſtandards, but becauſe the roots have a leſs quantity of branches and fruit to nouriſh, and conſequently their fruit will be larger and better taſted.

The reaſons for Pruning being thus exhibited, the next thing is the method of performing it; but this being fully handled under the ſeveral articles of the different kinds of fruit, I ſhall not repeat it again in this place, and therefore ſhall only add ſome few general inſtructions, which are neceſſary to be underſtood, in order to the right management of fruit-trees.

There are many perſons who ſuppoſe, that if their fruit-trees are but kept up to the wall or eſpalier during the ſummer ſeaſon, ſo as not to hang in very great diſorder, and in winter to get a gardener to prune them, it is ſufficient, but this is a miſtake; for the greateſt care ought to be employed about them in the ſpring, when the trees are in vigorous growth, which is the only proper ſeaſon to procure a quantity of good wood in the different parts of the tree, and to diſplace all uſeleſs branches as ſoon as they are produced, whereby the vigour of the tree will be entirely diſtributed to ſuch branches only as are deſigned to remain, which will render them ſtrong, and more capable to produce good fruit; whereas, if all the branches are permitted to remain which are produced, ſome of the more vigorous will attract the greateſt ſhare of the ſap from the tree, whereby they will be too luxuriant for producing fruit, and the greateſt part of the other ſhoots will be ſtarved, and rendered ſo weak, as not to be able to produce any thing elſe but bloſſoms and leaves, as hath been before mentioned; ſo that it is impoſſible for a perſon, let him be ever ſo well ſkilled in fruit-trees, to reduce them into any tolerable order by Winter-pruning only, if they are wholly neglected in the ſpring.

There are others who do not entirely neglect their trees during the ſummer ſeaſon, as thoſe before-mentioned, but yet do little more good to them by what they call Summer-pruning; for theſe perſons neglect their trees at the proper ſeaſon, which is in april and may, when their ſhoots are produced, and only about midſummer go over them, nailing in all their branches, except ſuch as are produced fore-right from the wall, which they cut out, and at the ſame time often ſhorten moſt of the other branches; all which is entirely wrong practice, for thoſe branches, which are intended for bearing the ſucceeding year, ſhould not be ſhortened during the time of their growth, which will cauſe them to produce one or two lateral ſhoots from the eyes below the place where they were ſtopped, which ſhoots will draw much of the ſtrength from the buds of the firſt ſhoot, whereby they are often flat, and do not produce their bloſſoms; and, if thoſe two lateral ſhoots are not entirely cut away at the Winter-pruning, they will prove injurious to the tree, as the ſhoots which theſe produce, will be what the French call water ſhoots; and in ſuffering thoſe luxuriant ſhoots to remain upon the tree until midſummer before they are diſplaced, they will exhauſt a great ſhare of the nouriſhment from the other branches (as was before obſerved;) and, by ſhading the fruit all the ſpring ſeaſon, when they are cut away, and the other branches faſtened to the wall, the fruit, by being ſo ſuddenly expoſed, will receive a very great check, which will cauſe their ſkins to grow tough, and thereby render them leſs delicate. This is to be chiefly underſtood of ſtone fruit and Grapes, but Pears and Apples being much hardier, ſuffer not ſo much, though it is a great diſadvantage to thoſe alſo to be thus managed.

It muſt alſo be remarked, that Peaches, Nectarines, Apricots, Cherries, and Plums, are always in the greateſt vigour, when they are the leaſt maimed by the knife; for where theſe trees have large amputations, they are very ſubject to gum and decay; ſo that it is certainly the moſt prudent method carefully to rub off all uſeleſs buds when they are firſt produced, and pinch others where new ſhoots are wanted to ſupply the vacancies of the wall, by which management trees may be ſo ordered, as to want but little of the knife in Winter-pruning, which is the ſureſt way to preſerve theſe trees healthful, and is performed with leſs trouble than the common method.

The management of Pears and Apples is much the ſame with theſe trees in ſummer, but in winter they muſt be very differently pruned; for as Peaches and Nectarines for the moſt part produce their fruit upon the former year's wood, therefore they muſt have their branches ſhortened according to their ſtrength, in order to produce new ſhoots for the ſucceeding year; ſo Pears, Apples, Plums, and Cherries, on the contrary, producing their fruit upon curſons or ſpurs, which come out of the wood of five, ſix, or ſeven years old, ſhould not be ſhortened, becauſe thereby thoſe buds, which were naturally diſpoſed to form theſe curſons or ſpurs, would produce wood branches, whereby the trees would be filled with wood, but never produce much fruit; and as it often happens that the bloſſom buds are firſt produced at the extremity of the laſt year's ſhoot, by ſhortening the branches the bloſſoms are cut away, which ſhould always be carefully avoided.

There are ſeveral authors who have written on the ſubject of Pruning in ſuch a prolix manner, that it is impoſſible for a learner to underſtand their meaning. Theſe have deſcribed the ſeveral ſorts of branches which are produced on fruit-trees; as wood branches, fruit branches, irregular branches, falſe branches, and luxuriant branches, all which they aſſert every perſon, who pretends to Pruning, ſhould diſtinguiſh well; whereas there is nothing more in all this but a parcel of words to amuſe the reader, without any real meaning; for all theſe are comprehended under the deſcription already given of luxuriant or uſeleſs branches, and ſuch as are termed uſeful or fruit-bearing branches; and, where due care is taken in the ſpring of the year to diſplace theſe uſeleſs branches (as was before directed,) there will be no ſuch thing as irregular, falſe, or luxuriant branches at the Winter-pruning; therefore it is to no purpoſe to amuſe people with a cant of words, which, when fully underſtood, ſignify juſt nothing at all.

But ſince I have explained the different methods of Pruning the ſeveral ſorts of fruits under the reſpective articles, I ſhall forbear repeating it again in this place, but ſhall only give ſome general hints for the Pruning of ſtandard fruit-trees, and ſo conclude.

Firſt, you ſhould never ſhorten the branches of theſe trees, unleſs it be where they are very luxuriant, and grow irregular on one ſide of the tree, attracting the greateſt part of the ſap of the tree, whereby the other parts are unfurniſhed with branches, or rendered very weak; in which caſe the branch ſhould be ſhortened down as low as is neceſſary, in order to obtain more branches, to fill up the hollow of the trees; but this is only to be underſtood of Pears and Apples, which will produce ſhoots from wood of three, four, or more years old, whereas moſt ſorts of ſtone fruit will gum and decay after ſuch amputations.

But from hence I would not have it underſtood, that I would direct the reducing of theſe trees into an exact ſpherical figure, ſince there is nothing more deteſtable than to ſee a tree (which ſhould be permitted to grow as it is naturally diſpoſed, with its branches

produced at proportionable diſtances, according to the ſize of the fruit,) by endeavouring to make it exactly regular at its head, ſo crouded with ſmall weak branches as to prevent the air from paſſing between them, which will render the trees incapable to produce fruit. All that I intend by this ſtopping of luxuriant branches, is only when one or two ſuch happen on a young tree, where they entirely draw all the ſap from the weaker branches, whereby they ſtarve them, then it is proper to uſe this method, which ſhould be done in time, before they have exhauſted the roots too much.

Whenever this happens to ſtone fruit, which ſuffer much more by cutting than the former ſorts, it ſhould be remedied by ſtopping or pinching thoſe ſhoots in the ſpring, before they have obtained too much vigour, which will cauſe them to puſh out ſide-branches, whereby the ſap will be diverted from aſcending too faſt to the leading branch (as hath been directed for wall-trees,) but this muſt be done with caution.

You muſt alſo cut out all dead or decayed branches, which cauſe their heads to look very ragged, eſpecially at the time when the leaves are upon the tree; theſe being deſtitute of them, have but a deſpicable appearance; beſides, theſe will attract noxious particles from the air, which are injurious to the trees, therefore the ſooner they are cut out the better. In doing of this you ſhould obſerve to cut them cloſe down to the place where they were produced, otherwiſe that part of the branch left will decay, and prove equally hurtful to the tree; for it ſeldom happens, when a branch begins to decay, that it does not die quite down to the place where it was produced; and, if any part is permitted to remain long uncut, does often inſect ſome of the other parts of the tree. If the branches are large which you cut off, it will be very proper, after having ſmoothed the cut part exactly even with a knife, chiſſel, or hatchet, to put on a plaſter of grafting clay, which will prevent the wet from ſoaking into the tree at the wounded part.

All ſuch branches as run acroſs each other ſhould alſo be cut out, for theſe not only occaſion a confuſion in the head of the tree, but, by lying over each other, rub off their bark by their motion, and very often occaſion them to canker, to the great injury of the tree; and on old trees (eſpecially Apples) there are often young vigorous ſhoots from the old branches near the trunk, which grow upright into the head of the trees. Theſe therefore ſhould carefully be cut out every year, leſt, by being permitted to grow, they fill the tree too full of wood; which ſhould always be guarded againſt, ſince it is impoſſible for ſuch trees to produce ſo much, or ſo good fruit as thoſe, whoſe branches grow at a farther diſtance, whereby the ſun and air freely paſs between them in every part of the tree.

Theſe are the general directions which are proper to be given in this place, ſince not only the particular methods, but alſo the proper ſeaſons for Pruning all the different kinds of fruit, are fully exhibited under their ſeveral articles.

[PRUNO AFFINIS. See *Cedrela*, *Guaiacum*, *Spiræa*.

PRUNUM. See *Averrhoa*.]

PRUNUS (*of Pliny and other Latin writers. Said to be a word of Aſiatic origin; the wild Plum, according to Galen, being called προυμνος in Aſia; from the Greek πρυμνη, which occurs in Theophraſtus.*)

Lin. gen. n. 620. *Reich. n.* 675. *Schreb. n.* 849. *Tournef. t.* 398. *Juſſ.* 341. *Gærtn. t.* 93. Armeniaca. *Tournef. t.* 399. *Juſſ.* 341. Ceraſus. *Tournef. t.* 401. *Juſſ.* 340. Lauroceraſus. *Tournef. t.* 403. Padus, *edit. pr.*

Claſſ. 12. 1. Icoſandria Monogynia.

Nat. order of *Pomaceæ*. *Roſaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leaſed, bell-ſhaped, five-cleft, deciduous: *ſegments* blunt, concave.

COR. *Petals* five, roundiſh, concave, large, ſpreading, inſerted into the calyx by their claws.

STAM. *Filaments* twenty to thirty, awl-ſhaped, almoſt the length of the corolla, inſerted into the calyx. *Anthers* twin, ſhort.

PIST. *Germ* ſuperior, roundiſh. *Style* filiform, the length of the ſtamens. *Stigma* orbicular.

PER. *Drupe* roundiſh.

SEED. *Nut* roundiſh, compreſſed, with ſutures a little prominent.

Obs. Padus, *Lauroceraſus*, *Tourn.* 1—6.—Armeniaca, *Tourn.* 7, 8.—Ceraſus, *Tourn.* 9, 10. Prunus, *Tourn.* 11—13.

ESSENTIAL CHARACTER.

Cal. five-cleft, inferior. *Pet.* five. *Drupe* with a nut having the ſutures prominent.

SPECIES.

1. Prunus Padus. *Common Bird-Cherry Tree.*
   Lin. ſpec. 677. *ſyſt.* 462. *Reich.* 2. 483. *fl. lapp. n.* 198. *faec. n.* 431. *hort. cliff.* 185. *Haſſ. angl.* 213. *Wither. arr. ed.* 3. 455. *Lightf. ſcot.* 253. *Smith, brit.* 526. *Gmel. ſib.* 3. 171. *Du Roi harbec.* 2. 188. *Crantz, auſtr.* 1. 94. *Neck. gallob.* 215. *Scop. carn. n.* 589. *Pollich pal. n.* 465. *Fl. dan. t.* 205. *Krock. ſileſ. n.* 746. *Villars dauph.* 3. 532. *Allion. pedem. n.* 1778. *Pleneck, ic.* 381. *Pallas, roſſ.* 1. 16.
   Padus avium. *Mill. dict. n.* 1. *Hall. helv. n.* 1086.
   Ceraſus racemoſa. *Matth.* 234.—ſylveſtris, fructu non eduli. *Bauh. pin.* 451. *Tabern.* 988. *Dubam. arb.* 3.
   C. avium nigra & racemoſa. *Ger.* 1322. 9. *emac.* 1504. 9. *Raii hiſt.* 1549. *ſyn.* 463.
   C. avium racemoſa. *Park. theat.* 1517. 3.
   C. racemoſa quibuſdam, aliis Padus. *Bauh. hiſt.* 1. 228.
   Pſeudoliguſtrum. *Dod. pempt.* 777.
   Flowers in pendulous racemes, leaves deciduous biglandular underneath at the baſe.
2. Prunus rubra. *Corniſh Bird-Cherry Tree.*
   Ait. kew. 2. 162.
   Padus rubra. *Mill. dict. n.* 2. *fig. t.* 196. *f.* 2.
   Ceraſus racemoſa ſylveſtris, fructu non eduli rubro. *Hort. angl.* 18. *n.* 2.
   Flowers in upright racemes, leaves deciduous even biglandular at the baſe.
3. Prunus virginiana. *Common American Bird-Cherry Tree.*
   Lin. ſpec. 677. *ſyſt.* 462. *Reich.* 2. 483. *Willd.* 985. *arb.* 238. *t.* 5. *f.* 1.
   Padus virginiana. *Mill. dict. n.* 3. (See n. 29.)
   Ceraſus ſylveſtris, fructu nigricante in racemis longis pendulis Phytolaccæ inſtar congeſtis. *Gron. virg.* 54. *Duham. arb.* 5. (See n. 29.)
   C. latiore folio, fructu racemoſo purpureo majore. *Cateſb. car.* 2. *t.* 94. (See n. 29.)
   Laurea Ceraſus, ſive Laurus Virginiana. *Park. parad.* 599. *t.* 597. *f.* 6. (See n. 29.)
   Flowers in racemes, leaves deciduous glandular at the baſe in front.
[4. Prunus canadenſis. *Canadian Bird-Cherry Tree.*
   Lin. ſpec. 678. *ſyſt.* 462. *Reich.* 2. 484. *Willd.* 986.
   Ceraſus racemoſa, foliis amygdalinis americana. *Pluk. phyt. t.* 58. *f.* 5.
   Flowers in racemes, leaves deciduous without glands wide-lanceolate wrinkled pubeſcent on both ſides.]
5. Prunus caroliniana. *Evergreen Bird-Cherry Tree.*
   Ait. kew. 2. 163. *Willd. ſpec.* 987.
   P. Padus carolina. *Du Roi harbec.* 2. 198.
   Padus caroliniana. *Mill. dict. n.* 6.
   Flowers in racemes, leaves evergreen oblong-lanceolate ſerrate without glands.
[6. Prunus occidentalis. *Weſt Indian Laurel.*
   Swartz prodr. 80. *Ait. kew.* 163. *Willd. ſpec.* 987.
   Flowers in lateral racemes, leaves perennial without glands oblong acuminate entire ſmooth on both ſides.
7. Prunus ſphærocarpa. *Globe-fruited Laurel.*
   Swartz prodr. 80. *Willd ſpec.* 987.
   Myrti folio arbor, &c. *Sloan. jam.* 2. 79. *n.* 5. *t.* 193. *f.* 1.
   Flowers in axillary racemes, leaves evergreen without glands entire ſhining, drupes roundiſh.]

8. Prunus lusitanica. *Portugal Laurel.*
Lin. spec. 678. *syst.* 462. *Reich.* 2. 484. *Willd.* 987. *arb.* 241.
Padus lusitanica. *Mill. dict. n.* 5. *fig. t.* 196. *f.* 1. *Lin. vir. cliff.* 42. *hort. cliff.* 185. *hort. upsal.* 126.
Laurocerasus lusitanica minor. *Dill. elth.* 193. *t.* 159. *f.* 193. *Tournef. inst.* 628.
Flowers in racemes, leaves evergreen ovate-lanceolate serrate without glands.

9. Prunus Laurocerasus. *Common Laurel.*
Lin. spec. 678. *syst.* 462. *Reich.* 2. 485. *Willd.* 988. *mat. med.* 124. *Woodv. med. bot. app.* 73. *t.* 230. *Du Roi harbecc.* 1. 196. *Blackw. t.* 512. *Plenck, ic.* 383. *Pallas reff.* 1. 17. *Willd. arb.* 242.
Padus Laurocerasus. *Mill. dict. n.* 4. *Lin. vir. cliff.* 42. *hort. cliff.* 185. *hort. upsal.* 126.
Laurocerasus. *Ger. emac.* 1603. *Cam. hort. t.* 23. *Clus. hist.* 1. 4. *Bauh. hist. Raii hist.* 1549. *Tournef. inst.* 627. *Duham. arb.* 1. *t.* 133.
Cerasus folio laurino. *Bauh. pin.* 450.
C. trapezuntina, s. Lauro-cerasus. *Park. theat.* 1518. *f.* 2. *parad.* 401. *t.* 399. *f.* 6.
Flowers in racemes, leaves evergreen biglandular at the back.

[10. Prunus elliptica.
Lin. syst. 463. *Willd.* 986. *Thunb. jap.* 199.
Flowers in racemes, leaves elliptic serrate smooth.

11. Prunus paniculata.
Lin. syst. 463. *Willd.* 988. *Thunb. jap.* 200.
Flowers in spreading panicles, leaves ovate.]

12. Prunus Mahaleb. *Perfumed Cherry Tree.*
Lin. spec. 678. *syst.* 463. *Reich.* 2. 485. *Willd.* 988. *Jacqu. austr.* 3. 15. *t.* 227. *Scop. carn. n.* 588. *Pollich pal. n.* 466. *Du Roi harbecc.* 2. 182. *Krock. silef. n.* 752. *Villars dauph.* 3. 533. *Allion. pedem. n.* 1779. *Plenck, ic.* 382. *Pallas reff.* 1. 16.
Cerasus Mahaleb. *Mill. dict. n.* 4. *Lin. vir. cliff.* 43. *hort. cliff.* 487. *hort. upsal.* 125. *Hall. helv. n.* 1084. *Duham. arb.* 1. *t.* 55.
C. sylvestris amara, Mahaleb putata. *Bauh. hist.* 1. 227. *Raii hist.* 1549. *Tournef. inst.* 627. *Garid.* 96.
Ceraso affinis. *Bauh. pin.* 451.
Mahaleb. *Cam. epit.* 91. *Clus. hist.* 1. 64. *Matth.* 173.
Macaleb Gesneri. *Ger.* 1211. *emac.* 1397.
Machaleb germanicum & syriacum. *Park. theat.* 1519. *n.* 4. 5. *t.* 1518. 4. 5.
Flowers in terminating corymbs, leaves ovate.

13. Prunus armeniaca. *Apricock* or *Apricot Tree.*
Lin. spec. 679. *Reich.* 2. 485. *Willd.* 989. *hort. cliff.* 186. *upsal.* 124. *Du Roi harbecc.* 2. 169. *Thunb. jap.* 200. *Plenck, ic.* 384. *Pallas reff.* 16. *Duham. arb.* 1. 74. *t.* 27. *fruit.* 1. 135. *t.* 2.
Armeniaca. *Mill. dict. Blackw. t.* 281.
A. Malus. *Matth.* 242.
A. mala s. Mala præcocia prisorum. *Baub. hist.* 1. 167. *Camer. epit.* 146.
A. mala majora. *Baub. pin.* 442. *Raii hist.* 1514.
—& nucleo dulci. *Baub. pin.* 442. *Knorr. del.* 1. *t.* A. 2.
A. malus major. *Ger.* 1260. 1. *emac.* 1448. 1.
Mala Armeniaca s. præcocia. *Park. parad.* 579.
ß. A. malus minor. *Baub. pin.* 442. *Ger.* 1260. 2. *emac.* 1448. 2. *Matth.* 243.
A. mala minora. *Baub. hist.* 1. 176. *Raii hist.* 1513.
Flowers sessile, leaves subcordate.

[14. Prunus sibirica. *Siberian Apricot Tree.*
Lin. spec. 679. *Reich.* 2. 486. *Willd.* 989. *Gmel. sib.* 3. 172. *Pallas reff.* 1. 15. *t.* 8. *Du Roi harbecc.* 2. 170.
Armeniaca betulæ folio & facie, fructu exfucco. *Amm. ruth.* 192. *n.* 272. *t.* 30.
Flowers sessile, leaves ovate oblong.]

15. Prunus pumila. *Dwarf Canadian Cherry Tree.*
Lin. syst. 463. *Reich.* 2. 486. *Willd.* 990. *mant.* 75. *Du Roi harbecc.* 2. 186. *Gron. virg.* 2. 76.

Cerasus canadensis. *Mill. dict. n.* 5. *fig.* 60. *t.* 89. *f.* 2. *Duham. arb.* 149. *n.* 17.
Flowers subumbelled, leaves narrow-lanceolate.

16. Prunus Cerasus. *Common* or *Cultivated Cherry Tree.*
Lin. spec. 679. *Reich.* 2. 486. *Willd.* 991. *mat. med.* 124. *Hudf. angl.* 213. *Wither. arr. ed.* 3. 455. *Smith, brit.* 526. *Blackw. t.* 449. *Du Roi harbecc.* 2. 175. *Pollich pal. n.* 467. *Krock. silef. n.* 748. *Villars dauph.* 3. 533. *Allion. pedem. n.* 1780. *Plenck, ic.* 378.
Cerasus foliis ovato-lanceolatis. *Lin. vir. cliff.* 43. *hort. upsal.* 125. *Duham. arb.* 2. *t.* 56.
α. Cerasus (caproniana) fativa rotunda rubra & acida. *Bauh. pin.* 449. *Raii hist.* 1537.
C. vulgaris. *Mill. dict. n.* 1. *Ger.* 1319. 1. *emac.* 1502. *Park. theat.* 1517. 1.
The common English or *Kentish Cherry Tree.*
C. anglica. *Park. parad.* 571.
Cerasa acida rubella. *Bauh. hist.*
β. C. (rosea) hortensis, flore roseo. *Bauh. pin.* 450.
γ. C. (plena) hort. pleno flore. *Bauh. pin.* 450. *Mill. fig.* 59. *t.* 89. *f.* 1. *Ger.* 1321. 7, 8. *emac.* 1504.
Double-flowering Cherry Tree.
C. flore pleno. *Bauh. hist. Raii hist.* 1538.
C. flore multiplici. *Park. parad.* 402. *t.* 403. *f.* 1.
δ. C. (dulcis). Cerasa alba dulcia. *Bauh. pin.* 450.
ι. Cerasa (juliana) carne tenera & aquosa. *Bauh. pin.* 450.
ζ. C. (austera) acidissimo sanguineo succo. *Bauh. pin.* 450.
κ. C. pumila. *Bauh. pin.* 450. *hist.* 1. 223. *Raii hist.* 1539.
P. fruticosa. *Gmel. sib.* 3. 171. *Pallas, reff.* 1. 19. *t.* 8. B.
The Dwarf Cherry Tree.
ϑ. C. (avium) racemosa hortensis. *Bauh. pin.* 450.
C. racemosa. *Raii hist.* 1539.
C. hortensis. *Mill. dict. n.* 3.
Umbels subpeduncled, leaves ovate-lanceolate smooth folded together.

17. Prunus avium. *Small-fruited Cherry Tree.*
Lin. spec. 680. *syst.* 463. *Reich.* 2. 487. *Willd.* 991. *fl. suec. n.* 429. *mat. med.* 125. *Hudf. angl.* 213. γ. *Wither. arr. ed.* 3. 456. *Smith, brit.* 527. δ, ι. *Ligbtf. scot.* 254. *Sibth. oxon. n.* 445. *Abbot, bedf.* 107. *Du Roi harbecc.* 2. 172. *Pollich pal. n.* 468. *Krock. silef. n.* 747. *Villars dauph.* 3. 534. *Allion. pedem. n.* 1781. *Ludw. edit. t.* 108. *Blackw. t.* 425. *Knipb. cent.* 5. *n.* 73. *Regn. bot. Pletck, ic.* 377.
Cerasus sylvestris fructu rubro. *Bauh. hist.* 1. 220. *Raii syn.* 463.
α. C. nigra. *Mill. dict. n.* 2. *Ger.* 1323. 11. *emat.* 1505.
Black Cherry Tree.
C. sylvestris fructu nigro. *Bauh. hist.* 1. 220.
C. major ac sylv. fructu subdulci, nigro colore inficiente. *Bauh. pin.* 450.
β. Corone or Coroun Cherry. *Mill. dict.*
Umbels sessile, leaves ovate-lanceolate pubescent underneath folded together.

[18. Prunus pensylvanica. *Pensylvanian* or *Upright Cherry Tree.*
Lin. syst. 463. *Willd.* 992. *suppl.* 252. *Ait. kew.* 2. 165. *Abbot, georg. t.* 45.
Umbels subsessile aggregate many-flowered at length panicle-shaped, leaves oblong-lanceolate acuminate smooth glandular at the base.

19. Prunus nigra. *Canadian Black Cherry Tree.*
Ait. kew. 2. 165. *Willd. spec.* 993.
Umbels sessile solitary few-flowered, leaves deciduous ovate acuminate, petioles biglandular.]

20. Prunus domestica. *Common Plum Tree.*
Lin. spec. 680. *syst.* 463. *Reich.* 2. 488. *Willd.* 995. *mat. med.* 125. *Woodv. med. bot.* 234. *t.* 85. *hort. cliff.* 186. *upsal.* 124. *Smith, brit.* 527. *Wither. arr. ed.* 3. 456. *Gaertn. fruct.* 2. 74. *Du Roi harbecc.* 2. 160. *Hall. helv. n.* 1079. *Krock. silef. n.* 749. *Villars dauph.* 3. 536. *Allion. pedem. n.* 1782. *Regn. bot. Plenck, ic.* 379. *Ger.* 1311. 1. *emac.* 1497. 1.

Prunus communis δ. *Hudſ. angl.* 212.
P. ſativa. *Fuchſ. hiſt.* 403. *Raii hiſt.* 1526. *Blackw. t.* 309.
P. ſylveſtris fructu majore. *Vaill. par.* 140.
Prunus. *Bauh. pin.* 443. *Park. theat.* 1512. *Matth.* 265. *Dod. pempt.* 805.
β. Pr. damaſcena. *The Damaſcene, Damaſk* or *Damſon Plum.*
Pruna majora dulcia & parva atro-cærulea. *Bauh. pin.* 443. *n.* 23. *Blackw. t.* 305. *Knorr. del.* 1. *t.* P. 2. *Raii hiſt.* 1526. 1. *Park. parad.* 578.
γ. P. hungarica.
Pr. magna craſſa ſubacida. *Bauh. pin.* 443.
δ. Pr. juliana. *The St. Julian Plum. Mill. dict. n.* 30.
Pr. oblonga cœrulea. *Bauh. pin.* 443.
ε. Pr. pertigona. *The Perdigron Plum. Mill. dict. n.* 7.
The Perdigon plumme, *Park. parad.* 576.
Pr. nigra, carne dura. *Bauh. pin.* 443.
ζ. Pr. cerea. *White Imperial Bonum Magnum* or *Mogul Plum.*
Pr. coloris ceræ ex candido in luteum palleſcente. *Bauh. pin.* 443.
η. Pr. acinaria.
Pr. magna rubra rotunda. *Bauh. pin.* 443.
θ. Pr. maliformis.
Pr. rotunda flava dulcia mali amplitudine. *Bauh. pin.* 443.
ι. Pr. auguſtana.
Pr. Auguſto matureſcentia minora & auſteriora. *Bauh. pin.* 443. 10.
κ. Pr. præcox. *Primordian Plum. Mill. dict. n.* 1.
Pr. parva præcocia. *Bauh. pin.* 443.
λ. Pr. cereola. *Verdoch* or *Verdock.*
Pr. parva ex viridi flaveſcentia. *Bauh. pin.* 443.
μ. Pr. amygdalina.
Pr. amygalina. *Bauh. pin.* 443.
ν. Pr. galatenſis.
Pruneoli albi oblongiuſculi acidi. *Bauh. pin.* 443.
ο. Pr. Brignola. *Brignole Plum. Mill. dict. n.* 24.
Pr. ex flavo rufeſcentia mixti ſaporis gratiſſima. *Bauh. pin.* 443. *Raii hiſt.* 1526. 2.
Peduncles ſubſolitary, leaves lanceolate-ovate convoluted, branches without thorns.
21. Prunus inſititia. *The Bullace Plum Tree.*
Lin. ſpec. 680. *Reich.* 2. 489. *Willd.* 996. *amoen.* 4. 273. *Hudſ. angl.* 212. *Smith, brit.* 528. *Wither. arr. ed.* 3. 456. *Relh. cant. n.* 356. *Sibth. oxon. n.* 444. *Du Roi harbecc.* 2. 165. *Hall. helv. n.* 1081. *Krock ſileſ. n.* 750. *Villars dauph.* 3. 536.
Pr. ſylveſtris major. *Bauh. hiſt. Raii hiſt.* 1528. *ſyn.* 462. *Duham. arb.* 2. *t.* 41.
Pruna ſylv. præcocia. *Bauh. pin.* 444.
α. P. ſylv. fructu majore nigro. *Raii ſyn. ed.* 2. 301.
The Black Bullace Tree. *Mill. dict. n.* 31.
β. P. ſylv. fructu majore albo. *Raii ſyn. ed.* 2. 302.
The White Bullace Tree. *Mill. dict. n.* 32.
γ. P. ſylv. fructu rubro acerbo & ingrato. *Raii ſyn. ed.* 2. 302.
Peduncles in pairs, leaves lanceolate-ovate convoluted villoſe underneath, branches terminated by a thorn.
22. Prunus ſpinoſa. *Sloe Plum Tree* or *Black-thorn.*
Lin. ſpec. 681. *Reich.* 2. 489. *Willd.* 997. *hort. cliff.* 186. *fl. ſuec. n.* 432. *mat. med.* 125. *Woodv. med. bot.* 233. *t.* 84. *Hudſ. angl.* 212. *Wither. arr. ed.* 3. 457. *Smith, brit.* 528. *Lightf. ſcot.* 254. *Relh. cant. n.* 358. *Sibth. oxon. n.* 447. *Fl. dan. t.* 926. *Hall. helv. n.* 1080. *Neck. gallob.* 214. *Du Roi harbecc.* 2. 166. *Scop. carn. n.* 586. *Pollich pal. n.* 469. *Krock. ſileſ. n.* 751. *Villars dauph.* 3. 537. *Allion. pedem. n.* 1783. *Duham. arb.* 2. 186. *Blackw. t.* 494. *Regn. bot. Pleneck, ic.* 380.
β. ſylveſtris. *Bauh. pin.* 444. *Tabern. ic.* 992. *Trag. hiſt.* 1016. *Fuchſ. hiſt.* 404. *Bauh. hiſt.* 1. 193. *Lonic.* 1. 51. *Matth.* 266. *Dod. pempt.* 753. 2. *Lob. obſ.* 595. 1. *Ger.* 1313. 1, 2. *emac.* 1497. 5. *Park. theat.* 1033. *Raii hiſt.* 1527. *ſyn.* 462.
Σωδιαc. *Theophraſto.*
Spinus. *Virgilio.*
Peduncles ſolitary, leaves lanceolate ſmooth branches thorny.

[23. Prunus aſpera.
Lin. ſyſt. 463. *Willd.* 993. *Thunb. jap.* 201.
Flowers ſolitary terminating, leaves ovate ſerrate rough.
24. Prunus japonica.
Lin. ſyſt. 463. *Willd.* 994. *Thunb. jap.* 201.
Peduncles ſolitary, leaves ovate acuminate ſmooth, branches unarmed.
25. Prunus glanduloſa.
Lin. ſyſt. 463. *Willd.* 994. *Thunb. jap.* 202.
Peduncles ſolitary, leaves oblong glandular-ſerrate, branches unarmed.
26. Prunus inciſa.
Lin. ſyſt. 463. *Willd.* 994. *Thunb. jap.* 202.
Peduncles ſolitary, leaves ovate gaſh-ſerrate villoſe, branches unarmed.
27. Prunus tomentoſa.
Lin. ſyſt. 464. *Willd.* 995. *Thunb jap.* 203.
Peduncles ſolitary, leaves ovate tomentoſe underneath.
28. Prunus proſtrata.
Billardiere ic. ſyr. 1. 15. *t.* 6. *Deſfont. atlant.* 395. *Willd. ſpec.* 997.
P. cretica montana minima humifuſa, flore ſuaverubente. *Tournef. cor.* 43.
Amygdalus incana. *Pallas, roſſ.* 1. 13. *t.* 7.
Peduncles in pairs, leaves ovate unequally ſerrate without glands tomentoſe underneath, ſtem proſtrate.
29. Prunus ſerotina.
Willd. ſpec. 986. *arb.* 239. *t.* 5. *f.* 2. *Ehrh. Beitr.* 3. 20.
P. virginiana. *Mill. dict. n.* 3. *Du Roi harbecc.* 2. 191.
Flowers in looſe racemes, leaves deciduous ſimply ſerrate, loweſt ſerratures glandular.
30. Prunus daſycarpa.
Willd. ſpec. 990. *arb.* 243. *Ehrh. Beitr.* 6. *p.* 90.
Flowers ſeſſile, leaves ovate acuminate doubly ſerrate, petioles glandular.
31. Prunus ſemperflorens. *Everflowering Cherry.*
Willd. ſpec. 992. *arb.* 247. *Ehrh. Beitr.* 7. *p.* 132.
P. ſerotina. *Reth. catalect.* 1. 58.
Ceraſus ſativa æſtate continuo florens & frugeſcens. *Duham. arb.* 1. 178. *Du Roi harbecc.* 2. 178.
C. fructu ſerotino, cum pediculo longiori foliato. *Tournef. inſt.* 626.
C. racemoſa. *Bauh. hiſt.* 1. 223.
Flowers in racemes, calyxes ſerrate, leaves ovate ſerrate glandular at the baſe.
32. Prunus pygmæa. *Pigmy Plum.*
Willd. ſpec. 993. *arb.* 248.
Umbels ſeſſile few-flowered, leaves elliptic acute biglandular at the baſe ſmooth.
33. Prunus cerafifera. *Myrobalan Plum.*
Willd. ſpec. 997. *arb.* 250. *Ehrh. Beitr.* 4. *p.* 17. *Donn hort. cant.* 64.
P. domeſtica Myrobalan. *Lin. ſpec.* 680. *Mill. dict. n.* 17. *Park. parad.* 578. *Raii hiſt.* 1527. 3.
P. domeſt. c. *Du Roi harbecc.* 2. 164.
P. fructu rotundo nigro-purpureo dulci. *Bauh. pin.* 444.
P. fr. majori rot. rubro. *Tournef. inſt.* 622.
Peduncles ſolitary, leaves elliptic ſmooth, fruits pendulous on branches almoſt deſtitute of prickles.

DESCRIPTIONS, *&c.*

Linneus has united the *Bird Cherry* or *Padus*, the *Apricot*, the *Cherries*, and the common and Portugal *Laurels*, with the *Plums* in the ſame genus *Prunus*. Mr. Miller has treated on them ſeparately under *Padus*, *Armeniaca*, *Ceraſus* and *Prunus*; uniting the Laurels with *Padus*. Juſſieu ſeparates *Ceraſus* and *Armeniaca* from *Prunus*; and unites *Padus* and the *Laurels* with the former: making the difference to conſiſt only in the fruit or drupe.]

1. The common Bird Cherry riſes to the height of ten or twelve feet, and if permitted to ſtand, will have a trunk of nine or ten inches in diameter. The branches grow wide and ſcattering, and are covered with a purpliſh bark. Leaves ovate-lanceolate, alternate, ſlightly ſerrate. Flowers in long looſe bunches from the ſide of the branches. Petals white, much ſmaller than thoſe of the Cherry. Flowers ranged alternately, each on a ſmall pedicel: they have a ſtrong ſcent,

ſcent, which is very diſagreeable to moſt perſons. They appear in may, and are ſucceeded by ſmall roundiſh fruit, at firſt green, afterwards red, but when ripe black; incloſing a roundiſh furrowed ſtone or nut, which ripens in auguſt.

[The flowers are in leafy racemes below the leaves. The petals are ſerrate, as in the *Prunus virginiana*, not emarginate as in the Cherry[t].

According to Haller, it is a very leafy ſhrub, ten feet in height. Leaves ſoft and acuminate. Petals ſmall, flaccid. Stamens from twenty to thirty-three. Under each flower a wide mucronate bracte. It differs from the Cherry, in having the flowers ſolitary, the calyx ſhort neither reflex nor caducous, and the ſtone rugged.

Scopoli remarks, that the leaves are ovate and ſerrate; the peduncles ſpreading and ſimple; the petals ſubovate; the calycine teeth reflex; the ſtamens not more than twenty-four; the germ ſmooth in the villoſe bottom of the calyx.

Branches round, even. Leaves alternate, petioled, obovate, acuminate, ſerrate with the ſerratures bent in, veined, ſmooth, ſomewhat glaucous, having an acrid ſmell like Rue. Stipules intrafoliaceous, in pairs, linear, ſubciliate, deciduous. Racemes from the baſe of the year's ſhoots, ſolitary, ſimple, nodding, many-flowered, ſmooth, leafy at the baſe. Petals ſerrulate. Fruit black, having a nauſeous taſte[u].

Withering obſerves, that the calyx is finely ſerrated as well as the petals, and at the bottom within is beſet with numerous woolly hairs, and that the ſtamens are twenty-five in number.

Native of moſt parts of Europe, in woods and hedges; alſo in all the northern and temperate part of Ruſſia and all Siberia. Common in the north of England, as about Ingleborough in Yorkſhire, in woods by the Tees, at Pendeford in Staffordſhire, a few miles north of Mancheſter. In ſome parts of Norfolk, as about Watton and Dereham. In a lane between Temple Mills and Epping Foreſt. Frequent in Scotland, in woods.

The Bird Cherry, Fowl Cherry or wild Cluſter Cherry Tree, called in Scotland Hag-berry, which is commonly propagated in the nurſeries as an ornamental tree or ſhrub, grows well in woods, groves or fields, but not in a moiſt ſoil. It bears lopping, and ſuffers the graſs to grow under it. The fruit is nauſeous, but bruiſed and infuſed in wine or brandy, it gives them an agreeable flavour. A ſtrong decoction of the bark is uſed by the Finlanders to cure venereal complaints; which practice is corroborated by the teſtimony of M. Broerland in the Stockholm acts. He directs ſix ounces of the dry, or eight of the freſh bark to be boiled away in eight pints of water to four: the doſe is four ounces four times a day. It cures the ſlighter infections alone, and combined with mercury facilitates the cure in ſeverer ſtages of the diſeaſe. A decoction of the berries is ſometimes given with ſucceſs in the dyſentery. The wood being ſmooth and tough, is made into handles for knives and whips. Sheep, goats and ſwine eat it, cows are not fond of it, horſes refuſe it[x]. The berries are much ſought after by birds, and though very nauſeous are eaten by children in ſome places[m]. In Scotland they drink an infuſion of them in brandy[n].]

2. The Red Bird Cherry, commonly called in the nurſery gardens about London the Corniſh Cherry, has been confounded with the preceding, but when raiſed from ſeed it always retains a difference. It riſes with a ſtraight upright ſtem more than twenty feet high; the branches are ſhorter, and cloſer together than thoſe of the firſt, and naturally form a regular head. The leaves are ſhorter and broader, and not ſo rough. The flowers grow in cloſer ſhorter ſpikes, ſtanding more erect. The fruit is larger, and red when ripe. It flowers a little later than the firſt ſort, namely in may and june; and the fruit ripens in auguſt.

Mr. Miller ſays it grows naturally in Armenia, whence he received the ſeeds: [its native place, however is doubtful. It appears from Furber's catalogue, that it was cultivated here in 1724[o].]

3. This riſes with a thick ſtem from ten to thirty feet high, dividing into many branches, which have a dark purple bark. Leaves ovate, alternate, on ſhort foot-ſtalks, of a lucid green, ſlightly ſerrate, and continuing in verdure as late in the autumn as any of the deciduous trees. The fruit is larger than that of the preceding, is black when ripe, and is ſoon devoured by birds. The wood is beautifully veined with black and white, and will poliſh well; it is therefore frequently uſed for cabinet work; as is alſo the firſt ſort, particularly in France, where it is called *Bois de Sainte Lucie*. (See n. 29.)

[According to Linneus, this is the offspring of the common Bird Cherry, but the warts on the branches are double the ſize. There are two pairs of glands at the top of the petiole in front. The leaves are leſs netted underneath and almoſt ſmooth. The petals are orbicular, not obovate. The fruit is four times as big, not red, as Linneus ſays it is, but like the common ſort firſt green, then red and finally black[p].

Parkinſon calls it the Virginian Cherry Bay. It is a native of Virginia and other parts of North America, and was cultivated here in 1629, as appears from Parkinſon's Paradiſus[q]. Willdenow makes the *rubra* of the Kew Catalogue a variety of this; and his own *rubra* a variety of *Prunus Padus*.]

4. Branches even. Leaves leſs rigid than in the others, finely ſerrate, green on both ſides, but manifeſtly villoſe to the touch, and ending in the petiole at the baſe.

Native of North America[r].

5. This ſeems to be rather a ſhrub, if we may judge from its growth here; the ſtalk does not riſe more than three feet high, but ſends out lateral branches ſpreading on every ſide, covered with a brown bark. Leaves alternate on very ſhort foot-ſtalks, near two inches long and three quarters of an inch broad, with ſmall acute indentures on their edges; they are of a lucid green, continuing their verdure all the year.

Native of South Carolina, whence the ſeeds were ſent by the name of Baſtard Mahogany, from the colour of the wood. It never flowered with Mr. Miller. [He cultivated it in 1759, and it is now found to flower in may[s].

6. Native of the Weſt Indies[t].—Introduced from Jamaica in 1784, by Matthew Wallen, Eſq.[u]

7. Trunk covered with a gray ſmooth bark. Wood very hard and white. Leaves alternate, two inches long, one inch and a half broad near the round baſe, even, ſhining, with very few apparent veins on the ſurface, without any indentures on the edges, pointed, on a footſtalk one third of an inch in length. Flowers white, in racemes oppoſite to a leaf, according to Sloane's figure.—Native of Jamaica[x], and Hiſpaniola[y].]

8. The Portugal Laurel riſes with a ſtrong tree-like ſtem to the height of twenty feet or more, ſending out many branches on every ſide, which have a ſhining purpliſh bark. Leaves on ſhort foot-ſtalks, of a lucid green, about three inches long, and an inch and half broad in the middle; they are ſometimes ſlightly ſerrate, but generally entire. The flowers are produced in long bunches from the ſide of the branches; they are white and ſhaped like thoſe of the common Laurel. Berries oval, pulpy, at firſt green, then red, and when ripe very dark purple; ſmaller than thoſe of the Laurel, and narrower at the end; encloſing an oval ſtone, like that of the Cherry, but more pointed at the top.

This ſhrub flowers in june, and the berries ripen in october: theſe ſhould be gathered as ſoon as they are ripe, otherwiſe the birds will devour them.

The Portugal Laurel is one of the moſt beautiful evergreen ſhrubs which we have in our plantations,

[t] Linn. ſpec. [u] Smith. [x] Withering.
[m] Rali hiſt. & Linn. ſuec. [n] Lightfoot.
[o] Hort. kew. [p] Du Roi. [q] Hort. kew.
[r] Linn. ſpec. [s] Hort. kew. [t] Swartz.
[u] Hort. kew. [x] Sloane. [y] Swartz.

eſpecially

eſpecially when it is planted in a looſe moiſt ſoil. The branches covered with a bright purple bark, the ſhining evergreen leaves, and the long racemes of white flowers, all together make a fine appearance. Being rarely injured by the ſevereſt cold of our winters, there is not any ſhrub which better deſerves our care to propagate.

It was brought to England from Portugal, but whether it is a native of that country, or was introduced from ſome other, is not certain. The Portugueſe call it Azoureiro. [According to the Kew catalogue, it is a native of Portugal and Madeira; and was cultivated in 1722, by Mr. Thomas Fairchild, as appears from Knowlton's manuſcripts.

9. The Common Laurel is a ſhrub ſending off long ſpreading branches, covered with a ſmooth brown bark. Leaves elliptical or obovate, ſlightly ſerrate, alternate, upon ſtrong, ſhort foot-ſtalks. Flowers on ſhort axillary peduncles. Calyx ovate; ſegments reflex, pointed. Petals ſmall, white. Filaments about eighteen. Fruit reſembling a black cherry, both in its external and internal ſtructure [a].

It differs from the Portugal Laurel in having the twigs and petioles green, whereas in that they are reddiſh brown. The leaves are of a yelloviſh green, whereas the green on the upper ſurface is very dark in the Portugal Laurel; they are alſo much wider in proportion and elliptical, but in the preceding they are rather lanceolate; they are both toothed about the edge, but the Common Laurel more ſlightly, and the ſerratures of this are very harſh to the touch, as if they had prickles at the end; the veins are much more prominent at the back of the leaves in the Common Laurel; in the Portugal Laurel the leaves are commonly repand along the edge; but in this they are flat except that the edge is a little bent back. The leaves in both are acuminate but end bluntly, and they generally bend down at the point. The young leaves are inclined to fold together upwards, like thoſe of the Cherry, in the Common Laurel; but in the Portugal Laurel they are revolute, leaving a wide longitudinal hollow above: the old leaves are generally imperfect at the end, and in the Common Laurel are ſometimes retuſe or emarginate. The glands, which are obſolete, are placed on each ſide the midrib, about half an inch above the petiole.

It flowers in april, and is a native of the Levant, of Caucaſus, the mountains of Perſia, and the Crimea. Cluſius received it at the beginning of the year 1576 from David Ungnad, then Ambaſſador from the Emperor of Germany at Conſtantinople, and afterwards Preſident of the Council of War at Vienna, with ſome other rare trees and ſhrubs, all of which periſhed by the ſeverity of the winter, and the careleſneſs of thoſe who brought them, except this and a Horſe Cheſtnut. It was ſent by the name of *Trabiſon curmaſi*, or Date of Trebiſond.

Cluſius relates that the plant of Laurel was almoſt dead when it arrived; he put it into a ſtove exactly as it came, in the ſame tub and earth; in the april following he took it out, cut off all the dead and withered branches, and ſet it in a ſhady place; in the autumn it began to ſhoot from the root; he then removed the living part into another tub, and took great care of it: when it was advanced in growth, he laid down the branches, which took root, and he diſtributed the plants among his friends and men of eminence. Such was the origin, in Europe, of a ſhrub now become ſo common every where. Cluſius's plant died without flowering; but another which he gave to Aicholtz flowered in may 1583; and a few years afterwards with Joachim Camerarius at Nurimberg [b].

Parkinſon, in his Paradiſus, publiſhed in 1629, ſays he had a plant of the Bay Cherry, as he calls it, by the friendly gift of Maſter James Cole a Merchant of London then lately deceaſed, a great lover of all rarities, who had it growing with him at his country houſe in Highgate, where it had flowered divers times, and borne ripe fruit alſo. He deſcribes Maſter Cole's as a fair tree, which he defended from the bitterneſs of the weather, by caſting a blanket over the top thereof every year, thereby the better to preſerve it.

In the appendix to Gerarde's herbal enlarged by Johnſon, publiſhed in 1633, it is ſaid, that the Cherry Bay is now got into many of our choice Engliſh gardens, where it is well reſpected for the beauty of the leaves, and their laſting or continual greenneſs. Ray, in 1688, relates, that it was then very common in Engliſh gardens and plantations, that it flowered and fruited very well, was very patient of cold, and braved our winters even in an expoſed ſituation; that it takes readily, is of quick growth, and in a ſhort time becomes a tree of tolerable ſize [c].

Laurel leaves have a bitter ſtyptic taſte, accompanied with a flavour reſembling that of bitter almonds, or other kernels of the drupaceous fruits. The flowers alſo manifeſt a ſimilar flavour. The powdered leaves excite ſneezing, though not ſo ſtrongly as tobacco.

The kernel-like flavour which the freſh leaves impart being generally eſteemed grateful, has cauſed them to be uſed for culinary purpoſes, in cuſtards, puddings, blancmange, &c. and as the proportion of this ſapid matter of the leaf to the quantity of milk is commonly inconſiderable, probably little or no bad effect may be produced. But ſince the poiſonous quality of the Laurel is now indubitably proved, the public ought to be cautioned againſt its internal uſe.

An account in the 37th volume of the Philoſophical Tranſactions by Dr. Madden of Dublin, of two women being poiſoned by the ſimple diſtilled water of Laurel leaves, contain the firſt and principal proofs of the deleterious effects of this vegetable upon the human race.

In addition to this we may refer to the unfortunate caſe of Sir Theodoſius Boughton, whoſe death in 1780 was occaſioned by this poiſon: but in his caſe the active principle of the Laurel was concentrated by repeated diſtillations, and given to the quantity of an ounce.

To brute animals this poiſon is almoſt inſtantaneouſly mortal, as amply appears by the experiments of Madden, Mortimer, Nicholls, Langriſh, Vater, Fontana and others. Upon human ſubjects its action is much leſs powerful.

Dr. Cullen obſerves, that the ſedative power of Laurocerafus acts upon the nervous ſyſtem in a different manner from Opium and other narcotic ſubſtances, whoſe primary action is upon the animal functions; for Laurocerafus does not occaſion ſleep, nor does it produce local inflammation, but ſeems to act directly upon the vital powers. Abbé Fontana ſuppoſes that this poiſon deſtroys animal life by exerting its effects upon the blood; but the experiments and obſervations from which he deduces this opinion are evidently inconcluſive.

Though this vegetable ſeems to have eſcaped the notice of Stoerck, yet it is not without advocates for its medicinal uſe. Linneus informs us, that in Switzerland it is commonly and ſucceſsfully uſed in pulmonary complaints. Langriſh mentions its efficacy in agues; and as Bergius found bitter almonds to have this effect, we may from analogy conclude, that this power of Laurocerafus is well eſtabliſhed. Bayliſs found that it poſſeſſed a remarkable power of diluting the blood, and from experience recommended it in all caſes of diſeaſe ſuppoſed to proceed from too denſe a ſtate of that fluid; adducing particular inſtances of its efficacy in rheumatiſm, aſthma, and ſchirrous affections. Nor does this author ſeem to have been much afraid of the deleterious quality of Laurocerafus, for he directs a pound of its leaves to be macerated in a pint of water, and from thirty to ſixty drops of this liquor to be given three or four times a day [c].

10. Stem arboreous. Branches and branchlets alternate, knobbed, dotted with white, wrinkled, ſmooth. Leaves on the branchlets aggregate, ſcattered, on ſhort petioles, bluntiſh, veined, ſpreading, a finger's length. Racemes few-flowered. Drupe

[a] Woodville. [b] Cluſ. hiſt. [c] Ray, hiſt. [d] Woodville.

oblong,

oblong, the ſize of a ſmall grape. This tree is ſaid to have been introduced into Japan by the Portugueze inſtead of the Olive.

11. Stem arboreous, wholly ſmooth. Branches and branchlets alternate, erect. Leaves ſcattered, petioled, acute, ſerrate, veined, ſmooth, unequal, from an inch to two inches in length and more. Petioles erect, a line long. Flowers white, in a wide and very ſpreading panicle; in which circumſtance it differs from the Mahaleb: as alſo in having ſmaller flowers, and the leaves more oblong, attenuated below, and acutely ſerrate.—Native of Japan[a].

12. Leaves folded together, blunt, crenate. Stipules crenate, with brown teeth. Corymb convex. Bractes very ſhort, very blunt, ſerrate[c].

This is a low crooked tree. The wood is red, very hard, and ſweet-ſcented. Leaves wide and pointed, approaching to thoſe of the wild Pear. Flowers white. Fruit black, yielding a bitter purple juice, the ſtain of which is not eaſily effaced; the ſtone is ſmooth, round and a little flatted on the ſides; incloſing a bitter perfumed kernel[f]. Birds are very fond of this fruit. A fragrant and pleaſant diſtilled water is made from both leaves and flowers[g].]

The wood, on account of its agreeable odour is greatly eſteemed by the French for making cabinets and other furniture. This and the wood of the Bird Cherry are often confounded, and paſs under the appellation of Bois de Sainte Lucie, but the Bird Cherry is the true ſort. [Villars however calls the Mahaleb by this name.

Native of Germany, Switzerland, Auſtria, the South of France and Piedmont, Crim Tartary and every where on Caucaſus.—Cultivated in 1714 by the Dutcheſs of Beaufort. It flowers in april and may[b]. Ray calls it Rock Cherry.

Gerarde ſays, that "the fruit is as hard as a bead "of corall, ſomewhat round and of a ſhining black "colour, which the cunning French perfumers do "bore through, making thereof bracelets, chains, "and ſuch like trifling toys, which they ſend into "England ſmeared over with ſome odd ſweet com-"pound or other, and here ſold unto our curious "ladies and gentlewomen for rare and ſtrange Pome-"ambers, for great ſums of money."

13. The Apricock or Apricot is ſufficiently diſtinguiſhed by its broad roundiſh leaves drawn to a point at the end, ſmooth, glandular at the baſe in front, where they are ſometimes ſlightly cordate, and unequal, that is, one ſide longer than the other; the edge is finely ſerrate; the petiole is from half an inch to an inch in length, commonly tinged with red. Linneus remarks, that the vernant leaves are convoluted, that is, not folding flat together like thoſe of the Cherry, but rolling upwards more or leſs; the leaves of many Apricot trees have a diſpoſition to this at all times. The flowers are ſeſſile, white tinged with the ſame duſky red that appears on the petioles. The fruit is round, yellow within and without, firmer than Plums and moſt Peaches, incloſing a ſmooth compreſſed ſtone, reſembling that of the Plum.

Parkinſon, more than a century before Linneus affirmed, that "the Apricocke is without queſtion a "kind of Plumme. And yet," ſays he, "becauſe "of the excellency of the fruit, and the difference "therein from all other Plummes, I have thought it "meete to entreate thereof by itſelfe.

"The Apricocke riſeth up to a very great height, "having a great ſtemme or body, and likewiſe many "great armes or branches, covered with a ſmooth "barke: the leaves are large, broad, and almoſt "round, but pointed at the ends, and finely dented "about the edges: the flowers are white, as the "Plumme tree bloſſomes, but ſomewhat larger, and "rounder ſet: the fruit is round, with a cleft on the "one ſide, ſomewhat like unto a Peach, being of a "yellowiſh colour as well on the inſide as outſide, of "a firme or faſt ſubſtance, and dry not overmoiſt in "the eating, and very pleaſant in taſte, containing "within it a broad and flat ſtone, ſomewhat round "and ſmooth, not rugged as the Peach ſtone, with a "pleaſant ſweet kernell, and is ripe almoſt with our "firſt or earlieſt Plummes, and thereof it took the "name of *Præcox*."

It is not certain of what country this fruit-tree is a native. It undoubtedly came into Europe from ſome part of Aſia, and by its name of *Malus Armeniaca* was ſuppoſed to originate from Armenia. Thunberg deſcribes it as a very large, ſpreading, branching tree in Japan; Groſier ſays that it covers the barren mountains to the weſt of Pekin. Pallas, that it is commonly wild on the whole tract of Caucaſus.

Parkinſon gives us the following varieties as known in 1629.

1. The great, which ſome call the long Apricocke; the greateſt and faireſt of all the reſt.
2. The ſmaller or ſmall round Apricocke.
3. The white Apricocke, hath his leaves more folded together: it beareth but ſeldom and very few, more white, without any red when ripe.
4. The Maſculine hath a finer green leaf and thinner, and beareth very ſeldom any ſtore of fruit, which differeth in nothing from the firſt, but that it is a little more delicate.
5. The long Maſculine hath his fruit growing a little longer, and differeth in nothing elſe.
6. The Argier is a ſmaller fruit than any of the others, and yellow, but as ſweet and delicate as any of them, having a blackiſh ſtone within it, little bigger than a Lacure Cherry-ſtone; this with many other ſorts John Tradeſcante brought with him returning from the Argier voyage, whither he went voluntary with the fleete, that went againſt the Pyrates in the yeare 1620.

Rea, in 1702, has only the Algier, Maſculine, Long, White, Orange, and Great Roman.]

Miller has the following:

1. The Maſculine Apricot.
2. The Orange.
3. The Algier.
4. The Roman.
5. The Turkey.
6. The Breda.
7. The Bruſſels.

1. The Maſculine is the firſt ripe of all the Apricots; it is a ſmall roundiſh fruit of a red colour towards the ſun; as it ripens, the colour fades to a greeniſh yellow on the other ſide; it has a very quick high flavour. The tree is very apt to be covered with flowers, but as they come out early in the ſpring, they are frequently deſtroyed by the cold, unleſs the trees are covered to protect them.

2. The Orange is the next ripe; this fruit is much larger than the former, and as it ripens changes to a deep yellow colour. The fleſh being dry and not high flavoured, it is better for tarts and preſerving than for eating raw.

3. The Algier is the next in ſeaſon; this is of an oval ſhape, a little compreſſed on the ſides; it turns to a pale yellow, or ſtraw-colour, when ripe; the fleſh is high flavoured, and very full of juice.

4. The Roman is the next ripe; this is a larger fruit than the former, and not compreſſed ſo much on the ſides; the colour is deeper, and the fleſh is not ſo moiſt as the former.

5. The Turkey Apricot is yet larger than either of the former, and of a globular figure; the fruit turns to a deeper colour than the former; the fleſh is firmer, and drier than thoſe of the two preceding.

6. The Breda Apricot (as it is called from its being brought from thence into England) was originally brought from Africa; this is a large roundiſh fruit, changing to a deep yellow when ripe; the fleſh is ſoft, full of juice, and of a deep Orange colour within ſide; the ſtore is rounder and larger than any of the other ſorts: this is the beſt Apricot we have, and when ripened on a ſtandard, is preferable to all other kinds.

7. The Bruſſels is the lateſt ripe of all the Apricots, for when it is planted againſt a wall, it is generally the beginning of auguſt before it is ripe, unleſs when it

[a] Thunberg. [c] Linn. ſpec. [f] Villars. [g] Krocker. [b] Hort. kew.

is planted to a full ſouth aſpect; which is what ſhould not be practiſed, becauſe the fruit is never well taſted which grows in a warm expoſure. This fruit is of a middling ſize, rather inclining to an oval figure; red on the ſide next the ſun, with many dark ſpots, and of a greeniſh yellow on the other ſide; the fleſh is firm, and of a high flavour; the fruit often cracks before it is ripe. This is commonly preferred to the former ſort by moſt people, but when the other is planted as a ſtandard, the fruit is fuller of juice, and of a richer flavour than this.

[Duhamel enumerates ten varieties.

1. Abricot précoce, or hâtif muſqué. t. 1. Maſculine.
2. A. blanc, or A. pêche.—A variety of the foregoing.
3. A. commun. t. 2.
4. A. Angoumois. t. 3.
5. A. de Hollande, or Amande-Aveline, t. 4.
6. A. de Provence. t. 4 f. P.
7. A. de Portugal. t. 5.
8. A. violet.
9. A. Alberge.—The ſeeds of this will produce the ſame fruit, or with very little variation; and is the only one which will do ſo.
10. A de Nancy. t. 6.

The induſtry of modern gardeners is ſuch, and the love of novelty ſo great, that new varieties are continually adding to our collections of fruits. Thus among Apricots, the Maſculine is ſubdivided into the Early White and the Early Red. We have the *Temple* Apricot, ripe in the middle of auguſt. The *Moor-Park*, *Peach*, *Dunmore* or *Anſon*, a large fruit, flat-ſhaped, of a deep yellow colour, and very high flavoured, &c.

The Chineſe have a variety of double-bloſſomed Apricot-trees, which they plant on little mounts in their gardens, and have a beautiful effect in the ſpring. They have alſo dwarf trees, which are placed for ornament in their apartments, where they flower during the winter.

There is a great variety of fruiting Apricots in China: and from the wild tree, whoſe fruit has little pulp, but a large kernel, they extract a great quantity of oil, ſuperior to that produced from Walnuts. The barren mountains to the weſt of Pekin, are covered with theſe trees.

The Chineſe not only preſerve the fruit of the Apricot both wet and dry, but make lozenges from the clarified juice, which diſſolved in water, yield a cool refreſhing beverage[1].

The young ſhoots yield a fine golden cinnamon colour to wool.

It appears from Turner's herbal, which is our earlieſt botanical authority, that the Apricot was cultivated here in 1562[2]. But in the Remembrances for Maſter S. by Richard Hakluyt, 1582, it is affirmed that the Abricot was procured out of Italy by a French prieſt, one Wolfe, Gardiner to King Henry VIII.[3]

This fruit ſeems to have been known in Italy in the time of Dioſcorides under the name of *Præcocia*—Αρμενιακα, Ρωμαικη Περσικικια, which is only Præcocia in Greek characters. The modern Greeks have corrupted it to Βερικοκκια, whence the Tuſcan name *Bacocche*[4], and our Engliſh *Apricock*. It is not improbable that the fruit, when firſt introduced might be called *A Præcox*, from the Latin; and our illiterate people imagining the laſt ſyllable to be *cocks*, concluded the word to be of the plural number, and *a* not to be the article, but part of the word; and ſo pronounced it *Aprecocks*, and thence formed *Aprecock* and *Apricock*[5]. Bradley ſays, that coming from Epirus the fruits were called *Mala Epirotica*. Mortimer derives it from *apricus*. When the preſent orthography from the French *Abricot* was eſtabliſhed, I cannot preciſely ſay. I find *Apricot* ſo far back as Plat's Garden of Eden in 1660, but in no other old book. Mr. Evelyn, in his French Gardiner, 1658, and in his Kalendarium Hortenſe, follows the French orthography preciſely. Maſcall in 1575 has *Abricote* and *Abrycote*. Googe in 1577 has *Abricock* and *Abricottes*. All evidently approximating to the French. None of theſe are original works.

Gerarde, in 1597, writes *Aprecocke* or *Abrecocke*, both with and without the final *e*, and alſo *Aprecox*. Parkinſon in 1629 has *Apricockes*. And ſince that time, the prevailing orthography has been *Apricock*, till very lately. We find it ſo in the two Oxford catalogues of 1648 and 1658; in Plat's Garden of Eden, 1660, as well as *Apricot*; in Ray's Hiſtory, 1688; in Rea's Flora, 1702. Mr. Miller himſelf in 1743 followed this orthography. Profeſſor John Martyn in 1749 ſpeaks of it as being then commonly written ſo; and even in 1764, Juſtice in his Britiſh Gardener writes *Apricock*.

14. This tree differs very little from the preceding; in particular the leaves are very much alike, except that in this they are very long-pointed at the end. The flowers are as it were calycled by the bud, which conſiſts of imbricate teſtaceous ſcalelets, ciliate at the edge; but this is the caſe in our common ſort of Apricot. It grows only to the height of a man, and may perhaps only be a variety from climate and ſituation.

Native of Tranſalpine Dauria in the empire of Ruſſia, where the north ſide of the mountains in may, is covered with the purple flowers of Rhododendron dauricum; and the ſouth ſide, with the white and roſe-coloured flowers of this dwarf tree. The fruit is juiceleſs, acerb or auſterely acid, and eaſily parts in two; and contains a bitter kernel[6]. Pallas ſays that *P. Armeniaca* has a ſingle gland on the petiole, which this has not, and that the loweſt ſerrature on each ſide is often glandular.]

15. This ſhrub ſeldom riſes more than three or four feet high, and divides into many ſlender branches near the ground; theſe are covered with a reddiſh brown bark. Leaves long and narrow, whitiſh underneath and light green above. The flowers come out two or three together at each joint, the whole length of the branches, on long ſlender peduncles. Petals much narrower than thoſe of the common Cherry. Fruit red, acid. It flowers in may, and the fruit ripens in july. It was ſent to Mr. Miller from Paris, under the name of *Rogeuminier*, as it is called in Canada, where it is a native[7]. [He therefore cultivated it in 1756[8].

According to Linneus, it is a ſhrub of the ſame ſtature with *Amygdalus nana*; the root is creeping; the branches rod-like and purple; the leaves underneath glaucous or pale; the proper peduncles one-flowered by threes from the lateral buds[9].

16. The Common Cherry tree has aſh-coloured, ſhining, roundiſh branches. Leaves petioled, ovate or ovate-lanceolate, acuminate, unequally ſerrate, veined; the younger ones folded together flat and more or leſs pubeſcent underneath. Stipules toothed, glandular. Umbels leafleſs, few-flowered, nodding. Calyx reflex. Petals white. Drupe red, acid[10].

Leaves biglandular; leafing and flowering buds diſtinct, the former terminating, the latter from the ſide of the branches; ſtamens more than twenty-four or near thirty. It differs from the plum in having the ſtone nearly globular, with the kernel of the ſame ſhape[11].

Native of Aſia and Europe. It derives the Greek names Κερασος and Κερασια, the Latin *Ceraſus*, and the modern names *Cherry*, *Ceriſier*, &c. from a town in Pontus called Ceraſus, whence Lucullus is ſaid to have introduced it into Italy, after he had ſubdued Mithridates. This however muſt be underſtood of the cultivated Cherry; for the tree in its wild ſtate was in Europe antecedent to the time of Lucullus[12].

The Cherry loves a ſandy ſoil and an elevated ſituation. The gum that exſudes from it is equal to Gum Arabic. Haſſelquiſt relates, that more than one hundred men, during a ſiege, were kept alive for near two months, without any other ſuſtenance, than a little of

[1] Groſier. [2] Hort. kew.
[3] Voyages, 2. 161. edit. 1599. [4] Matthiolus, 247. ed. 1565.
[5] Martyn's note in Virg. Ecl. 2. v. 51.
[6] Pallas. [7] Mill. fig. [8] Hort. kew.
[9] Linn. mant. [10] Smith. [11] Scop. & Haller.
[12] Ray hiſt.

this

this gum taken ſometimes into the mouth, and ſuffered gradually to diſſolve. The wood is hard and tough, and uſed by the turner, and for making chairs, being ſtained to imitate mahogany. It is the original ſtock from which moſt of the cultivated ſorts are derived.

Ray mentions the common Wild Cherry with a red fruit; the leaſt wild Heart Cherry-tree, in Lancaſhire, Cheſhire and Weſtmoreland; and the wild northern Cherry-tree with ſmall late-ripe fruit, on the banks of the Tees near Bernard-caſtle in Durham.

The varieties of eatable Cherries enumerated by Parkinſon in 1629 are the following:

1. The Engliſh Cherry, red, of a middling ſize, and a pleaſant ſweet taſte, ſomewhat tart withall.
2. The Flanders Cherry, ſomewhat larger, and ſweeter, and not ſo ſour.
3. The Early Flanders, almoſt as ſoon ripe as the May Cherry, and of many falſe knaves ſold for it.
4. The May Cherry.
5. The Arch-duke's Cherry, one of the faireſt and beſt we have, red, a little more long than round, and ſomewhat pointed at the end.
6. The Ounce Cherry, or Amber: pale yelloviſh red; with a great broad leaf.
7. The great leafed: probably not different from the preceding.
8. The true Gaſcoign: late ripe, large, white ſpotted: a fit ſtock to graft May Cherries upon.
9. The Morello—(ſo called from the juice being like that of the *Morus* or Mulberry.)
10. The Hartlippe, ſo called from the place where the beſt of this kind are nurſed up, between Sittingbourn and Chatham: this is the biggeſt of our Engliſh kinds.
11. The ſmaller Laeure or Hart Cherry: blackiſh when full ripe, and ſmaller than the next.
12. The great Laeure or Hart Cherry; twice as great the former, and of a reddiſh black colour, firm and reaſonably ſweet. Some call the White (n. 8.) the White Hart Cherry.
13. The Luke Wardes: dark red.
14. The Corone: deep red. (Not our Corone.)
15. The Urinall: long and round, reddiſh.
16. The Agriott (from the French *aigre*): ſmall, deep red, late ripe: ſharp, pleaſant and wholeſome, both freſh and dried.
17. The Biguarre: pale red ſpotted with white.
18. The Morocco: big, long and round, firm, having a long dark purple ſtalk; juice blackiſh, red and pleaſant: perhaps not different from the Morello.
19. The Naples; thought to be the ſame.
20. The White Spaniſh: white with ſome redneſs, firm, late; ſtalk long and ſtone large.
21. Flanders cluſter.
22. Wild or bird's cluſter.
23. Soft-ſhelled: ſmall and red, with a tender ſtone.
24. John Tradeſcant's, commonly ſold for the Arch-duke's: large, deep-coloured and a little pointed.
25. Baccalaos or Newfoundland: ſmall and pale red.
26. Long cluſter: is *Prunus Padus*.
27. The Cullen (Cologn): dark red.
28. The great Hungarian Cherry of Zwarts, like the Morello, but larger, fairer, and bears more abundantly: deep red, very ſweet, and meaſuring four inches round.
29. The Cameleon or changeable Cherry, with fruit of many forms.
30. The great Roſe or double-bloſſomed Cherry.
31. The leſſer ditto.
32. The dwarf Cherry.
33. The great bearing Cherry of Maſter Millen: large and red; a great bearer.
34. The long finger Cherry: long and round.

Mr. Ray's catalogue in 1688, contains:

1. The May Cherry, ſo called from its being ripe in the month of may.
2. The Duke Cherry.
3. The Arch-duke Cherry.
4. The Flanders Cherry.
5. The Red Heart Cherry.
6. The Bleeding Heart.
7. The Naples.
8. The Carnation.
9. The Amber.
10. The Purple.
11. The Black Orleans.
12. The common Black Cherry.
13. Luke Ward's Cherry.
14. The Cluſter Cherry.
15. The Dwarf Cherry.
16. The Morello Cherry.

Rea in 1702 has the following—

1. The May.
2. The early Flanders.
3. The later Flanders.
4. The Flanders Cluſter.
5. The Great bearing or preſerving.
6. The Morello.
7. The Arch-duke.
8. The Carnation.
9. The Lukeward.
10. The Black Heart.
11. The Black Cherry of Orleance.
12. The Black Spaniſh.
13. The Bleeding Heart.
14. The Prince Royal.
15. The Portugal.
16. The King's.
17. Corone.
18. Biguar.
19. White Spaniſh.
20. Amber.
21. Red Heart.
22. Hungarian.
23. Ciliegi Birrieloni.
24. Dwarf.]

Mr. Miller's liſt contains—

1. The common or Kentiſh Cherry, from which he ſays it is ſuppoſed, moſt of the varieties cultivated in the Engliſh gardens have been raiſed; though he is very doubtful of it; the differences in the ſize and ſhape of their leaves, and in the ſhoots of the trees being very great.
2. The early May Cherry, which is the firſt ripe, and therefore a place may be given it, where there is room.
3. The May Duke. This ripens next: it is a larger fruit, and more valuable.
4. The Arch-duke comes after the May Duke, and if permitted to hang till it is ripe, is an excellent Cherry. It ſhould not be gathered before midſummer, and may hang a fortnight longer, even near London, where it ripens a fortnight ſooner than in places forty miles diſtant. Againſt a north wall, this fruit may be continued till auguſt.
5. The Flemiſh.
6. The Red Heart.
7. The White Heart.
8. The Black Heart.
9. The Amber Heart.
10. The Ox Heart.
11. The Lukeward. A good bearer, and a very good fruit, of a dark colour, and will do well in ſtandards.
12. The Carnation. Valuable for coming late: very firm and fleſhy, but not the beſt bearer: it will ripen very well on eſpaliers.
13. The Hertfordſhire Heart: firm and well flavoured; does not ripen earlier than the end of july or the beginning of auguſt.
14. The Morello: generally planted againſt a north wall, and uſed for preſerving; but in a better aſpect, and ſuffered to hang till ripe, is a very good fruit for the table. On a S. W. wall the fruit will ripen perfectly by the middle of auguſt.
15. The Bleeding Heart.
16. The large Spaniſh Cherry, nearly allied to the Duke, of which it ſeems to be only a variety, and ripens ſoon after it.
17. The yellow Spaniſh Cherry; of an oval ſhape and an amber colour: it ripens late, is ſweet but not of a rich flavour, and is but a middling bearer.
18. The double-flowered, propagated ſolely for ornament.

[Other varieties are continually adding to theſe, differing little from the preceding, as—

19. Harriſon's Duke Cherry.
20. Crown Heart Cherry.
21. Turkey, &c.

It is commonly aſſerted that Cherries were introduced into England in the time of Henry VIII. Mr. Gough, in his topography, ſays it is ſuppoſed that they were brought from Flanders into Kent by Richard Haines, fruiterer to that monarch. But we certainly had them ſooner. We have no proof indeed that England was indebted to the Romans for Cherries and other fruits of warmer climates; or that they were here at the time of the Norman conqueſt, or during ſome centuries after it. A diligent and ingenious antiquary has however diſcovered written evidence which clearly ſhows, that before the middle of the 15th century, the hawkers in London were wont to expoſe Cherries for ſale in the ſame manner as is now done early in the ſeaſon. Lydgate, in the following lines from his poem called *Lickpenny*, cited by Mr. Warton, in the Hiſtory of Engliſh Poets, vol. 2. p. 367. ſays

> "Hot peſcode own (one) began to cry,
> "Straberys rype, and cherries in the ryſe."

That is, remarks Mr. Warton, he cried hot peas, ripe ſtrawberries, and cherries on a *bough* or twig: *rice* or *ris*, being properly a long branch, and the word is ſtill ſo uſed in the weſt of England.

The tradition therefore reſpecting Haines's having originally planted Cherry-trees at Teynham, may either mean that he was the firſt perſon who reared a Cherry orchard, or that he firſt introduced ſome particular Cherry, perhaps that which we call the Flemiſh Cherry[a], if we had it not earlier.

It is indeed extremely improbable, conſidering the magnificence of the times, and our intimate connection with France and Flanders, from the conqueſt to the deſtructive contentions between the houſes of York and Lancaſter, that we ſhould not have imported ſuch fruits as would bear our climate from thoſe countries, unleſs they had been left us by the Romans.

The above paſſage from Lydgate carries the written evidence for the cultivation of Strawberries higher than that which has been given from Stow and Shakſpeare. What is meant by *hot peas?* Surely not hot gray peas, which were commonly cried about London during winter even in this century; for they were in a dry ſtate, and the poet would not have called them *peſcodes*, nor would he have joined them with ſtrawberries and cherries. He probably intended what we now call *Hotſpur* peas.]

17. The Black Cherry is ſuppoſed to be a native of England. It grows to be a large tree, fit for timber, and is frequently found growing as ſuch in the woods. From this the only varieties which I have ever known raiſed by ſeeds, are the Black Coroun, and the ſmall Wild Cherry; of which there are two or three varieties, differing in the ſize and colour of the fruit.

The wild Cherries are proper to plant in parks, becauſe they grow to a large ſize and make beautiful trees. In ſpring, when they are in flower, they are very ornamental; the fruit is good food for birds; and the wood is very uſeful for turners. Theſe trees will thrive in poor land better than moſt other ſorts. The French often plant them for avenues to their houſes, on poor land; they alſo cultivate them in their woods, to cut for hoops.

The ſtones are generally ſown for raiſing ſtocks, to graft or bud other Cherries upon, being of quicker growth and of longer duration.

[Dr. Withering affirms that this tree grows beſt in a rich ſoil and on the ſides of hills, unmixed with other trees; that it bears cropping, and ſuffers the graſs to grow under it.

The garden Cherry grows only about fifteen or twenty feet high, whereas this attains forty or fifty feet in height, with a more erect and lofty head.

Linneus deſcribes the leaves as having one or two glands at the top of the petiole; the umbel ſeſſile and ſubtriflorous, the flowers petioled, and the involucre four-leaved: he affirms that the flowers in this are produced from the branches of the year before; but thoſe of the preceding ſpecies from the branches of the ſame year.

But Linneus does not ſeem to have intended our wild Cherry by his *Prunus avium*, for he ſays the fruit is red; and he refers to the Heart Cherry of Ray as one of the varieties of it. John Bauhin however has four varieties of the wild Cherry, the ſmall red and black, and the more fleſhy of both colours; the laſt probably improved by culture.

The common Black Cherry is much cultivated in the Chiltern part of Buckinghamſhire, and makes a beautiful appearance in the ſpring, when the trees are in bloſſom at the ſame time that the Beech is leafing. In Suffolk it abounds about Polſtead and is commonly called the Polſtead Cherry. In that county the wild Cherries are called *Merries*, from the French *Meriſe*. The *Corone* or *Coroun* Cherry, which is the higheſt improvement of this, is common in Hertfordſhire and about Bergh-Apton in Norfolk.

After all, I can ſcarcely think that the *Prunus avium* is ſpecifically diſtinct from the *Prunus Ceraſus*.

The former grows to a conſiderable ſize: Mr. Evelyn mentions one that held above eighty-five feet in height; it is then fit to make chairs and ſtools with, cabinets, tables, eſpecially the redder ſort, which will poliſh well; alſo pipes and muſical inſtruments. Willdenow ſeparates not only the *Prunus avium* but alſo the *Ceraſus pumila*, under the name of *Pr. Chamæceraſus*, that being the title which Cluſius has given it. Pallas's *Pr. fruticoſa* is this, or a variety of it, differing only in the ſize of the leaves, flowers and fruit. Jacquin has figured the Auſtrian tree in *ic. rar.* 1. 90. and deſcribed it in *Collect.* 1. 133. Pallas ſays it is a ſhrub often ſcarcely two feet, but ſometimes four feet in height; that however cultivated it never becomes a tree; and that the leaves are of a hardiſh ſubſtance; in ſhort, that it differs from the common Cherry, as the dwarf Almond does from the common ſort.

18. This has the appearance of *P. Ceraſus*, but the branchlets have whitiſh dots ſcattered over them, as in *P. virginiana*. It has the leaves of *P. Ceraſus* lanceolate-ovate, ſerrulate, even, with two glands at the baſe often red. Umbels ſeſſile. Flowers ſmaller than thoſe of *P. Ceraſus*[e]. Willdenow has deſcribed it under the name of *P. lanceolata*.

Native of North America. Introduced in 1773, by Meſſrs. Kennedy and Lee. It flowers in may[e].

19. Leaves ovate, much acuminate, unequally and ſharply ſerrate, ſmooth on both ſides. Umbels three or four-flowered[f].

Native of Canada. Introduced in 1773, by Meſſrs. Kennedy and Lee. It flowers in april and may[b].

20. The common Plum tree is of a middling ſize, growing to the height of fifteen or twenty feet, branching into a moderately-ſpreading head. Leaves on ſhort petioles, which have one or two glands towards the end; they are ſlightly ſerrate and ſmooth; when young they are convoluted or coiled, and pubeſcent underneath. Peduncles ſhort, commonly ſolitary. Calyx erect. Petals white, obovate[c]. The drupe is an oblong ſpheroid, ſwelling a little more on one ſide and there grooved, of a blue colour, with a bloom on it: pulp yellowiſh, tender. Shell bony, ovate, pointed at both ends, compreſſed, obſcurely excavated; having two longitudinal ſutures, one more gibbous, ſimple, acute, the other ſtraighter, dividing, narrow, crenulate[d].

It loves a lofty expoſure, and is favourable to paſturage. The bark dyes yellow. The cultivated garden Plums are all derived from this ſpecies.

It is a native of Aſia and Europe; perhaps ſcarcely of Britain, though it is not uncommon in our hedges, but is probably originated from the ſeeds of ſome of

[a] Gentleman's magazine for 1786. 1. 389. ſign. W. & D.

[b] Hort. kew. [c] Smith. [d] Gartner. [e] Willdenow. [f] Linn. ſuppl.

the cultivated ſpecies: which according to Pliny came from Syria into Greece, and thence into Italy.

Plums, when ſufficiently ripe, and taken in a moderate quantity, are not unwholeſome: but in an immature ſtate they are more liable to produce colicky pains, diarrhœa or cholera than any other fruit of this claſs. Conſidered medicinally, they are emollient, cooling and laxative, eſpecially the French Prunes, imported in their dried ſtate from Marſeilles; and though the laxative power is diminiſhed by drying, yet as they contain much of their acid, they have more effect in this way than the other dried fruits. They are peculiarly uſeful in coſtive habits, and are frequently ordered in decoction with Senna and other purgatives. It is the pulp of this fruit which is directed in the Electuarium e Senna, or Lenitive Electuary*.

The varieties of garden and orchard Plums are very numerous, differing in the form, taſte, colour and ſubſtance of the fruit. Parkinſon's catalogue contains ſixty ſorts, fit, as he ſays, for an orchard, to be ſtored with good fruit: all which ſorts, adds he, are to be had of my very good friend Maſter John Tradeſcante, who hath wonderfully laboured to obtain all the rareſt fruits he can hear of in any place of Chriſtendome, Turky, yea or the whole world.

1. Amber Primordian; an indifferent fair Plum, early ripe, pale yellow, taſte wateriſh.
2. Red Primordian; of a reaſonable ſize, long and round, reddiſh on the outſide, of a more dry taſte, ripe with the firſt ſorts in the beginning of auguſt.
3. Blue Primordian; ſmall, almoſt like the Damaſcene, ſubject to drop before it is ripe.
4. White Date; no very good Plum.
5. Red Date; large, long, red, pointed, late ripe, little better than the white.
6. Black Muſſell; reaſonably dry and well taſted.
7. Red Muſſell; ſomewhat flat as well as round, of a good taſte, ripe about the middle of auguſt.
8. White Muſſell; like the red, but ſomewhat ſmaller, and not ſo well taſted; colour whitiſh green.
9. Imperiall; large, long, reddiſh, wateriſh and late.
10. Gaunt; large, round, reddiſh, wateriſh, late.
11. Red Peſcod; reaſonably good.
12. White Peſcod; the ſame, but ſomewhat wateriſh.
13. Green Peſcod; reaſonably big and long-pointed; ripe in the beginning of ſeptember.
14. Orenge; yellowiſh, moiſt, and ſweetiſh.
15. Morocco; like a Damſon, well taſted and ſomewhat dry in eating.
16. Dine; late ripe, great and whitiſh, ſpeckled all over.
17. Turkie; large, long, blackiſh, ſomewhat flat like the Muſſell Plum; well-reliſhed and dry.
18. Nutmeg; no bigger than a Damſon, greeniſh yellow, ripe about Bartholomew-tide; a good Plum.
19. Perdigon; a dainty good Plum, early, blackiſh.—Hakluyt, in 1582, ſays, of later time, the plum called the *Perdigwena* was procured out of Italy, with two kinds more, by the Lord Cromwell, after his travell.
20. Verdoch; a great fine green ſhining Plum, fit to preſerve.
21. Jenua (Genoa); the ſame with the White Date, n. 4.
22. Barberry (Barbary); great, early, black, well taſted.
23. Pruneola; ſmall, white, of a fine tart taſte: brought over in ſmall round boxes, and ſold at the comfit-makers, cut in twaine, the ſtone caſt away, at a very deere rate.
24. Shepway Bulleis; dark blueiſh brown, of a ſharp taſte, larger than the common, but not ſo good.
25. White and Black Bulleis; ſmall and round, leſſer than Damſons, ſharper in taſte and later ripe.
26. Fluſhing Bulleis; thick cluſtring like grapes.—The three laſt belong to the next ſpecies or *P. inſtitia*.
27. Winter Creke; lateſt ripe of all the ſorts: plentifully about Biſhop's Hatfield.
28. White Peare Plum; early, pale yelloviſh green.
29. Late White Peare Plum; larger and longer, greeniſh white, not ripe till near the end of ſeptember: both wateriſh Plums.
30. Black Peare Plum; of a very good reliſh, more firm and dry than the others.
31. Red Peare Plum; the worſt of the three.
32. White Wheate Plum; wateriſh and fulſome.
33. Red Wheate Plum; like the other for taſte.
34. Bowle; flat and round, yet flatter on one ſide, whence the name; a very good reliſhed black Plum.
35. Friar; well-taſted, coming clean from the ſtone, black with ſome whitiſh ſpots.
36. Catalonia.
37. Don Alteza. Both very good Plums.
38. Muſcadine, Queen Mother or Cherry Plum; fair, red, of a reaſonable bigneſs, and ripe about Bartholomew-tide.
39. Chriſtian or Nutmeg Plum; good for ſix weeks after it is gathered.
40. Cherry Plum; ſee n. 38.
41. Amber; round, yellow as wax.
42. Apricocke Plum; good when in perfection, but apt to crack.
43. Eaſon; ſmall, red, well-taſted.
44. Violet; ſmall, long, blackiſh blue, ripe about Bartholomew-tide, a very good dry eating fruit.
45. Grape Plum; the ſame with n. 26.
46. Dennie or Cheſton; the ſame with n. 35.
47. Damaſke Violet; the ſame with n. 38.
48. Blacke Damaſcene; a very good dry Plum, dark blue when ripe.
49. White Damſon; not ſo well reliſhed.
50. Great Damſon or Damaſke; greater and ſweeter.
51. Blue Damſon; well known, good.
52. Coferer's; flat, like a Peare Plum, early ripe and black, of a very good reliſh.
53. Margate; the worſt of an hundred.
54. Green Oyſterly; reaſonably great, whitiſh green, moiſt and ſweet, reaſonably good.
55. Red Mirobalane; red, earlier ripe, and better than the next.
56. White Mirobalane; whitiſh yellow, and very pleaſant, eſpecially if not over-ripe: both theſe had need to be plaſhed againſt a wall, or elſe they will hardly bear ripe fruit.
57. Olive; very like a green Olive in colour and bigneſs; late ripe, but the beſt of the green Plums.
58. White Diapred Plum of Malta, ſcarce known to any in our land but John Tradeſcant: very good and ſtriped all over like Diaper.
59. Black Diapred Plum; like the Damaſcene, black with ſpots as ſmall as pin's points, of a very good reliſh.
60. Peake; long, whitiſh and very good.

Ray alſo gives a liſt of the beſt ſorts of Plums cultivated in his time.

1. Red, blue and amber Primordian.
2. Violet, red, blue and amber.
3. Matchleſs.
4. Black and green Damaſcene.
5. Morocco.
6. Barbary.
7. Myrobalane, white and red.
8. Apricock.
9. Cinnamon.
10. Great Mogul and Tawny.
11. White, red and black Pear Plum.
12. Green Oſterley.
13. Muſcle, black, red, white.
14. Catalonia.
15. White and black Prunella.
16. Bonum magnum.
17. Wheaten; ſo called becauſe it is ripe about wheat harveſt.
18. Cluſter.
19. Queen Mother.
20. Marble.
21. Imperial.
22. Peach Plum.
23. Peaſcod Plum of ſeveral colours.
24. Date-plum, white, yellow and red.
25. Nutmeg Plum.
26. Turkey.
27. Prince; laſt ripe.
28. Lammas.

* Woodville.

In Rea's catalogue there are no additions of any conſequence. Bradley has ſixty-five, from the French. Monſ. Duhamel deſcribes forty-eight varieties; and Mayer makes them ſtill more numerous.]

Mr. Miller has given thirty varieties of this fruit which are cultivated in the Engliſh gardens.

1. PRUNUS (*Jaunebâtive, Duham. n.* 1. *t.* 1.) fructu parvo præcoci. *The white Primordian.* This is a ſmall, longiſh, white Plum, of a clear yellow colour, covered over with a white flew, which eaſily wipes off. It is a pretty good bearer, and, for its coming very early, one tree may have a place in a large garden of fruit, but it is meally, and has little flavour. This ripens the middle or latter end of july.

2. PRUNUS (*Damas Noir*) fructu magno craſſo ſubacido. Tourn. *The early Damaſk, commonly called the Morocco Plum.* This is a middle ſized Plum, of a round ſhape, divided with a furrow in the middle (like Peaches.) The outſide is of a dark black colour, covered with a light violet bloom; the fleſh is yellow, and parts from the ſtone. It ripens the end of july, and is eſteemed for its goodneſs.

3. PRUNUS (*Small Damas*) fructu parvo dulci atro-cæruleo. Tourn. *The little black Damaſk Plum.* This is a ſmall black Plum covered with a light violet bloom. The juice is richly ſugared; the fleſh parts from the ſtone, and it is a good bearer. Ripe the beginning of auguſt.

4. PRUNUS (*Gros Damas, Duham. n.* 4.) fructu magno dulci atro-cæruleo. Tourn. *Gros Damas Violet de Tours, i. e. great Damaſk Violet of Tours.* This is a pretty large Plum, inclining to an oval ſhape. The outſide is of a dark blue covered with a violet bloom; the juice is richly ſugared; the fleſh is yellow, and parts from the ſtone. Ripe in auguſt.

5. PRUNUS (*Orleans*) fructu rotundo atro rubente. *The Orleans Plum.* The fruit is ſo well known to almoſt every perſon, that it is needleſs to deſcribe it; it is a very plentiful bearer, which has occaſioned its being ſo generally planted by thoſe perſons who ſupply the markets with fruit, but it is an indifferent Plum. It ripens in auguſt.

6. PRUNUS (*Fotheringham*) fructu oblongo atro-rubente. *The Fotheringham Plum.* This fruit is ſomewhat long, deeply furrowed in the middle. The fleſh is firm, and parts from the ſtone; the juice is very rich. This ripens in auguſt.

7. PRUNUS (*Perdigron*) fructu nigro, carne durâ. Tourn. *The black Perdigron Plum.* This is a middle-ſized Plum of an oval ſhape. The outſide is of a very dark colour, covered over with a violet bloom; the fleſh is firm, and full of an excellent rich juice. This is greatly eſteemed by the curious. Ripe in auguſt.

8. PRUNUS (*Perdrigon violet, Duham. n.* 21. *t.* 9.) fructu magno è violaceo rubente ſuaviſſimo ſaccharato. Tourn. *The Violet or blue Perdigron Plum.* This is a large fruit, rather round than long, of a bluiſh red colour on the outſide. The fleſh is of a yellowiſh colour, pretty firm, and cloſely adheres to the ſtone; the juice is of an exquiſite rich flavour. This ripens in auguſt.

9. PRUNUS (*Perdrigon blanc, Duham. n.* 20. *t.* 8.) fructu ovato ex albo flaveſcente. *The white Perdigron Plum.* This is a middling Plum, of an oblong figure. The outſide is yellow, covered with a white bloom; the fleſh is firm, and well taſted. It is a very good fruit to eat raw, or for ſweetmeats, having an agreeable ſweetneſs mixed with an acidity. It ripens the end of auguſt.

10. PRUNUS (*Impériale, Duh. n.* 32. *t.* 15.) fructu ovato magno rubente. Tourn. *The red Imperial Plum,* ſometimes called *the red Bonum Magnum.* This is a large oval-ſhaped fruit, of a deep red colour, covered with a fine bloom. The fleſh is very dry, and very indifferent to be eaten raw, but is excellent for making ſweetmeats; this is a great bearer. Ripe in ſeptember.

11. PRUNUS (*Impériale blanche, Duh. n.* 35.) fructu ovato magno flaveſcente. Tourn. *White imperial Bonum Magnum, white Holland, Mogul* or *Egg Plum.* This is a large oval-ſhaped fruit, of a yellowiſh colour, powdered over with a white bloom. The fleſh is firm, and adheres cloſely to the ſtone; the juice is of an acid taſte, which renders it unpleaſant to be eaten raw, but it is very good for baking or ſweetmeats. It is a great bearer, and is ripe the middle of ſeptember.

12. PRUNUS (*Cheſton*) fructu ovato cæruleo. *The Cheſton Plum.* This is a middle-ſized fruit of an oval figure. The outſide is of a dark blue, powdered over with a violet bloom; the juice is rich, and it is a great bearer. Ripe the middle of ſeptember.

13. PRUNUS (*Apricotée, Duh. n.* 28. *t.* 13.) fructu maximo rotundo flavo & dulci. Tourn. *Prune d'Abricot, i. e. the Apricot Plum.* This is a large round fruit of a yellow colour on the outſide, powdered over with a white bloom. The fleſh is firm and dry, of a ſweet taſte, and comes clean from the ſtone. This ripens the end of ſeptember.

14. PRUNUS (*Maître Claud*) fructu ſubrotundo, ex rubro & flavo mixto. *The Maître Claud.* Although this name is applied to this fruit, yet it is not what the French ſo call. This is a middle-ſized fruit, rather round than long, of a fine mixed colour between red and yellow. The fleſh is firm, parts from the ſtone, and has a delicate flavour. Ripe the end of ſeptember.

15. PRUNUS (*Diaprée*) fructu rubente dulciſſimo. Tourn. *Rochecorbon,* or *Diaprée rouge, Duh. n.* 37. *t.* 20. *f.* 12. This is a large round fruit, of a reddiſh colour, powdered over with a violet bloom; the fleſh adheres cloſely to the ſtone, and is of a very high flavour. Ripe the end of auguſt.

16. PRUNUS fructu rotundo flaveſcente. *La petite Reine Claude, Duh. n.* 26. This is a ſmall round fruit, of a whitiſh yellowiſh colour, powdered over with a pearl-coloured bloom; the fleſh is firm and thick, quits the ſtone, and its juice is richly ſugared. Ripe the end of auguſt.

17. PRUNUS fructu rotundo nigro purpureo majori dulci. Tourn. *Myrobalan Plum, Duh. n.* 46. *t.* 20. *f.* 15. This is a middleſized fruit, of a round ſhape; the outſide is a dark purple, powdered over with a violet bloom; the juice is very ſweet. It is ripe the end of auguſt.

18. PRUNUS fructu rotundo è viridi flaveſcente, carne duro ſuaviſſimo. *La groſſe Reine Claude,* or *Dauphine, Duh.* 25. *t.* 11. At Tours it is called Abricot vert; at Rouen, verte bonne; and in other places, Damas vert, or Tromp-valet. This is one of the beſt Plums in England; it is of a middle ſize, round, and of a yellowiſh green colour on the outſide; the fleſh is firm, of a deep green colour, and parts from the ſtone; the juice has an exceeding rich flavour, and it is a great bearer. Ripe the middle of ſeptember. This Plum is confounded by moſt people in England, by the name of Green Gage; but this is the ſort which ſhould be choſen, although there are three or four different ſorts of Plums generally ſold for it, one of which is ſmall, round, and dry; this quits the ſtone, and is later ripe, ſo not worth preſerving.

19. PRUNUS fructu amygdalino. Tourn. *Regnon de Coq, i. e. Cock's Teſticles.* This is an oblong fruit, deeply furrowed in the middle, ſo as to reſemble the teſticles; it is of a whitiſh colour on the outſide, ſtreaked with red; the fleſh of it adheres firmly to the ſtone, and it is late ripe.

20. PRUNUS fructu rotundo flavo dulciſſimo. *Drap d'Or, i. e. the Cloth of Gold Plum, Duham. n.* 30. This is a middle-ſized fruit, of a bright yellow colour, ſpotted or ſtreaked with red on the outſide; the fleſh is yellow, and full of an excellent juice. It is a plentiful bearer, and ripens about the middle of ſeptember.

21. PRUNUS fructu cerei coloris. Tourn. *Sainte Catharine, Duham. n.* 43. *t.* 19. This is a large oval-ſhaped fruit, ſomewhat flat; the outſide is of an amber colour, powdered over with a whitiſh bloom, but the fleſh is of a bright yellow colour, is dry and firm, adheres cloſely to the ſtone, and has a very agreeable ſweet taſte. This ripens at the end of ſeptember, and is very ſubject to dry upon the tree, when the

autumn

autumn proves warm and dry. This makes fine ſweetmeats, and is a plentiful bearer.

22. PRUNUS fructu ovato rubente dulci. *The Royal Plum. Duham. n.* 24. *t.* 10. This is a large fruit of an oval ſhape, drawing to a point next the ſtalk; the outſide is of a light red colour, powdered over with a whitiſh bloom; the fleſh adheres to the ſtone, and has a fine ſugary juice. This ripens the middle of ſeptember.

23. PRUNUS fructu parvo ex viridi flaveſcente. Tourn. *La Mirabelle. Duham. n.* 29. *t.* 14. This is a ſmall round fruit, of a greeniſh yellow on the outſide; the fleſh parts from the ſtone, is of a bright yellow colour, and has a fine ſugary juice. This is a great bearer, ripens the end of auguſt, and is excellent for ſweetmeats.

24. PRUNUS Brigonienſis, fructu ſuaviſſimo. Tourn. *Prune de Brignole, i. e. the Brignole Plum.* This is a large oval-ſhaped fruit, of a yelloviſh colour, mixed with red on the outſide; the fleſh is of a bright yellow colour, is dry, and of an excellent rich flavour. This ripens the middle of ſeptember, and is eſteemed the beſt Plum for ſweetmeats yet known.

25. PRUNUS fructu magno è violaceo rubente ſerotino. Tourn. *Imperatrice, i. e. the Empreſs. Duham. n.* 39. *t.* 18. This is a large round fruit, of a violet red colour, very much powdered with a whitiſh bloom; the fleſh is yellow, cleaves to the ſtone, and is of an agreeable flavour. This ripens about the beginning of october.

26. PRUNUS fructu ovato maximo flavo. Tourn. *Prune de Monſieur, i. e. Monſieur's Plum. Duham. n.* 15. *t.* 7. This is ſometimes called the Wentworth Plum. It is a large oval-ſhaped fruit, of a yellow colour both within and without, very much reſembling the Bonum Magnum, but the fleſh of this parts from the ſtone, which the other doth not. This ripens towards the latter end of ſeptember, and is very good to preſerve, but the juice is too ſharp to be eaten raw. It is a great bearer.

27. PRUNUS fructu majori rotundo rubro. Tourn. *Prune Cerizette, i. e. the Cherry Plum.* This fruit is commonly about the ſize of the Ox-heart Cherry, is round, and of a red colour; the ſtalk is long like that of a Cherry, which this fruit ſo much reſembles, as not to be diſtinguiſhed therefrom at ſome diſtance. The bloſſoms of this tree come out very early in the ſpring, and being tender, are very often deſtroyed by cold, but it affords a very agreeable proſpect in the ſpring; for theſe trees are generally covered with flowers, which open about the ſame time as the Almonds; ſo that when they are intermixed therewith, they make a beautiful appearance before many other ſorts put out; but by this bloſſoming ſo early, there are few years that they have much fruit.

28. PRUNUS fructu albo oblongiuſculo acido. Tourn. *The white Pear Plum.* This is a good fruit for preſerving, but is very unpleaſant if eaten raw; it is very late ripe, and ſeldom planted in gardens, unleſs for ſtocks to bud ſome tender ſorts of Peaches upon, for which purpoſe it is eſteemed the beſt amongſt all the ſorts of Plums.

29. PRUNUM Mytellinum. Park. *The Muſcle Plum.* This is an oblong flat Plum, of a dark red colour; the ſtone is large, and the fleſh but very thin and not well taſted, ſo that its chief uſe is for ſtocks, as the former.

30. PRUNUS fructu parvo violaceo. *The St. Julian Plum.* This is a ſmall fruit, of a dark violet colour, powdered over with a mealy bloom; the fleſh adheres cloſely to the ſtone, and in a fine autumn will dry upon the tree. The chief uſe of this Plum is for ſtocks, to bud the more generous kinds of Plums and Peaches upon; as alſo for the Bruxelles Apricot, which will not thrive ſo well upon any other ſtock.

[Mr. Miller makes no mention of—

31. The Green Gage, unleſs he intends it by n. 18. It is the fineſt eating Plum we have, eſpecially when it is tinged with purple, is ripe in auguſt and ſeptember, and ripens very well on ſtandards or eſpaliers.

32. Blue Gage; ripe in ſeptember. A middle ſized, roundiſh, blueiſh Plum, of a rich flavour.

33. Wentworth; large, oval, yelloviſh, acid and parting from the ſtone, uſed chiefly for tarts and ſweetmeats, like n. 10 and 11.

34. Damaſcene, vulgarly Damſon; ſmall, roundiſh, dark blue, a great bearer; in orchards for the kitchen: ripe in ſeptember.

Ornamental varieties are the Double-bloſſomed; the Gold-ſtriped; the Silver-ſtriped; and the ſtoneleſs Plum.

21. The Bullace tree grows twelve or fifteen feet high or more. The branches are generally thorny. Leaves on ſhort petioles, ovate attenuated at the baſe, ſerrate, villoſe underneath. Calyx almoſt upright. Petals white, obovate. Drupe roundiſh[f].

Linnæus remarks, that the ſtipules are narrow, fringed, ſharp, cloven at the baſe; or down to the baſe, according to Withering; who alſo obſerves, that the outer ſkin of the calyx may be pulled off, adhering to the peduncle, and appearing like an outer cup.

The fruit is acid, but ſo tempered by ſweetneſs and roughneſs as not to be unpleaſant, eſpecially after it is mellowed by froſt. A conſerve is prepared by mixing the pulp with thrice its weight of ſugar. The bark of the roots and branches is conſiderably ſtyptic. An infuſion of the flowers, ſweetened with ſugar, is a mild purgative, not improper for children[g].

Native of Germany, Switzerland, France and England, in hedges; flowering in april.

It varies with black, and white, or rather wax-coloured fruit; and alſo, as Mr. Dale ſays, with a red, bitter, unpleaſant fruit, in the hedges of Eſſex and Suffolk.

22. Root creeping. Stem ſhrubby, crooked, ſix or eight feet high, covered with a dark-coloured bark. Branches many, irregularly divaricating, ending in a thorn. Leaves on ſhort petioles, obovate-lanceolate, minutely ſerrate; the ſerratures terminated by an excretory duct, the terminating one blunter and ſhorter. Stipules linear, ſerrate-toothed, diſcoloured at the points. Flowers large, white, ſolitary on ſhort peduncles, coming out before the leaf in march or april. Calyx ſpreading. Filaments from twenty to thirty, with orange-coloured anthers. Dr. Stokes remarks, that there are ſometimes two ſtyles. Drupe roundiſh, black with a blue exudation or bloom[h].—Native of Europe in hedges and coppices.

The Black-thorn is not ſo well adapted to hedges as the White-thorn, becauſe it ſpreads its roots wide, and encroaches upon the paſturage; but it is excellent for dead fences, and to lay in covered drains. The wood is hard and tough, and is formed into teeth for rakes, and into walking ſticks. From ſome effects, ſays Dr. Withering, which I have repeatedly obſerved to follow a wound from the thorns, I have reaſon to believe there is ſomething poiſonous in them, particularly in autumn. The tender leaves dried are ſometimes uſed as a ſubſtitute for tea, and is the beſt ſubſtitute that has yet been tried. The bark powdered, in doſes of two drams, will cure ſome agues. Letters marked upon linnen or woollen, with the juice of the fruit, will not waſh out. Bruiſed and put into wine, it communicates a beautiful red colour, and a pleaſant ſubacid roughneſs[i]. The juice is ſaid to enter largely into the manufacture of Red Port Wine; and I have known the leaves gathered in conſiderable quantities to mix with the Chineſe Tea.

The Sloe is ſo harſhly ſharp and auſtere as not to be eatable till it is mellowed by froſt: its juice is extremely viſcid, ſo that the fruit requires the addition of a little water, in order to admit of expreſſion. The juice obtained from the unripe fruit, and inſpiſſated to dryneſs by a gentle heat, is the German Acacia, and has been uſually ſold in the ſhops for the Egyptian Acacia, from which it differs in being harder, heavier, darker-coloured, of a ſharper taſte, and more

[f] Smith. [g] Withering.
[h] Woodville, Smith, Linn. [i] Withering.

eſpecially

eſpecially in giving out its aſtringency to rectified ſpirit.

Sloes have been employed for their ſtyptic powers from the time of Dioſcorides. They have been recommended in diarrhœas and hæmorrhages, and as gargles in ſwellings of the tonſils and uvula. Dr. Cullen conſiders them as the moſt powerful of the acerb fruits, and as agreeable and uſeful aſtringents; but he thinks the conſerve, as directed by the College, contains a larger proportion of ſugar than is neceſſary.

The flowers, with their calyxes, are moderately purgative, the doſe is an ounce infuſed in water, or rather whey[x].

23. Branches and branchlets round, dotted. Leaves alternate, petioled, acuminate, veined, rugged on both ſides, pale underneath, ſpreading, two inches long. Petiole very ſhort, grooved. Flowers on the extreme branchlets. Drupe the ſize of Pepper, globular or ovate with a permanent ſtyle, blue, ſmooth. Nut or ſtone three-ſided, hard, ovate, ſharpiſh. Kernel whitiſh. Fruit eatable. The upper ſurface of the leaf is ſo hard that it is uſed in poliſhing in Japan, where it is a native.

24. Stem ſhrubby, wholly ſmooth. Branches and branchlets alternate, round, aſh-coloured, wrinkled, erect. Leaves alternate, petioled, veined, ſpreading, an inch long. Stipules in pairs, leafy above, briſtle-ſhaped, the length of the petiole. Peduncle below the branchlets, one-flowered, ſhort. Drupe the ſize of a pea.—Native of Japan.

25. Stem ſhrubby, ſmooth in all parts. Branches round, ſtriated, aſh-coloured, with the branchlets gradually filiform. Leaves ſcattered, petioled, oblong, ſpreading, netted-veined underneath. Petioles ſeveral times ſhorter than the leaves. Flowers ſcattered, ſolitary. Peduncles pendulous, the length of the leaves. Calyx ſubcampanulate. Corolla fleſh-coloured.

It differs from *P. pumila* in having the leaves acute very finely ſerrate and of the ſame colour on both ſides; not obtuſe almoſt entire and glaucous:—from *P. inciſa* by its ſmooth ſerrate leaves with the ſerratures glandular.—Native of Japan.

26. Stem arboreous, ſlim, weak, a fathom in height. Branches and branchlets alternate, flexuoſe, ſmooth, aſh-coloured, ſpreading. Leaves from the ends of the branches ſeveral, acute, ſhort in flowering time, but afterwards becoming longer. Petioles ſhorter by half than the leaves. Flowers from the tops of the branchlets, fleſh-coloured. Peduncles capillary, ſmooth, double the length of the leaves. Calyx cylindrical, widening at top, ſmooth, ferrûginous, ſhorter by half than the corolla. It differs from *P. inſtitia* in its ſolitary peduncles, unarmed branches, and gaſh-ſerrate leaves:—from *P. ſpinoſa* by its ovate hairy gaſh-ſerrate leaves and unarmed branches.—Native of Japan.

27. Stem arboreous: branches ſmooth erect: branchlets alternate ſpreading tomentoſe. Leaves alternate, acute, ſerrate, veined, villoſe above, ſpreading, about an inch in length. Petioles tomentoſe, half a line long. Flowers peduncled. Drupe the ſize of a pea.—Native of Japan[t].

28. Stems fruteſcent, procumbent, very much branched. Leaves acuminate to both ends, on ſhort petioles. Stipules in pairs, narrow-lanceolate or briſtle-ſhaped. Flowers commonly in pairs, axillary, ſubſeſſile, pale purple roſe-coloured or white. Drupe ſmall, ovate, red with very little pulp: nut or ſtone ovate with the ſutures ſcarcely prominent[u]: which diſtinguiſhes it from the Almond, to whoſe habit it approaches.

Native of the mountains of Crete; on mount Libanus at the height of one thouſand fathoms; and if the Amygalus incana of Pallas be the ſame with this, it is found alſo on Caucaſus, about Kſauriſi and Teflis. Deſfontaines obſerved it on mount Atlas.

29. According to Willdenow, this is Padus virginiana of Miller's Dictionary, and Prunus virginiana of Du Roi: he ſays it is eaſily diſtinguiſhed, although the leaves vary much in form, by the midrib being bearded underneath towards the baſe.

Native of North America. See Miller's deſcription, and the ſynonyms of Gronovius, Cateſby, &c. under n. 3.

30. This reſembles Prunus ſibirica, but differs in having the leaves doubly ſerrate, and the petioles glandular. It is commonly known in the gardens under the French name of *Abricot noir*. Suppoſed to be a native of the Levant.

31. This is probably a mule preſerving its difference in gardens.

32. This is a ſhrub without thorns, three or four feet high. Leaves attenuated at the baſe, ſharply ſerrate, the laſt tooth having a gland on each ſide. Flowers four or five together cluſtered in an umbel, and of the ſame ſize with thoſe of the Black-thorn. Fruit as large as a great pea, black, with very little pulp.—Native of North America[v].

33. This has been generally conſidered as a variety of Prunus domeſtica or the common Plum. The branches are very ſmooth but ſomewhat thorny, the leaves are convoluted; the peduncles very ſlender and ſmooth; the calyx reflex; the drupe ſubglobular, dark purple or red and ſweet[w].—Native of North America.]

PROPAGATION AND CULTURE.

1, 2, 29. The two firſt ſorts and the twenty-ninth are eaſily propagated either by ſeeds or layers. Sow the ſeeds in the autumn upon a bed or border of good ground, in the ſame way as Cherry-ſtones deſigned for ſtocks. Treat the plants alſo in the ſame manner; planting them out in a nurſery, where they may ſtand two years to get ſtrength; and then tranſplant them to the places where they are to remain. They are uſually intermixed with other flowering-trees and ſhrubs in ornamental plantations.

For layers, the young ſhoots ſhould be laid down in the autumn: theſe will have good roots in twelve months, when they may be ſeparated from the old plants, and tranſplanted into a nurſery for a year or two, to get ſtrength, and may then be removed to the places where they are to grow.

5. Plant this in a warm ſituation, and ſhelter it from ſevere froſt, whilſt young: when it has acquired ſtrength, it will thrive very well in the open ground in ſheltered ſituations. It may be propagated in the ſame manner as the Portugal Laurel from the berries; and if the branches are laid down, they will take root.

8. The Portugal Laurel may be propagated in the ſame way as the common Laurel, by cuttings, layers, or ſeeds. If the cuttings are planted at the ſame ſeaſon, and in the ſame way as will be directed for the common Laurel, they will take root very freely; or if the young branches are laid in the autumn, they will take root in one year, and may then be removed into a nurſery, where they may grow a year or two to get ſtrength, and then be tranſplanted where they are to remain.

But although both theſe methods are very expeditious for the propagating thoſe plants, yet I would recommend the raiſing them from the berries, eſpecially where they are deſigned for tall ſtandards; for the plants which are propagated by cuttings and layers, put out more lateral branches and become buſhy, but are not ſo well inclined to grow upright, as thoſe which come from ſeeds: and as there are now many trees in the Engliſh gardens which produce plenty of berries every year, if they are guarded from birds till they are ripe, there may be a ſupply of them ſufficient to raiſe plants enough without propagating them any other way. Theſe berries muſt be ſown in the autumn, and treated in the ſame way as the common Laurel.

This tree delights in a gentle loamy ſoil, which is not too wet nor over dry, though it will grow upon almoſt any ſoil: but the plants do not make ſo great progreſs, nor appear ſo beautiful, when planted in a

[x] Woodville. [t] Thunberg. [u] Billard. & Deſfont. [v] Willdenow. [w] Ehrhart.

very

very dry ſoil, or in ground that is over wet. The time of tranſplanting them is the ſame as for the common Laurel.

This is much hardier than that; for in the ſevere froſt of the year 1740, when great numbers of Laurels were entirely killed, and moſt of them loſt their verdure, this remained unhurt: and as it grows to a conſiderable ſize, and the dark-green leaves make a fine mixture with the elegant ſpikes of white flowers, it is one of the moſt valuable evergreens we have.

[In ſeveral winters ſince 1740, the Portugal Laurels have ſuffered ſeverely. In 1784, during the month of december, all thoſe which ſtood in ſunny aſpects not only loſt their foliage, but were cut to the ground, though they afterwards revived. Many Portugal Laurels alſo round London were cut to the ground by the froſt in january 1776.]

9. The Laurel may be eaſily propagated by ſeeds or by planting of the cuttings; the beſt time for doing the latter is in ſeptember, as ſoon as the autumnal rains fall to moiſten the ground; the cuttings muſt be the ſame year's ſhoots, and if they have a ſmall part of the former year's wood to their bottom, they will more certainly ſucceed, and form better roots. Theſe ſhould be planted in a ſoft loamy ſoil about ſix inches deep, preſſing the earth cloſe to them. If theſe are properly planted, and the ground is good, there will few of the cuttings fail; and if they are kept clean from weeds the following ſummer, they will have made good ſhoots by the following autumn, when they may be tranſplanted into a nurſery, where they may grow two years to get ſtrength, and then ſhould be removed to the places where they are to remain. Theſe plants were formerly kept in pots and tubs, and preſerved in green-houſes in winter; but afterward they were planted againſt warm walls, to preſerve them, being frequently injured by ſevere froſt. After this the plants were trained into pyramids and globes, and conſtantly kept ſheered; by which the broad leaves were generally cut in the middle, which rendered the plants very unſightly. Of late years they have been more properly diſpoſed in gardens, by planting them to border woods, and the ſides of wilderneſs quarters; for which purpoſe we have but few plants ſo well adapted, for it will grow under the drip of trees, in ſhade or ſun; and the branches will ſpread to the ground, ſo as to form a thicket; and the leaves being large, and having a fine gloſſy green colour, they ſet off the woods and other plantations in winter, when the other trees have caſt their leaves; and in ſummer they make a good contraſt with the green of the other trees. Theſe trees are ſometimes injured in very ſevere winters, eſpecially where they ſtand ſingle and are much expoſed; but where they grow in thickets, and are ſcreened by other trees, they are ſeldom much hurt; for in thoſe places it is only the young tender ſhoots which are injured, and there will be new ſhoots produced immediately below theſe to ſupply their place, ſo that in one year the damage will be repaired. But whenever ſuch ſevere winters happen, theſe trees ſhould not be cut or pruned till after the following midſummer; by which time it will appear what branches are dead, which may then be cut away, to the places where the new ſhoots are produced; for by haſtily cutting theſe trees in the ſpring, the drying winds have free ingreſs to the branches, whereby the ſhoots ſuffer as much, if not more, than they had done by the froſt.

Theſe trees are alſo very ornamental, when they are mixed with other evergreen trees, in forming of thickets, or to ſhut out the appearance of diſagreeable objects; for the leaves being very large, make a very good blind, and are equally uſeful for ſcreening from winds; ſo that when they are planted between flowering-ſhrubs, they may be trained ſo as to fill up the vacancies in the middle of ſuch plantations; and will anſwer the purpoſe of ſcreening in the winter, and ſhutting out the view through the ſhrubs in all ſeaſons: there are alſo many other purpoſes to which this tree may be applied, ſo as to render it very ornamental.

In warmer countries this tree will grow to a great ſize, ſo that in ſome parts of Italy there are large woods of them; but we cannot hope to have them grow to ſo large ſtems in England; for ſhould theſe trees be pruned up, in order to form them into ſtems, the froſt would then become much more hurtful to them than in the manner they uſually grow, with their branches to the ground: however, if the trees are planted pretty cloſe together in large thickets, and permitted to grow rude, they will defend each other from the froſt, and they will grow to a conſiderable height: an inſtance of which is now in that noble plantation of evergreen trees, made by his Grace the Duke of Bedford at Wooburn-abbey, where there is a conſiderable hill covered entirely with Laurels; and in the other parts of the ſame plantation, there are great numbers of theſe intermixed with the other evergreen trees, where they are already grown to a conſiderable ſize, and make a noble appearance.

There are ſome perſons who propagate theſe trees from their berries, which is certainly the beſt way to obtain good plants; for thoſe which come from ſeeds have a diſpoſition to an upright growth, whereas almoſt all thoſe which are raiſed from cuttings or layers, incline more to an horizontal growth, and produce a greater number of lateral branches. When any perſon is deſirous to propagate this tree by ſeeds, the berries muſt be guarded from the birds, otherwiſe they will devour them before they are perfectly ripe, which is ſeldom earlier than the latter end of ſeptember, or the beginning of october, for they ſhould hang until the outer pulp is quite black. When theſe berries are gathered, they ſhould be ſown ſoon after; for when they are kept out of the ground till ſpring, they frequently miſcarry; and there will be no hazard in ſowing them in the autumn, provided they are put in a dry ſoil; and if the winter ſhould prove ſevere, the bed in which they are ſown ſhould be covered with rotten tan, ſtraw, Peas-haulm, or any light covering, to prevent the froſt from penetrating of the ground. The beſt way will be to ſow the berries in rows at about ſix inches diſtance, and one inch aſunder in the rows; if drills are made about three inches deep, and the berries ſcattered in them, and the earth drawn over them, it will be a very good method. The following ſpring the plants will appear, when they ſhould be kept clean from weeds; and if the ſeaſon ſhould prove dry, if they are duly watered, the plants will make ſo good a progreſs as to be fit for tranſplanting the following autumn, when they ſhould be carefully taken up, and planted in a nurſery, placing them in rows at three feet aſunder, and the plants one foot diſtance in the rows. In this nurſery they may remain two years, by which time they will be fit to tranſplant where they are deſigned to remain.

The beſt ſeaſon for tranſplanting theſe plants is in the autumn, as ſoon as the rain has prepared the ground for planting; for although they often grow when removed in the ſpring, yet thoſe do not take ſo well, nor make ſo good progreſs as thoſe which are removed in the autumn, eſpecially if the plants are taken from a light ſoil, which generally falls away from their roots; but if they are taken up with balls of earth to their roots, and removed but a ſmall diſtance, there will be no danger of tranſplanting them in the ſpring, provided it is done before they begin to ſhoot; for as the plants will ſhoot very early in the ſpring, ſo if they are removed after they have ſhot, the ſhoots will decay, and many times the plants entirely fail.

There are ſome perſons who have grafted the Laurel upon Cherry ſtocks, with deſign to enlarge the trees, but although they will take very well upon each other, yet they ſeldom make much progreſs when either the Laurel is grafted on the Cherry, or the Cherry upon the Laurel; ſo that it is only a thing of curioſity, attended with no real uſe: and I would recommend to perſons who have this curioſity, to graft the Laurel upon the Corniſh Cherry, rather than any other ſort of ſtock, becauſe the graft will unite better with this; and as it is a regular tree and grows large, ſo it will better anſwer the purpoſe of producing large trees.

[In propagating the Laurel from cuttings, the under leaves ſhould be ſtripped off. The cuttings may be ſet thick. The weather ſhould be rainy or at leaſt cloudy when this work is done; and the beds ſhould be under a north wall, or elſe well ſhaded. If the weather will permit the cuttings to be planted in auguſt, they will the more certainly take root before winter; but they ſhould remain undiſturbed till the ſpring twelvemonth following, when they ſhould be carefully taken out, and planted in the nurſery[p].

To raiſe the Laurel from ſeeds, in the beginning of winter, ſoon after they are ripe, ſow them in a ſhady border of freſh looſe mould, in beds three feet and a half broad, with alleys of eighteen inches, covering them an inch and half or two inches deep. About the middle of april, if the weather be dry and not froſty, water them frequently in the morning, and continue this during the ſummer months on evenings. The ſucceeding ſpring remove them to the nurſery, in rows two feet aſunder, and nine or ten inches in the row. In two years, if the ground be good, and they have been taken good care of, they will be fit to remove finally[q].

The ſeed-beds may be hooped over, that they may be covered occaſionally with mats when the froſt is ſevere.

When a large plantation of Laurels is intended, the work of tranſplanting may be done at any time during the winter, when the weather will permit; but october is the beſt ſeaſon. The ground muſt be well worked and cleaned, and the trees planted in holes a yard aſunder. When they begin to touch, ſtill let them remain unthinned two or three years longer, to draw one another up. Thin them ſparingly at firſt, only taking out a weakly plant here and there, to make room for the vigorous ſhooting of the others; leſt the cold, entering the plantation too much at once, ſhould retard its growth, if not wholly deſtroy it.

12. Perfumed Cherry is often propagated by grafting upon any ſort of Cherry ſtock.]

13. Apricots. Moſt people train theſe trees up to ſtems of ſix or ſeven feet high, or bud them upon ſtocks of that height; but this is a practice I would not recommend to the public, becauſe the higher the heads of theſe trees are, the more they are expoſed to the cutting winds in the ſpring, which too frequently deſtroy the bloſſoms: and the fruit is alſo more liable to be blown down in ſummer, eſpecially if there ſhould happen to be much wind at the time when the fruit is ripe; which by falling from a great height, will be bruiſed and ſpoiled; therefore I prefer half ſtandards, of about two and a half, or three feet in the ſtem, to thoſe which are much taller; or to plant them as dwarfs againſt an eſpalier, where, if they are ſkilfully managed, they will produce a large quantity of good fruit; and the trees in eſpalier may be more conveniently covered in the ſpring, when the ſeaſon proves bad, whereby there will be a greater certainty of fruit every year.

Theſe fruits are all propagated by budding them on Plum-ſtocks, and will readily take upon almoſt any ſort of Plum, provided the ſtock be free and thriving (except the Bruſſels kind, which is uſually budded on a ſort of ſtock, commonly called the St. Julian, which better ſuits this tree, as being generally planted for ſtandards, than any other ſort of Plum will.) The manner of raiſing the ſtocks, and budding theſe trees, is treated of under their particular articles, to which I refer the reader, and ſhall proceed to their planting and management.

Theſe trees are all except the two laſt ſorts (planted againſt walls, and ſhould have an eaſt or weſt aſpect; for if they are planted full ſouth, the great heat cauſes them to be mealy before they are eatable.

The borders near theſe walls ſhould be ſix or eight feet wide, at leaſt, and if it were more, the better; but I would never adviſe the making of them ſo deep as is the general cuſtom, for if the earth be two feet deep, or two and a half at moſt, it is enough.

[p] Hunter on Evelyn. [q] Boutcher.

If the ground is a wet cold loam or clay, the borders ſhould be raiſed as much above the level of the ſurface as it will admit, laying ſome ſtones or rubbiſh in the bottom, to prevent the roots from running downwards; but if you plant upon a chalk or gravel, it will be better to raiſe the borders to a proper thickneſs, with good loamy earth, than to ſink the borders by removing the chalk or gravel; for although theſe are removed the whole breadth of the border, which we may allow to be eight feet, and this trench filled with good earth, yet the roots of the trees will in a few years extend this length, and then meeting with the chalk or gravel, they will receive a check whereby their leaves will fall off early in the ſeaſon, and the fruit will be ſmall, dry, and ill-flavoured, and the ſhoots of the trees will be weak. But where the borders are raiſed above either to their full height, the roots will not ſtrike down into the gravel or chalk, but rather extend themſelves near the ſurface, where they will meet with better ſoil: and as the trees are of long duration, and old trees are not only more fruitful than young, but the fruit is alſo better flavoured, the providing for their continuance is deſirable.

The ſoil I would in general adviſe to be uſed for theſe, and all other ſorts of fruit-trees, is freſh untried earth, from a paſture ground, taken about ten inches deep, with the turf and laid to rot and mellow at leaſt twelve months before it is uſed, mixing a little rotten dung with it; this muſt be often turned, to ſweeten and imbibe the nitrous particles of the air.

When the former ſoil of the border is taken away, this freſh earth ſhould be carried in the place; and if the borders are filled with it two months before the trees are planted, the ground will be better ſettled, and not ſo liable to ſink after the trees are planted: in filling the borders, the ground ſhould be raiſed four or five inches above the level they are deſigned, to allow for the ſettling.

The borders being thus prepared, make choice of ſuch trees as are but of one year's growth from budding; and if the ſoil is dry, or of a middling temper, october is the beſt ſeaſon for planting, eſpecially having at that time a greater choice of trees from the nurſeries, before they have been picked and drawn over by other people. The manner of preparing theſe trees for planting being the ſame in common with other fruit trees, I ſhall refer the reader to the article of Peaches, where he will find it largely treated of. At the time of planting no part of the head of the trees ſhould be cut off, unleſs there are any ſtrong foreright ſhoots which will not come to the wall, which may be taken quite away.

The trees being thus prepared, you muſt mark out the diſtances they are to ſtand, which in a good ſtrong ſoil, or againſt a low wall, ſhould be twenty feet or more; but in a moderate one, eighteen feet is a good reaſonable diſtance; then make a hole where each tree is to ſtand, and place its ſtem about four inches from the wall, inclining the head thereto; and after having fixed the tree in the ground, nail the branches to the wall, to prevent their ſhaking, and cover the ſurface of the ground round the root with rotten dung, to keep out the froſt: in this ſtate let it remain till the end of february or the beginning of march, when if the weather is good, you muſt unnail the branches of your trees, ſo as not to diſturb their roots; and, being provided with a ſharp knife, put your foot cloſe to the ſtem of the tree; and having placed your left-hand to the bottom of the tree, to prevent its being diſturbed, with your right-hand cut off the head of the tree, if it has but one ſtem; or where it may have two or more ſhoots, each of them muſt be ſhortened, to about four or five eyes above the bud, ſo that the ſloping ſide may be toward the wall.

In the ſpring, if the weather proves dry, it will be neceſſary to give the trees a gentle refreſhing with water; in the doing of which, if they be watered with a roſe to the watering-pot all over their heads, it will greatly help them; and alſo lay ſome turf, in the manner directed for Apples, or ſome other mulch, round their roots, to prevent their drying during the ſummer

ſummer ſeaſon; and in the ſpring, as new branches are produced, obſerve to nail them to the wall in a horizontal poſition; and ſuch ſhoots as are produced fore-right, muſt be entirely diſplaced. This muſt be repeated as often as is neceſſary, to prevent their hanging from the wall, but by no means ſtop any of the ſhoots in ſummer.

At michaelmas, when the trees have done growing, their branches ſhould be unnailed, and ſhorten them in proportion to their ſtrength; a vigorous branch may be left eight or nine inches long, but a weak one ſhould not be left above five or ſix. I ſuppoſe many perſons will wonder at this direction, eſpecially having allowed ſuch a diſtance between the trees, as believing, by this management, the wall will never be filled; but my reaſon for it is, that I would have no part of the wall left unfurniſhed with bearing wood; which muſt be the caſe, if the branches are left to a greater length at firſt; for it ſeldom happens, that more buds than two or three upon each branch ſhoot; and theſe are, for the moſt part, ſuch as are at or near the extreme part of the laſt year's wood; ſo that all the lower parts of the ſhoots become naked, nor will they ever after produce ſhoots; and this is the reaſon we ſee ſo many trees which have their bearing wood ſituated only in the extreme part of the tree.

When you have ſhortened the ſhoots, be ſure to nail them as horizontally as poſſible, for upon this it is that the future good of the tree chiefly depends.

The ſecond ſummer obſerve, as in the firſt, to diſplace all fore-right ſhoots as they are produced, nailing in the other cloſe to the wall horizontally, ſo that the middle of the tree may be kept open; and never ſhorten any of the ſhoots in ſummer, unleſs to furniſh branches to fill vacant places on the wall; and never do this later than the end of april, for reaſons given in the article of Peaches. At michaelmas ſhorten theſe ſhoots, as was directed for the firſt year; the ſtrong ones may be left nine or ten inches, and the weak ones ſix or ſeven at moſt.

The following year's management will be nearly the ſame with this, but only obſerve, that Apricots produce their bloſſom buds, not only upon the laſt year's wood, but alſo upon the curſons, or ſpurs, which are produced from the two year's wood; a great care ſhould therefore be had in the ſummer management, not to hurt or diſplace theſe: obſerve alſo to ſhorten the branches at the winter pruning, ſo as to furniſh freſh wood in every part of the tree; and be ſure to cut out entirely all luxuriant branches, or diſplace them as ſoon as they are produced; which, if left to grow, would exhauſt the nouriſhment from the bearing branches, which in my opinion, cannot be too ſtrong, provided they are kindly; for the more vigorous the tree is, the more likely it is to reſiſt the injuries of the weather; though we often ſee trees brought to ſo weak a condition, as to be able only faintly to blow their bloſſoms, and then moſt of the bearing branches have died; which has given occaſion to the owner to imagine it was the effect of a blight, when, in reality, it was only for want of right management. And, I am fully perſuaded, half the blights we hear complained of, proceed from nothing elſe but this.

Theſe few rules, well executed, together with a little obſervation and care, will be ſufficient; to pretend to preſcribe particular directions for all the different accidents, or manner of treating fruits, would be impoſſible; but I believe the reader will find what has been ſaid, if duly attended to, will anſwer his deſign; for, without diligent obſervation, there can be no ſuch thing as a ſkilful manager, let him have ever ſo many or good inſtructions laid down to him.

The Bruſſels and Breda Apricots, being, for the moſt part, planted for ſtandards, will require very little pruning or management; only obſerve to take out all dead wood, or ſuch branches as croſs each other; this muſt be done early in autumn, or in the ſpring, after the cold weather is paſt, that the part may not canker where the inciſion is made.

15. The dwarf Canadian Cherry tree is eaſily propagated by laying down the branches early in the ſpring. They will take root by the following autumn, when they may be taken off, and either planted in a nurſery to get ſtrength, or to the places where they are deſigned to remain. It may alſo be propagated by ſowing the ſtones in the ſame manner as the common Cherry.

16. All the ſorts of Cherries which are uſually cultivated in fruit-gardens, are propagated by budding or grafting the ſeveral kinds into ſtocks of the black or wild red Cherries, which are ſtrong ſhooters, and of a longer duration than any of the garden kinds. The ſtones of the wild Cherries are ſown in a bed of light ſandy earth in autumn; or are preſerved in ſand till ſpring, and then ſowed. The young ſtocks ſhould remain in the nurſery beds till the ſecond autumn after ſowing; at which time prepare an open ſpot of good freſh earth, well worked. In october plant out the young ſtocks at three feet diſtance row from row, and about a foot aſunder in the rows; being careful in taking them up from their ſeed-beds, to looſen their roots well with a ſpade, to prevent their breaking. Prune their roots; and if they are inclinable to root downwards, ſhorten the tap root, but do not prune their tops.

The ſecond year after planting out, if they take to growing well, they will be fit to bud, if they are intended for dwarfs; but if they are for ſtandards they will not be tall enough till the fourth year, for they ſhould be budded or grafted near ſix feet from the ground, otherwiſe the graft will not advance much in height; ſo that it will be impoſſible to make a good tree from ſuch as are grafted low, unleſs the graft be trained upwards.

The uſual way with the nurſery-gardeners is, to bud their ſtocks in ſummer, and ſuch of them as miſcarry they graft the ſucceeding ſpring. Thoſe trees where the buds have taken, muſt be headed off the beginning of march about ſix inches above the bud; and when the bud has ſhot in ſummer, if there be any apprehenſion of its being blown out by the winds, it muſt be faſtened with baſs or other ſoft tying to that part of the ſtock which was left above the bud. The autumn following theſe trees will be fit to remove; but if the ground be not ready to receive them, they may remain two years before they are tranſplanted; in doing which obſerve not to head them, for this very often is immediate death to them; but if they ſurvive, they ſeldom recover in five or ſix years.

If theſe trees are intended for a wall, plant dwarfs between the ſtandards; but the latter, as the former fill the walls, muſt be cut away, to make room for them. But never plant ſtandard Cherries over other fruits; for there is no ſort of fruit that will proſper well under the drip of Cherries.

When theſe trees are taken up from the nurſery, ſhorten the roots, and cut off all the bruiſed parts, as alſo the ſmall fibres, which would dry, grow mouldy, and be a great prejudice to the new fibres in their coming forth; cut off likewiſe the dead part of the ſtock which was left above the bud, cloſe down to the back part of it, that the ſtock may be covered by the bud. If theſe trees are deſigned for a wall, place the bud directly from the wall, that the back part of the ſtock which was cut may be hid from ſight. The ſoil that Cherries thrive beſt in is a freſh hazel loam: if it be a dry gravel they will not live many years, and will be perpetually blighted in the ſpring.

The ſorts commonly planted againſt walls are the Early May and May Duke, which ſhould have a ſouth aſpect. The Hearts and common Duke will thrive on a weſt wall, and in order to continue the Duke later in the ſeaſon, they are frequently placed againſt north and north-weſt walls, where they ſucceed very well. The Morello, which is chiefly planted for preſerving, is commonly put on a north wall. The Hearts are all ill bearers, for which reaſon they are ſeldom planted againſt walls; but probably if they were grafted on the Bird Cherry, and managed properly, that defect might be remedied; for it is ſaid that this ſtock will render Cherries very fruitful, and having the ſame effect on Cherries as the Paradiſe ſtock has on Apples, they may be kept in leſs compaſs: at leaſt it is an experiment well worth the trial.

Cherry trees planted againſt a wall, ſhould be at leaſt twenty or twenty-four feet aſunder, with a ſtandard tree between each dwarf: for theſe trees will extend themſelves as far as, or farther than Apricots, and many other ſorts of fruit.

In pruning Cherries, the ſhoots ſhould never be ſhortened, for moſt of them produce their fruit buds at their extreme part, which by ſhortening are cut off, and this often occaſions the death of the ſhoot: their branches ſhould therefore be trained in at full length horizontally, obſerving in May, where there is a vacancy in the wall, to ſtop ſome ſtrong adjoining branches, which will occaſion their putting out two or more ſhoots; by which means, at that ſeaſon of the year, there may always be a ſupply of wood for covering the wall; at the ſame time diſplace all fore-right ſhoots by the hand, for if they are ſuffered to grow till winter, they will not only deprive the bearing branches of their proper ſupply of nouriſhment, but when they are cut out, they occaſion the tree to gum in that part; for Cherries bear the knife worſe than any other ſort of fruit-trees; but be careful not to rub off the ſides or ſpurs which are produced upon the two or three years old wood; for it is upon theſe that the greateſt part of the fruit is produced, and they will continue fruitful for ſeveral years. It is for want of duly obſerving this caution that Cherry-trees are often ſo unfruitful, eſpecially the Morello, which ſhoots the weaker, the more it is cut.

Cherry-trees are alſo planted for Orchards in many parts of England, particularly in Kent. The uſual diſtance allowed for them is forty feet ſquare, at which ſpace they are leſs ſubject to blight than when they are planted cloſer; and the ground may be tilled between them almoſt as well as if it were entirely clear, eſpecially whilſt the trees are young; and the often ſtirring the ground, provided the roots be not diſturbed, will greatly help the trees; but when they are grown ſo big as to overſhadow the ground, the drip of their leaves will not ſuffer many things to thrive under them.

The beſt ſorts for an Orchard, are the common Red or Kentiſh, the Duke and the Lukeward, all which are plentiful bearers.

Some perſons graft the Duke and other ſorts of Cherries upon the Morello, which is but a weak ſhooter, in order to check the luxuriant growth of their trees, which will ſucceed for three or four years; but they are not of long duration, nor will they make ſhoots above ſix or eight inches long; being cloſely covered with bloſſoms, they may produce ſome fruit in a ſmall compaſs; but ſuch experiments are unfit for general uſe, and proper only to ſatisfy curioſity; and it is much better to allow the trees a greater ſhare of room againſt the walls, when one tree ſo planted, and properly managed, will produce more fruit than twenty of theſe trees, or twice that number, when they are planted too cloſe, though they are grafted upon the Black Cherry, or any other free ſtock.

The double-flowering Cherry is propagated by budding or grafting on the Black or Wild Cherry ſtock; and the trees are very proper to intermix with flowering trees of the ſecond growth. The flowers are as large and double as a Cinnamon Roſe, and being produced in large bunches on every part of the tree, render it one of the moſt beautiful trees of the ſpring. Some of the flowers, which are leſs double, often produce fruit, which the very double flowers do not.

17. The Black Cherry is ſeldom grafted or budded, but is generally ſown for ſtocks; where perſons however are curious to have the beſt flavoured of this ſort of fruit, they ſhould be grafted from ſuch trees as produce the beſt. [They are always trained as ſtandards, the Coroun for the orchard, and the ſmall wild black and red for plantations in parks, &c.]

20. Plums. All the varieties are propagated by budding or grafting upon ſtocks of the Muſcle, white Pear, St. Julian, Bonum Magnum, or any of the free-ſhooting Plums. For the manner of raiſing theſe ſtocks, ſee Nursery.—Budding is much preferable to grafting for Plum-trees, becauſe they are very apt to gum, wherever large wounds are made on them.

The trees ſhould not be more than one year's growth from the bud when they are tranſplanted, for if they are older they are very ſubject to canker; or if they take well to the ground, commonly produce only two or three luxuriant branches.

The manner of prepairing the ground (if for walls) is the ſame as for Peaches; as is alſo pruning the roots and planting, therefore I ſhall forbear repeating it again. The diſtance which theſe trees ſhould be planted at, muſt not be leſs than twenty-four feet againſt high walls; and if the wall is low, they ſhould be placed thirty feet aſunder.

Plums ſhould have a middling ſoil, neither too wet and heavy, nor over light and dry, in either of which extremes they ſeldom do ſo well; and thoſe ſorts which are planted againſt walls, ſhould have an eaſt or ſouth-eaſt aſpect, which is more kindly to theſe fruits than a full ſouth aſpect, on which they are ſubject to ſhrivel, and be very dry; and many ſorts will be extreme mealy, if expoſed too much to the heat of the ſun; but moſt ſorts will ripen extremely well on eſpaliers, if rightly managed.

There are ſome perſons who plant Plums for ſtandards, in which method ſome of the ordinary ſorts will bear very well; but then the fruit will not be near ſo fair as thoſe produced on eſpaliers, and will be more in danger of being bruiſed or blown down by ſtrong winds. The diſtance of placing them for eſpaliers muſt be the ſame as againſt walls, as muſt alſo their pruning and management; ſo that whatever may be hereafter mentioned for one, ſhould be likewiſe underſtood for both.

Plums do not only produce their fruit upon the laſt year's wood, but alſo upon curſons or ſpurs, which come out of wood that is many years old; ſo that there is not a neceſſity of ſhortening the branches, in order to obtain new ſhoots annually, in every part of the tree (as in Peaches, Nectarines, &c. hath been directed) ſince the more theſe trees are pruned, the more luxuriant they grow, until the ſtrength of them is exhauſted, and then they gum and ſpoil; therefore the ſafeſt method to manage theſe trees is, to lay in their ſhoots horizontally, as they are produced, at equal diſtances, in proportion to the length of their leaves; and where there is not a ſufficient quantity of branches to fill up the vacancies of the tree, there the ſhoots may be pinched the beginning of May (in the manner as hath been directed for Peaches, &c.) which will cauſe them to produce ſome lateral branches to ſupply thoſe places; and during the growing ſeaſon, all fore-right ſhoots ſhould be diſplaced, and ſuch as are to remain muſt be regularly trained in to the wall or eſpalier, which will not only render them beautiful, but alſo give to each part of the trees an equal advantage of ſun and air; and hereby the fruit will be always kept in a ductile growing ſtate, which they ſeldom are, when overſhaded with ſhoots ſome part of the ſeaſon, and then ſuddenly expoſed to the air, by taking off, or training thoſe branches in their proper poſition.

With thus carefully going over theſe trees in the growing ſeaſon, there will be but little work to do to them in winter; for when the branches are ſhortened, the fruit is cut away, and the number of ſhoots increaſed; for whenever a branch is ſhortened, there are commonly two or more ſhoots produced from the eyes immediately below the cut; ſo that by thus unſkilfully pruning, many perſons crowd their trees with branches, and thereby render what little fruit the trees produce, very ſmall and ill-taſted; which is very commonly found in too many gardens, where the manager, perhaps, thinks himſelf a complete maſter of his buſineſs, for nothing is more common than to ſee every branch of a fruit-tree paſs the diſcipline of the knife, however diſagreeable it be to ſeveral ſorts of fruits. And it is common to ſee theſe trees planted at the diſtance of fourteen or ſixteen feet, ſo that the walls are in a few years covered with branches; and then all the ſhoots are cut and mangled with the knife, ſo as to appear like a ſtumped hedge, and produce little fruit; therefore the only way to have Plum-trees in good order,

is to give them room, and extend their branches at full length.

Thoſe few rules before laid down, will be ſufficient, if due obſervation be joined therewith, to inſtruct any perſon in the right management of theſe ſorts of fruit-trees.

21. [The Bullace is raiſed from the ſtones; but its varieties can be continued with certainty only by graffing or budding them upon any Plum or Bullace ſtocks.

The ſtones may be ſown in autumn in beds, two inches deep; keep them clean, and when they are two years old, plant them in rows from two to three feet aſunder, and train them to a ſingle ſtem.

Graft or bud theſe, when they are of a proper height, in the ſame manner as other Plums. When they have formed heads, tranſplant them where they are to remain, any time from october to march, placing them eighteen or twenty feet aſunder.

22. The Black-thorn, though very uſeful to the huſbandman, is alſo noxious to him, by incroaching on his paſturage. If they be felled above ground, the ſtubs are in the way of the ſcythe and the bite of cattle, and the thicket is preſently renewed.

If Black-thorns be grubbed up by the roots, every fibril left in the ſoil produces a freſh plant; ſo that unleſs great caution is obſerved in taking all theſe out, inſtead of being leſſened by this tedious and expenſive operation, their number will be increaſed.

But if they be cut off level with the ſurface, the ſcythe has free ſweep, and the young ſhoots are removed with eaſe and certainty.

If the ground be mown for hay, the ſame ſtroke which cuts the herbage takes off the ſhoots.

If paſtured; cattle and ſheep, provided they have no woodland left to browze among, will gnaw them to the quick. It is however always adviſeable in this caſe to ſweep the ground over with the ſcythe in the courſe of the ſummer, to remove the remains which may have eſcaped the bite of the animals.

The ſecond year the ſhoots will riſe weak, and the roots themſelves ſeldom ſurvive the third year.

In a very few years more the roots will be found entirely rotten.

If a thicket or border, where the ſward is nearly loſt, be treated in this manner, rubbiſh of every kind ſhould be raked off, a few graſs-ſeeds ſcattered on, and the ſurface run over with a roller, as a preparation for the ſcythe.

This mode of extirpation is applicable not only to the Black-thorn, but to every tree and ſhrub to which it has been applied, the Furze and Bramble excepted[1].

Where headlands or borders are grubbed, they ſhould be planted with Potatoes or ſome other cleanſing crop, that is well hoed, till the Black-thorns or other ſhrubs and hedge-weeds are totally eradicated, before they are laid down to graſs. Thus purſued grubbing more effectually anſwers the purpoſe than mowing.

PRUNUS. See *Amygdalus, Camocladia, Coccoloba, Cordia, Mimuſops, Spondias.*]

PSEUDO ACACIA. See *Piſcidia* and *Robinia.*

[—— ACMELLA. See *Spilanthus.*

—— ACORUS. See *Iris.*

—— AMBROSIA. See *Cochlearia Coronopus.*

—— APOCYNUM. See *Bignonia.*

—— ASPHODELUS. See *Anthericum.*

—— CAPSICUM. See *Solanum.*

—— CHAMÆPITYS. See *Dracocephalum* and *Teucrium.*

—— CHINA. See *Senecio* and *Smilax.*

—— COSTUS. See *Parthenium.*

—— CYPERUS. See *Carex* and *Schoenus.*

—— CYTISUS. See *Vella.*]

—— DICTAMNUS. See *Marrubium.*

[—— DIGITALIS. See *Dracocephalum.*

—— FUMARIA. See *Fumaria.*

—— GELSEMINUM. See *Bignonia.*

—— GNAPHALIUM. See *Micropus.*

[1] Marſhall's Yorkſhire, 1. 315.

PSEUDO HELICHRYSUM. See *Baccharis, Erigeron, Inula,* and *Iva.*

—— HELLEBORUS. See *Helleborus.*

—— LIMODORUM. See *Orchis abortiva.*

—— LOTUS. See *Dioſpyros.*

—— LYSIMACHIUM. See *Epilobium* and *Veronica.*

—— MARRUBIUM. See *Lycopus.*

—— MELANTHIUM. See *Agroſtemma.*

—— NARCISSUS. See *Anthericum* and *Narciſſus.*

—— NARDUS. See *Lavandula.*

—— ORCHIS. See *Ophrys* and *Satyrium.*

—— PLATANUS. See *Acer.*

—— PSIDIUM. See *Eugenia.*

—— RUBIA. See *Crucianella.*

—— RUTA. See *Ruta.*

—— SANTALUM. See *Caſalpinia.*

—— STACHYS. See *Stachys.*

—— SYCOMORUS. See *Melia.*

—— VALERIANA. See *Valeriana.*]

PSIDIUM. (*So named by Linnæus from* ψιδιον *of Hippocrates.*)

Lin. gen. n. 615. *Reich. n.* 670. *Schreb. n.* 841. *Juſſ.* 324. Guajava. *Tournef. t.* 443. *Gærtn. t.* 38. Decaſpermum. *Forſt.* 37. Nelitris. *Gærtn. t.* 27.

Claſſ. 12. 1. Icoſandria Monogynia.

Nat. order of *Heſperideæ. Myrti,* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, five-cleft, permanent: *ſegments* ovate.

COR. *Petals* five, ovate, concave, ſpreading, inſerted into the calyx.

STAM. *Filaments* numerous, ſhorter than the corolla, inſerted into the calyx. *Anthers* ſmall.

PIST. *Germ* roundiſh, inferior. *Style* awl-ſhaped, very long. *Stigma* ſimple.

PER. *Berry* oval, very large, crowned with the calyx, one or many-celled.

SEEDS numerous, very ſmall, neſtling.

ESSENTIAL CHARACTER.

Cal. five-cleft ſuperior. *Pet.* five. *Berry* one-celled, many-ſeeded.

SPECIES.

1. Pſidium pyriferum. *White Guava.*
Lin. ſpec. 672. *ſyſt.* 460. *Reich.* 2. 473. *Willd.* 957. *hort. cliff.* 148. *fl. zeyl. n.* 192. *Jacqu. obſ.* 2. 6. *Brown. jam.* 238. *Lour. cochinch.* 309. *edit. Willd.* 378.
Guayava. *Park. theat.* 1634. *Ger. emac. app.* 1612. *Raii hiſt.* 1455.
Guajava foliorum angulis quadrangulis, fructu oblongo. *Trew Ehret. t.* 43.
G. alba dulcis. *Comm. hort.* 1. 121. *t.* 63. *Mer. ſurin. t.* 19.
Guajavos fructu pallido dulci. *Burm. zeyl.* 112.
Cujavus domeſtica. *Rumph. amb.* 140. 1. 47.
Pela. *Rheed. mal.* 3. 31. *t.* 34.
Malo punicео affinis pomifera, flore pentapet. albo, fructu eſculento majore albo. *Sloan. jam.* 2. 163.
Leaves elliptic pubeſcent underneath, peduncles one-flowered.

[2. Pſidium pumilum. *Dwarf Guava.*
Lin. ſpec. ed. Willd. 957. *Vahl ſymb.* 2. 56.
P. anguſtifolium. *Lamarck, encycl.* 3. 16.
P. caninum. *Lour. cochinch.* 310? *ed. Willd.* 379?
Cujavillus. *Rumph. amb.* 1. 145. *t.* 49.
Leaves lanceolate acute tomentoſe underneath, peduncles one-flowered.

3. Pſidium aromaticum. *Aromatic Guava.*
Lin. ſpec. ed. Willd. 957. *Aubl. guian.* 1. 485. *t.* 191.
Leaves oblong acuminate ſmooth, peduncles one-flowered.

4. Pſidium grandiflorum. *Great-flowered Guava.*
Lin. ſpec. ed. Willd. 958. *Aubl. guian.* 1. 483. *t.* 190.
Leaves ovate acuminate ſmooth, peduncles one-flowered bracted.

5. Pſidium Decaſpermum.
Lin. ſyſt. 461. *Willd.* 958. *ſuppl.* 252. *Forſt. prodr. n.* 219.

Decaſpermum fruticoſum. *Forſt. gen. n.* 37.
Nelitris Jambooſella. *Gærtn. fruct.* 1. 135.
Leaves ovate acuminate pubeſcent, peduncles one-flowered bracted.]

6. Pſidium pomiferum. *Red Guava.*
Lin. ſpec. 672. *ſyſt.* 461. *Reich.* 2. 474. *Willd.* 958. *Jacqu. obſ.* 2. 7. *Lour. cochinch.* 310. *ed. Willd.* 379.
Guajava alba acida, fructu rotundiore. *Pluk. phyt.* 1. 193. *f.* 4.
Guajaba pomifera indica, pomis rotundis. *Bauh. pin.* 437.
Cujavus agreſtis. *Rumph. amb.* 1. 142. *t.* 48. *Mer. ſurin.* 1. 57.
Malacca pela. *Rheed. mal.* 3. 33. *t.* 35. *Burm. ind.* 113.
Leaves oblong-lanceolate pubeſcent underneath, peduncles three-flowered.

[7. Pſidium guineenſe. *African Guava.*
Lin. ſpec. ed. Willd. 958. *Swartz, prodr.* 77. *deſcr.* 881.
Leaves ovate quite entire tomentoſe underneath, peduncles three-flowered.

8. Pſidium montanum. *Mountain Guava.*
Lin. ſpec. ed. Willd. 959. *Swartz, prodr.* 77. *deſcr.* 879. *Brown. jam.* 239.
Leaves oblong acuminate crenulate ſhining, peduncles many-flowered.

DESCRIPTIONS, *&c.*

1. In its wild ſtate the White Guava tree grows to the height of ſeven or eight, ſometimes of twelve feet. In gardens in the Weſt Indies, where the ſoil is good, it equals a middle-ſized Apple tree, the trunk being ſix feet in height, and a foot and half in circumference. Bark ſmoothiſh, of a yelloviſh browa colour, with large aſh-coloured ſpots. Wood very hard and tough, uſed for ox-yokes and the like purpoſes, and well adapted for fuel. Branches numerous, the young ones four-cornered. Leaves blunt, entire, ſmoothiſh, on ſhort petioles, two or three inches long, oppoſite. Peduncles ſolitary, ſhort, ſupporting a white ſweet-ſmelling flower. Fruit ſmooth, having a peculiar ſmell, yellow ſulphureous or whitiſh on the outſide, roundiſh or more oblong, the ſize of a hen's egg or bigger, according to the ſoil: the rind is a line or two in thickneſs, brittle and fleſhy; pulp rather firm, full of bony ſeeds, fleſh-coloured, ſweet, aromatic and pleaſant. This fruit is eaten with avidity, not only by the natives, but by Europeans; with thoſe who are not accuſtomed to it, the Guava is apt to occaſion a ſlight flux; but Jacquin affirms that when he has been thirſty on a journey, he has eaten of it to ſatiety without ſuffering any harm. It is eaten raw in the deſert, but the ſeeds are ſcarcely ſeparable. It is alſo preſerved with ſugar [a].

Loureiro ſays that the berry is two inches in diameter, commonly egg-ſhaped, but ſometimes roundiſh, ſeldom pear-ſhaped; the rind even and pale, the pulp fleſhy, white or red.

Native both of the Weſt and Eaſt Indies, Cochinchina and the ſouthern provinces of China; becoming a large tree when cultivated, but in its wild ſtate much ſmaller and of an irregular growth, with the trunk and branches diſtorted. In the Caribbee iſlands it frequently overruns the paſtures, and one tree in a garden will ſuffice to fill the whole; for the ſeeds paſs through the body of men and animals, without loſing their vegetative quality [b].

Cultivated here in 1656, by Mr. John Tradeſcant, junior [c].

2. This has exactly the appearance of the preceding, but is five times ſmaller in all its parts. It is a ſhrub of two feet in height, with four-cornered branches having an aſh-coloured villus on them. Leaves oppoſite, an inch long, quite entire, ſmooth above, villoſe underneath, ſeſſile or on very ſhort petioles. Peduncles from the extremities of the branchlets, in pairs, ſhort, villoſe. Leaflets of the calyx lanceolate, blunt, leathery, villoſe within. Fruit globular, the ſize of a hazel nut, ſubvilloſe.—Native of the iſland of Ceylon [d].

Willdenow ſuſpects that *P. caninum* of Loureiro may be the ſame with this; ſince they agree in general, except that he deſcribes the leaves as ſubferrate. He calls it *canina*, becauſe dogs are delighted with it in the ſame manner as cats are with Valerian.—Native of China about Canton.

Loureiro has two other ſpecies, natives of Cochinchina, in woods. 1. *P. nigrum*; a middle-ſized tree, with diſtorted, ſpreading branches. Leaves ovate-lanceolate, ſlightly ferrate, ſmooth on both ſides, ſcattered, without any nerves or ribs, dark green, ſhining. Flowers white, on many-flowered terminating peduncles. Berries black, very ſmall, round, crowned, one-celled, many-ſeeded. 2. *P. rubrum*; a middle-ſized tree with ſpreading branches. Leaves oblong, blunt, quite entire, ſmooth, oppoſite, on ſhort petioles. Flowers white, many, ſeſſile, heaped together, axillary. Calyx tubular, oblong, four-toothed, ſuperior. Petals four, ſmall, unequal. Berry calycine, oblong, red, one-celled, many-ſeeded, crowned, eatable, ſmall. It ſeems to belong to this genus, though it has one-fifth part leſs in the calyx and corolla.

3. This is a tree of moderate ſize, with a trunk of about five feet in height, and branching at the top in a ſcattered manner; the ſmaller branches are tetragonal and leafy; the leaves oblong-ovate, ſharp-pointed, ſmooth, perfectly entire, and ſtanding on ſhort footſtalks: the flowers ſolitary, oppoſite, and riſing from the boſoms of very ſhort leaves near the baſes of the ſmaller branches: they are white and are either tetrapetalous or pentapetalous. The fruit is aromatic, and eatable; a ſpherical berry, of a yellow colour, crowned with the toothlets of the calyx, and quadrilocular. The bruiſed leaves have the ſmell of Balm.—It is a native of Cayenne and Guiana, growing in woods, and flowering in the month of October.

4. This alſo is a middle-ſized tree, with a trunk ten feet high, branching in an irregular manner from the top; the ſmaller branches are quadrangular, and leafy; the leaves oppoſite, ſmooth, quite entire, ſomewhat footſtalked, and ovate-acuminate; they are more than four inches long, and about two and a half broad. The flowers ſpring from the young branches, and ſtand ſingly at the boſom of each leaf, except thoſe towards the top of the branches: their footſtalks are ſlender, and about two inches long: the petals are white, waved at the borders, and generally five in number: they have a very agreeable odour, and are ſucceeded by ſmooth yellow berries, having four cells, filled with ſmall ſeeds, enveloped in a ſucculent pulp.—It grows in the woods of Cayenne, flowering in december and bearing fruit in february [e].

5. This is a ſmooth ſhrub. Leaves petioled ſmall quite entire veined, not marked with lines. Peduncles axillary, half as ſhort again as the leaves, ſilky. One bracte or two, oblong. Flowers ſmall, white. Calyxes ſilky. Capſule or berry ſmall, globular, toruloſe, crowned with the permanent calyx [f].

Gærtner deſcribes the fruit as a ſubglobular berry, obſoletely toruloſe, fleſhy, one-celled, crowned by the five-toothed calyx, ending below in a very long peduncle, near the baſe of the fruit, accompanied by two, linear-acuminate, oppoſite, minute ſtipules. Seeds placed in a ring in a double row; in the upper row eight, in the lower twelve or more, all oblong, on one ſide convex, thick, bowed; on the other ſtraight, compreſſed into a wedge-form angle: in other parts ſomewhat bony, and of a pale teſtaceous colour.

It differs from Guajava only in having all the ſeeds inverted, inſtead of being in every poſition; in their being ſtraightiſh and not kidney-form; and in there being no partition whatever.—Native of Otaheite, and the other Society Iſles.]

6. The common red Guava has a pretty thick trunk, twenty feet in height, covered with a ſmooth bark, and dividing into many angular branches towards the top. Leaves two inches and a half long, and

[a] Jacquin. [b] Loureiro and Jacquin. [c] Hort. kew. [d] Vahl. [e] Aublet. [f] Linn. ſuppl.

one inch and a half broad in the middle, rounded at both ends, having a ſtrong midrib and many veins running towards the ſides, of a light green colour, oppoſite on very ſhort foot-ſtalks. Peduncles axillary, an inch and half long. Petals large and white. Fruit ſhaped like a Pomegranate, crowned, when ripe having an agreeable odour.

[According to Jacquin it agrees in habit with the the firſt ſpecies, and differs principally in being of a paler colour both in the rind and pulp, and having an acid flavour or none at all. The form is the ſame. It is not ſo common; and is ſcarcely ever eaten. In Martinico it is called *Goyavier de Cayenne*; the firſt ſpecies *Goyavier du pays*.

Loureiro deſcribes it as a diſtorted and very branching ſhrub, four feet high. Leaves quite entire, ſmall, wrinkled, rugged, ſeſſile, oppoſite, with oblique, parallel ribs. Flowers white, ſmall, ſcattered, from one to three on longiſh peduncles. Berry an inch in diameter or leſs, ſubglobular, ſmooth, within white or red.

Native both of the Weſt and Eaſt Indies, China and Cochinchina in woods. In the latter countries, according to Loureiro, the fruit is eatable, but bad, neither taſte nor ſmell being pleaſant. The root and young leaves are aſtringent, and eſteemed uſeful in curing fluxes, and ſtrengthening the ſtomach.

Introduced here in 1692, by the Dutcheſs of Beaufort[a].

7. Native of Prince's iſland on the coaſt of Guinea, and cultivated in Domingo[b].

8. This is one of the largeſt trees in the woods of Jamaica, growing frequently to the height of ſixty or ſeventy feet, with a proportioned thickneſs: it is an excellent timber wood, of a dark colour and curled grain; works eaſily, and takes a fine poliſh. It makes very beautiful walking-ſticks[c].]

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds, which muſt be procured from the countries where they naturally grow; if theſe are brought over in the entire fruit, gathered full ripe, the ſeeds will more certainly ſucceed; theſe ſhould be ſown in pots filled with rich kitchen-garden earth, and plunged into a hot-bed of tanners-bark, giving them water from time to time as the earth dries; in about ſix weeks the plants will appear (if the ſeeds are good) and muſt have free air admitted to them in proportion to the warmth of the ſeaſon; when the plants have obtained ſtrength enough to be removed, they ſhould be each planted in a ſmall pot, filled with the like rich earth, and plunged into a freſh hot-bed, ſhading them from the ſun until they have taken new root; then they ſhould have a large ſhare of free air admitted to them every day in warm weather, to prevent their drawing up weak; they muſt alſo be frequently refreſhed with water in ſummer. When the plants have filled theſe ſmall pots with their roots, they ſhould be ſhaken out and their roots pared, then put into larger pots filled with the ſame ſort of earth, and plunged into the hot-bed again, where they ſhould remain till autumn, when they muſt be plunged into the tan-bed in the ſtove: during the winter they ſhould have a moderate warmth, and not too much water, and in ſummer they will require plenty of wet, and in hot weather a great ſhare of air; with this management the plants will produce flowers and fruit the third year, and may be continued a long time.

PSORALEA, (ψωραλεος, *ſcabioſus*; *the calyx and great part of the plant being dotted with tubercles.*)
Lin. gen. n. 894. *Reich. n.* 967. *Schreb. n.* 1210. *Roy. lugdb.* 372. *Gærtn. t.* 145. *Juſſ.* 355. Dalea *edit. prior.*

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

CAL. *Perianth* one-leaſed, dotted with tubercles, five-cleft: *ſegments* acute, equal, permanent; the loweſt double the length of the others.

COR. papilionaceous, five-petalled. *Standard* roundiſh, emarginate, riſing. *Wings* creſcent-ſhaped, blunt, ſmall. *Keel* two-petalled, creſcent-ſhaped, blunt.

STAM. *Filaments* diadelphous, (one ſingle and briſtle-ſhaped, nine united) aſcending. *Anthers* roundiſh.

PIST. *Germ* linear. *Style* awl-ſhaped, aſcending, the length of the ſtamens. *Stigma* blunt.

PER. *Legume* the length of the calyx, compreſſed, aſcending, acuminate.

SEED ſingle, kidney-form.

OBS. *It is ſingular in this genus, that the calyx, as alſo the whole plant, is dotted with tubercles, and the petals marked with coloured veins.*

ESSENTIAL CHARACTER.

Calyx beſprinkled with callous dots, the ſame length with the *Legume*, which has only one ſeed in it.

SPECIES.

[1. Pſoralea rotundifolia. *Round-leaved Pſoralea.*
Lin. ſyſt. 685. *ſuppl.* 338.
Leaves ſimple ovate quite entire, heads and bractes villoſe.]

2. Pſoralea pinnata. *Winged-leaved Pſoralea.*
Lin. ſpec. 1074. *ſyſt.* 685. *Reich.* 3. 540. *hort. upſ.* 225. *Berg. cap.* 218. *Weig. obſ.* 331.
Dorychnium caule fruticoſo, fol. pinnatis, foliolis linearibus. *Lin. hort. cliff.* 370.
Spartium africanum. *Rev. tetr.* 5.
Geniſtæ affinis arbor africana monoſpermos, flore cæruleo, fol. pinnatis. *Herm. lugdb.* 272. *t.* 273.
Leaves pinnate-linear, flowers axillary.

[3. Pſoralea aculeata. *Prickly Pſoralea.*
Lin. ſpec. 1074. *ſyſt.* 685. *Reich.* 3. 540. *mant.* 450.
Geniſta Spartium africanum trifolium, flor. cæruleis, fol. minimis in ſpinulam deſinentibus. *Raii dendr.* 104.
Leaves ternate, leaflets wedge-form recurved mucronate, flowers axillary ſolitary approximating.

4. Pſoralea bracteata. *Ovel-ſpiked Pſoralea.*
Lin. ſyſt. 685. *Reich.* 3. 541. *mant.* 264. *Berg. cap.* 224.
Ononis trifoliata. *Lin. ſyſt.* 2. 479.
Trifolium fruticans. *Lin. ſpec.* 1085. *hort. cliff.* 373. *Fabric. helmſt.* 2. 305. *Comm. hort.* 2. 211. *t.* 106.
Leaves ternate obovate recurve-mucronate, ſpikes ovate.

5. Pſoralea ſpicata. *Long-ſpiked Pſoralea.*
Lin. ſyſt. 685. *Reich.* 3. 541. *mant.* 264.
Leaves ternate oblong blunt, ſpikes cylindric.

6. Pſoralea anguſtifolia. *Narrow-leaved Pſoralea.*
L'Herit. ſtirp. nov. 2. *t.* 45. *Ait. kew.* 3. 79.
Leaves ternate linear, peduncles axillary ſolitary or trine few-flowered.

7. Pſoralea axillaris. *Axillary Pſoralea.*
Lin. ſyſt. 686. *ſuppl.* 338.
Leaves ternate, leaflets lanceolate, peduncles axillary, one-flowered.

8. Pſoralea Stachydis.
Lin. ſyſt. 686. *ſuppl.* 338.
Leaves ternate petioled, leaflets oblong mucronate, ſpikes terminating interrupted, calyxes villoſe.

9. Pſoralea aphylla. *Leafleſs Pſoralea.*
Lin. ſpec. 1074. *Reich.* 3. 542. *mant.* 450. *amoen.* 6. *afr.* 34.
P. decidua. *Berg. cap.* 220.
Geniſta Spartium cæruleum capitis bonæ ſpei. *Breyn. cent. t.* 25.
Leaves none, ſtipules mucronate very ſhort, ſubimbricate towards the flowers.

10. Pſoralea tenuifolia. *Fine-leaved Pſoralea.*
Lin. ſpec. 1074. *ſyſt.* 686. *Reich.* 3. 542.
Lower leaves ternate, upper ſimple lanceolate-ſubulate.

11. Pſoralea capitata. *Headed Pſoralea.*
Lin. ſyſt. 686. *ſuppl.* 339.
Leaves ternate and ſimple linear, head terminating.

12. Pſoralea hirta. *Hairy Pſoralea.*
Lin. ſpec. 1074. *ſyſt.* 686. *Reich.* 3. 542. *amoen.* 6. *afr.* 35.
Leaves ternate, leaflets obovate recurve-mucronate, flowers tern ſpiked, calyxes tomentoſe.

13. Pſoralea decumbens. *Trailing Pſoralea.*
Ait. kew. 3. 80.
Leaves ternate, leaflets wedge-lanceolate with a recurved point, flowers axillary.

14. Pſoralea

[a] Hort. kew. [b] Swartz. [c] Browne.

14. Pſoralea repens. *Creeping Pſoralea.*
Lin. ſyſt. 686. *Reich.* 3. 542. *mant.* 265. *Berg. cap.* 224.
Leaves ternate obovate emarginate, ſtem creeping, flowers ſubumbelled.]

15. Pſoralea bituminoſa. *Bituminous Pſoralea.*
Lin. ſpec. 1075. *ſyſt.* 686. *Reich.* 3. 543. *hort. upſ.* 225. *Gærtn. fruct.* 2. 308. *Berg. cap.* 221. *Fabric. helmſt.* 307. *Kniph. cent.* 2. *n.* 63. *Desfont. atlant.* 191. *Villars dauph.* 3. 476. *Allion. pedem. n.* 1262.
Trifolium capitulis ſubrotundis, calycibus ventricoſis, caule arboreſcente. *Lin. hort. cliff.* 373.
T. bitumen redolens. *Baub. pin.* 327. *Tournef. inſt.* 404. *Shaw ſpecim. n.* 599.
T. bituminoſum. *Dod. pempt.* 566. *Tabern. ic.* 519. *Ger.* 1019. *emac.* 1187. *Park. theat.* 716. *Raii hiſt.* 943. *Beſl. cyſt. æſtiv.* 10. *t.* 11. *f.* 1, 2. *Rivin. tetr. t.* 14.
T. aſphaltite. *Matth.* 834. *Camer. epit.* 581. *Dalech. hiſt.* 504.
T. aſphalteum. *Lob. ic.* 2. 30. *adv.* 380.
T. aſphaltites ſ. bituminoſum. *Baub. hiſt.* 2. 366.
β. T. bitumen redolens anguſtifolium. *Boerh. lugdb.* 2. 32.
Pſoralea anguſtifolia. *Mill. dict. n.* 9.
All the leaves ternate, leaflets lanceolate, petioles even, flowers in heads.

[16. Pſoralea glanduloſa. *Striped-flowered Pſoralea.*
Lin. ſpec. 1075. *ſyſt.* 686. *Reich.* 3. 543. *Gouan. illuſtr.* 50. *Arduin. ſpec.* 24. *t.* 8. *Regn. bot.*
Barbæ jovis triphylla, flore ex albo & cæruleo. *Feuill. peruv.* 7. *t.* 3.
All the leaves ternate, leaflets lanceolate, petioles rugged, flowers in ſpikes.

17. Pſoralea palæſtina. *Paleſtine or herbaceous Pſoralea.*
Lin. ſyſt. 686. *Reich.* 3. 543. *Jacqu. hort.* 2. 86. *t.* 184. *Gouan illuſtr.* 51.
All the leaves ternate, leaflets ovate, petioles pubeſcent, flowers in heads.

18. Pſoralea americana. *American Pſoralea.*
Lin. ſpec. 1075. *ſyſt.* 686. *Reich.* 3. 544.
Trifolium americanum. *Lob. ic.* 2. 31. *Dod. pempt.* 567. *Baub. pin.* 327. *Park. theat.* 717. *f.* 4.
Leaves ternate, leaflets ovate tooth-angular, ſpikes lateral.

19. Pſoralea tetragonoloba.
Lin. ſyſt. 686. *Reich.* 3. 544. *mant.* 104.
Leaves ternate toothed, ſtem flexuoſe, ſpikes lateral, legumes ſtrict quadrangular.]

20. Pſoralea coryli folia. *Hazel nut-leaved Pſoralea.*
Lin. ſpec. 1075. *Reich.* 3. 545. *hort. upſ.* 225. *Burm. ind. t.* 49. *f.* 2. *Juſſieu act.* 1744. *p.* 382. *Vahl ſymb.* 1. 65.
Loto affinis coryli folio. *Dodart act.* 4. *t.* 289. *Pluk. phyt. t.* 96. *f.* 5.
Leaves ſimple ovate ſomewhat toothed, ſpikes ovate.

[21. Pſoralea pentaphylla. *Five-leaved Pſoralea.*
Lin. ſpec. 1076. *ſyſt.* 686. *Reich.* 3. 545. *hort. upſ.* 225. *Juſſieu act.* 1744. *p.* 381. *t.* 17.
Leaves digitate-quinate, leaflets unequal.

22. Pſoralea proſtrata. *Proſtrate Pſoralea.*
Lin. ſpec. 1076. *Reich.* 3. 545. *amoen.* 6. *afr.* 36.
Leaves ſuperdecompound digitate linear.]

23. Pſoralea Dalea. *Annual Pſoralea.*
Lin. ſpec. 1076. *Reich.* 3. 545.
P. annua. *Mill. dict. n.* 6.
Dalea. *Lin. hort. cliff.* 363. *t.* 22.
Barba Jovis amer. annua humilis ramoſiſſima, flor. cæruleis ſpicatis. *Houſt. MSS.*
Leaves pinnate, ſpikes cylindrical terminating.

[24. Pſoralea enneaphylla. *Nine-leaved Pſoralea.*
Lin. ſpec. 1076. *ſyſt.* 686. *Reich.* 3. 545. *mant.* 450. *Fabric. helmſt.* 308. *Jacqu. amer. pict.* 101.
P. carthaginenſis. *Jacqu. amer.* 206.
Leaves pinnate, ſpikes axillary.

25. Pſoralea lævigata. *Poliſhed Pſoralea.*
Lin. ſyſt. 687. *ſuppl.* 339.
Leaves pinnate, ſtipules ſolid ſubacute very minute.

26. Pſoralea leporina. *Downy-ſpiked Pſoralea.*
Ait. kew. 3. 81.

P. Lagopus. *Cavan. hiſp.* 59. *n.* 94. *t.* 86.
Leaves pinnate oblong-linear very numerous, ſpikes without bractes villoſe lanceolate.

27. Pſoralea folioloſa. *Leafy Pſoralea.*
Ait. kew. 3. 82.
Leaves pinnate oblong numerous, ſpikes terminating bracted globular-ovate, calyxes compreſſed.

28. Pſoralea reclinata. *Reclining Pſoralea.*
Cavan. hiſp. 60. *n.* 95. *t.* 87.
Stem procumbent, leaves pinnate, flowers in cloſe ſpikes, keel longer than the other petals.]

Species from Miller.

29. Pſoralea hirta.
Mill. dict. n. 2.
Barba Jovis americana fruteſcens, foliis ſubrotundis, floribus ſpicatis purpureis. *Houſt. MSS.*
Leaves ternate, leaflets ovate, ſtem ſhrubby hairy, flowers in terminating ſpikes.

30. Pſoralea procumbens.
Mill. dict. n. 3.
Barba Jovis malabarica annua procumbens argentea, floribus minimis purpureis, *edit. prior.*
Leaves pinnate ſilvery, ſtems procumbent, flowers axillary.

31. Pſoralea ſcandens. *Climbing Pſoralea.*
Mill. dict. n. 4.
Barba Jovis americana ſcandens, flor. cæruleis ad alas foliorum conglomeratis. *Houſt. MSS.*
Leaves pinnate, ſtem branched climbing, flowers axillary ſeſſile.

32. Pſoralea capitata. *Headed Pſoralea.*
Mill. dict. n. 5.
Barba Jovis amer. fruteſcens hirſuta, flor. cæruleis conglomeratis. *Houſt. MSS.*
Leaves ternate, ſtem very branching ſhrubby, flowers in heads peduncled axillary.

33. Pſoralea humilis. *Humble Pſoralea.*
Mill. dict. n. 7.
Barba Jovis amer. humilis rotundifolia & villoſa, flore vario. *Houſt. MSS.*
Leaves pinnate with rounder villoſe leaflets, flowers in axillary and terminating heads, ſtem ſhrubby.

DESCRIPTIONS, *&c.*

[1. Native of the Cape of Good Hope; found there by Thunberg[d].]

2. This riſes with a ſoft ſhrubby ſtalk, four or five feet high, dividing into ſeveral branches. Leaves of a deep green colour, compoſed of three or four pairs of very narrow leaflets, terminated by an odd one, ſtanding upon ſhort foot-ſtalks, and coming out without order on every ſide of the branches. The flowers ſit very cloſe to the branches, and are often in cluſters: the ſtandard, which is erect and reflexed at the top, is of a fine blue; the wings are pale, and the keel white.

[According to the obſervation of Linneus; the peduncles are axillary, ſolitary, glumeleſs and hirſute.]

It flowers during great part of the ſummer, and the ſeeds ripen in autumn. It grows naturally at the Cape of Good Hope; whence Mr. Miller frequently received the ſeeds: but it was cultivated in 1690, in the Royal Garden at Hampton Court[e].

3. This is a ſhrub with angular branches, and lateral ſolitary flowers without bractes.

Native of the Cape of Good Hope, by ditches[f]. Introduced in 1774, by Mr. Francis Maſſon. It flowers in june and july[g].

4. Stem ſhrubby, determinately branched, with round pubeſcent branches. Leaves ſeſſile: leaflets even, dotted, pointed at the end with a patulous ſpine. Stipules chaffy, lanceolate, acuminate, ciliate. Spikes terminating, ſolitary, ſubvilloſe, peduncled. Flowers ſeparated by ovate acuminate ciliate bractes, almoſt the length of the flowers. Corolla violet-coloured, with a white keel having a violet ſpot in front. Calyxes hairy, with linear teeth; except the loweſt tooth, which is ovate and larger.

[d] Linn. ſuppl. [e] Hort. kew. [f] Linn. mant. [g] Hort. kew.

Native of the Cape of Good Hope [b]. Cultivated in 1731, by Mr. Miller. It flowers in june and july [i].

5. Stem ſhrubby, with alternate round erect pubeſcent branches. Leaves on very ſhort petioles. Leaflets dotted, obſoletely pubeſcent, ſometimes having a minute weak point; the middle one longer than the other two. Stipules narrow, ſcarcely longer than the petiole. Spikes longer, ſeſſile, ſolitary. Flowers blue, ſeparated by linear ſcarioſe bractes, ſcarcely the length of the calyx. Calyxes pubeſcent, with ſhort, almoſt equal, awl-ſhaped, blunt teeth.

Native of the Cape of Good Hope [k]. Introduced in 1774, by Mr. Francis Maſſon. It flowers in july [l].

6. Native of the Cape of Good Hope, where it was found by Mr. Maſſon, and introduced in 1774. It flowers from may to auguſt [m].

7. This is ſingular with its filiform one-flowered peduncles.—Native of the Cape of Good Hope, where it was found by Thunberg.

8. Stem hirſute. Calyx brown, extremely villoſe. Corolla ferruginous.—Native of the Cape of Good Hope [n].

9. This is a ſhrub with lateral ſubterminating flowers. Leaves linear-lanceolate, deciduous.—Native of the Cape of Good Hope [o].

10. Peduncles axillary, ſolitary, glumoſe. In others the peduncles are lateral, cluſtered and capillary, the length of the leaves. Bractes two, briſtle-ſhaped, in the middle of the peduncle.—Native of the Cape of Good Hope [p].

11. Branches ſtriated. Leaves petioled, a finger's length, with ſcarcely conſpicuous dots very cloſely cluſtered ſcattered over them on both ſides: the uppermoſt ſimple. Head of flowers roundiſh, ſurrounded commonly with three ſimple linear leaves. Standard dotted like the leaves.

Native of the Cape of Good Hope, where it was found by Thunberg [q].

12. This is a ſhrub, with rough-haired rigid branches. Leaves petioled: leaflets ſubpetioled, ſubpubeſcent. Flowers at the ends of the branches: calyxes pubeſcent; corollas violet-coloured.—Native of the Cape of Good Hope [r].

Cultivated in 1713, by the Dutcheſs of Beaufort. It flowers moſt part of the ſummer [s].

13. Native of the Cape of Good Hope, where it was found by Mr. Francis Maſſon, who introduced it in 1774. It flowers in april and may [t].

14. Stems rooting, ſomewhat woody, much branching and very long. Leaves petioled: leaflets obovate, dotted, blunt, naked, ſeſſile: petioles the length of the leaflets. Stipules minute, ovate, acute. Umbels ſeſſile, unequal, lateral and terminating. Flowers blue.—Native of the Cape of Good Hope [u].

15. Root perennial, but the ſtalk not of long duration, ſeldom laſting more than two years: it riſes about two feet high, ſending out two or three ſlender branches. Leaflets about two inches long, and one inch and a quarter broad, on long foot-ſtalks. The leaves, if handled, emit a ſtrong ſcent of bitumen. The heads of flowers are on axillary peduncles ſeven or eight inches long. The corollas are blue.

[Stem ſuffruticoſe. Spikes roundiſh. The tenth ſtamen diſtinct, as in *P. glandulosa* and *americana*. It varies with lanceolate and ovate leaves [x].

Calyx ſtriated, with the ſegments acuminate, of the ſame length with the corolla. Standard oblong, purple; wings ſhorter, diſtant, almoſt white; keel yet ſhorter, bifid, purple at top. The flowers ſmell like Black Currants.

Legume ſmall, with an ovate belly ending in a long acuminate beak; the lower part the length of the tube of the calyx, compreſſed like a lens; above hiſpid with rigid diverging briſtles, below ſprinkled with brown-cheſtnut dots on an ochre ground; very thin, adhering ſo cloſe to the ſeed, that it cannot be

[b] Linn. mant. & ſyſt.
[i] Hort. kew.
[k] Linn. mant. & ſyſt.
[l] Hort. kew.
[m] Idem.
[n] Linn. ſuppl.
[o] Linn. ſpec. & ſyſt.
[p] Linn. ſuppl.
[q] Linn. amoen. & ſyſt.
[r] Hort. kew.
[s] Idem.
[t] Linn. mant.
[u] Linn.

ſeparated but by ſcraping it off: beak half as long again as the belly, membranaceous, compreſſed like a leaf, ſabre-ſhaped, ſtraw-coloured, apt to fall off. Seed obovate-reniform, lenticular, ſmooth, dark-coloured and ſhining [y].

Native of Italy, Sicily, the South of France and Barbary.—It was cultivated here in 1570, as appears from Lobel; and flowers moſt part of the ſummer [z]. Gerarde ſays, in Engliſh it is called *Clover gentle*, *Pitch Trefoil*, *ſtinking Trefoil*, and *Treacle Clover*.]

β. The leaves of this are much longer and narrower, and are rounded at their baſe; the ſtalks are ſhrubby, and of longer duration; the heads of flowers are ſmaller, and the leaves have not ſo ſtrong an odour.

It grows naturally in Sicily, and alſo in Jamaica, from both which countries Mr. Miller received the ſeeds; from which he propagated this and the preceding many years, and never found them to vary.

[16. Stem ſuffruticoſe. It reſembles *P. americana*; but the elongated ſpikes are almoſt racemed, with very ſmall bractes, not the length of the calyx. It has the ſmell of Rue [a].

The two inner leaflets are leſs and ſubſeſſile, the end one is larger on a long petiole. The common petiole is a little longer than the larger leaflet; that and both ſurfaces of the leaves have glands ſcattered over them. Stipules very ſmall, briſtle-ſhaped. On the lower leaves the leaflets are blunt; but on the upper ones they are acute, narrower and a little longer. Peduncles equal to the leaves or a little longer, full of glands. Flowers from twelve to twenty-ſix, ſome alternate, others two or three together, on very ſhort pedicels. Calyxes glandular, twice as big as in *P. coryliſolia*, and only half the ſize of thoſe in *P. bituminoſa*. Corollas ſmall, with the wings and keel white, and the ſtandard blue. Bractes none; but the pedicels ſupported on a little prominent callus [b].

Native of Peru, Spain and the iſlands of Majorca and Minorca.—Introduced about 1770. It flowers from may to auguſt [c].

17. Stem herbaceous, leaves hairy. Petioles with many ſtreaks. Stipules patulous. Heads depreſſed. Bractes aſh-coloured. Flowers violet-coloured, large [d].

Stem flexuoſe, two feet high, ſtriated, with joints an inch from each other, hairy, hoary-aſh-coloured. Branches ſhort, ſpreading. Leaflets of the lower leaves ſuborbicular, eſpecially the odd one, and ſomewhat hiſpid; thoſe of the upper leaves lanceolate, acuminate at both ends: petioles from an inch to an inch and half in length, more hoary with hairs towards the top. Stipules ſetaceous-ſubulate, hirſute, longer and narrower than in *P. bituminoſa*, although the plant itſelf be ſmaller. Peduncles twice as long as the leaves, rigid, hirſute. Flowers from nine to twelve in a head. Bractes ovate, concave, palmate-trifid, acuminate. Calyxes five-cleft to the middle, ventricoſe, and more widened than in *P. bituminoſa*. Corollas blue. Legume ovate, hirſute, ſhorter than the calyx, terminated by a long ſtraight enſiform dagger-point, exceeding the calyx [e].

Native of the Levant. Introduced in 1771, by Joſeph Nicholas de Jacquin, M. D. It flowers moſt part of the ſummer [f].

18. Stems diffuſed, herbaceous, with glandular dots ſcattered over them. Leaflets roundiſh, very blunt, obſoletely toothed or angular, ſprinkled with glandular dots; the middle one larger and petioled. Spikes axillary, oblong, on peduncles the length of the leaves [g].

Native of Madeira. Cultivated here in 1640, as appears from Parkinſon [h], who ſays, that becauſe it flowers late, it often miſſes to give good ſeed, whereby we are often to ſeek for it again. Linnæus relates that he had not ſeen it in the European gardens.

19. Stem herbaceous, erect, flexuoſe, angular, the thickneſs of a quill. Leaves the ſize of Melilot or

[y] Gaertner.
[z] Hort. kew.
[a] Linn. ſpec. & ſyſt.
[b] Govan.
[c] Hort. kew.
[d] Linn. ſyſt.
[e] Govan.
[f] Hort. kew.
[g] Linn. ſpec.
[h] Hort. kew.

larger: leaflets ovate, acuminate, thinly and deeply ſerrate, or ſlightly toothed, ſcarcely pubeſcent on both ſides; the odd leaflet petioled. Stipules briſtle-ſhaped. Racemes axillary, erect, peduncled, the length of the leaves. Bractes briſtle-ſhaped, commonly longer than the flower. Flowers alternate, on very ſhort pedicels, a little larger than thoſe of *Indigofera*, having an acute keel without the lateral horns of that plant. Legumes large, the length of the leaves, compreſſed, with each ſuture membranaceous-angular on both ſides, terminating in an elongated point. Seeds four or five. Perhaps it may be a ſpecies of *Indigofera*. Found in Arabia by Forſkahl, and at Suratte by Brad[t].]

20. This is an annual plant. The ſtalks riſe two feet high, and have at each joint one leaf about two inches long, and an inch and a half broad, having one ſtrong midrib, from which come out ſeveral veins, that run towards the top of the leaf. The flowers are produced on long ſlender axillary peduncles, are collected into ſmall round heads, and are of a pale fleſh colour. It grows naturally in India, and flowers here in july; the ſeeds ripen in autumn. [It was cultivated in 1752 by Mr. Miller[x].

The upper leaves are ſometimes ternate, both in Forſkahl's and Koenig's ſpecimens. And in the plants that roſe from Koenig's ſeeds, ſome had ſimple leaves only, others had both them and ternate leaves[t].

21. Little is known of this ſpecies; nor is it certain whether it be a native of Mexico or Malabar.

22. This recedes in habit from the other ſpecies. Stems decumbent, filiform. Stipules erect. The middle leaflet is trifid; the partial ones pinnate; the leaflets linear; the peduncles axillary, the racemes roundiſh, and the flowers yellow[u].—Native of the Cape of Good Hope.]

23. This is an annual plant, with a very branching herbaceous ſtalk, riſing a foot and half high, ſpreading wide on every ſide. Leaves compoſed of five or ſix pairs of narrow wedge-ſhaped leaflets, terminated by an odd one. The flowers are collected in cloſe oblong ſpikes at the ends of the branches; they are ſmall and of a bright blue colour. Diſcovered by Dr. Houſtoun at Vera Cruz in New Spain.

[Linneus remarks that the leaflets have glandular dots ſcattered over them underneath; and that the ſpike of flowers is cloſe, as in Plantain.

Cultivated by Mr. Miller before 1733.

24. This is an upright ſlender ſhrub, five feet high, with few pliant branches. Leaves alternate, one or two inches long: leaflets at moſt five, obovate or oval, emarginate, ſmooth, petioled, oppoſite, four or five lines long, with little bags on the back that appear like dots, as in *Hypericum perforatum*, containing a gummy juice of an unpleaſant ſmell: if rubbed, they ſtain the fingers of a yellow colour, which can hardly be waſhed out, and tinge water of a very beautiful clear yellow, gradually becoming deeper. Spikes denſe, ſolitary, on ſhort peduncles almoſt the length of the leaves. Flowers ſmall, red, ſeſſile, with the calyx not dotted. All the ten filaments are united. This plant ſeems nearly to unite Pſoralea with Ebenus.

Native of New Spain, about Carthagena, in coppices; flowering in may and the following months[x].

Introduced in 1772, by Monſ. Richard[y]. In the Kew catalogue it is ſaid to be an annual, a native of the Weſt Indies, and to flower here in july and auguſt.

25. This is a ſhrub with even ſtriated purple branches. Leaflets lanceolate, even, ſeven, ſcarce apparently dotted underneath. Stipules none, but a ſcarcely viſible ſharpiſh tubercle on each ſide inſtead of it. Flowers purple, not ſtriated. Pollen golden ſhining. It differs from *P. pinnata* in having the leaves not half a palm in length, linear, acuminate, pubeſcent, dark-ſpotted; the ſtipules not chaffy; the branches not pubeſcent; the calyxes not brown; the corollas not ſtriated.

Native of the Cape of Good Hope, where it was found by Thunberg[z].

[t] Linn. mant. [x] Hort. kew. [y] Vahl.
[u] Linn. amoen. [x] Jacquin. [z] Hort. kew.
[y] Linn. ſuppl.

26. Root annual. Stem ſmooth, ſtriated. Leaves ſcattered unequally pinnate. A ſingle leaf has often thirty pairs of leaflets, on very ſhort pedicels, quite entire, bluntiſh with a ſhort point, ſmooth, dotted underneath, ſcarcely half an inch in length. Spikes axillary, ſolitary, cylindrical, ſcarcely two inches long; on peduncles a finger's length, having frequently a ſmall pinnate leaf on them. Calyx rough with long villoſe hairs, three lines in length. Corolla blue with a white baſe: ſtandard ovate, entire; wings ovate, a little longer; keel of the ſame length with the wings: claws of all the petals filiform, a little ſhorter than the calyx, ſubconnate. Filaments united into a ſheath, cloven above, and longer than the calyx. Germ ovate, compreſſed a little, bearded at top with long villoſe hairs. Style on one ſide of the germ, erect, filiform, a little longer than the ſtamens. Legume turbinate-roundiſh, compreſſed, membranaceous, pellucid, a line in diameter, ſomewhat hairy. Seed ſmooth, brown-aſh-coloured[t].

Cavanilles's deſcription of his *P. Lagopus* agrees with the above ſo exactly, that there can be no doubt of their being the ſame plant.

The ſtems, according to him, are four feet high, with branches ſcattered alternately. Leaves alternate, with from thirty-three to thirty-ſeven pinnules, which are ovate-oblong: common petioles round, turgid at the baſe. Stipules inſerted into the petiole, very ſhort, awl-ſhaped, brown, deciduous. Flowers in very cloſe terminating ſpikes. Calyx turbinate, ſmooth at bottom, half-five-cleft; ſegments awl-ſhaped, dotted with brown, hairy. Corolla violet-coloured, with the petals approximating: ſtandard concave, with a long capillary claw; wings and keel, as four ovate petals, faſtened, not to the bottom of the calyx, but to the tube of ſtamens, by ſhort claws. Tube of the ſtamens whitiſh, ſurrounding the germ at the baſe, afterwards ſupporting the wings and keel, finally ending in ten ſtraight filaments. Legume very ſmall, ovate-reniform.

Native of Mexico. Its common name is *Terciopelillo*. Cavanilles ſaw it in flower, in the royal garden near Madrid in november[t].—It was introduced here by Benjamin Bewick, Eſq. in 1780, and flowers in october and november[t].

27. Stem round, ſmooth, having ferruginous glands ſcattered over it, branched. Leaves ſcattered, unequally pinnate. Each leaf has from ten to fourteen pairs of leaflets, on very ſhort petioles, oblong, acute, ſmooth, two lines in length. Spikes many-flowered, ſcarcely half an inch in length. Under each flower is an ovate concave bracte, the length of the calyx; which is pitcher-ſhaped, compreſſed, ſomewhat villoſe, two lines long. Corolla purple, pale at the baſe: ſtandard roundiſh, acute; wings oblong, longer than the ſtandard; keel the length of the wings. Filaments united into a ſheath cloven at top. Germ ovate, compreſſed, pubeſcent. Style filiform, longer than the ſtamens. Legume roundiſh, obliquely acuminate, compreſſed, pubeſcent. Seed compreſſed. It is an annual plant; and was introduced in 1786, by Benjamin Bewick, Eſq. but from what country is unknown. It flowers in october and november[t].

28. Stems round, hardiſh, branched, annual, ſcarcely a foot in length. Leaves ſcattered, unequally pinnate, with from ſeven to thirteen pinnules, which are ſubſeſſile, lanceolate, glaucous underneath, ſparingly villoſe, with brown protuberant dots. Stipules faſtened to the petiole, villoſe, briſtle-ſhaped. Spike of flowers an inch long, very villoſe; each flower ſeſſile, ſupported by a bracte which from bowed becomes erect, villoſe, variegated with brown dots. Calyx very ſmall, tubular, half-five-cleft; ſegments awl-ſhaped, hairy, dotted. Corolla pale violet, a little longer than the calyx: ſtandard ovate, plaited, with a white ſpot on each ſide, near the capillary claw; wings ovate, creſcent-ſhaped below, ſhorter than the ſtandard; keel longer than the ſtandard, two-petalled, ovate. Filaments all united; anthers roundiſh, brown. Germ

[t] Hort. kew. [t] Cavan. hiſp. [t] Hort. kew.
[t] Idem.

ovate,

ovate, villose at top. It is distinguished from the other species by the keel being longer than the petals.

Native of Mexico. Introduced into the royal garden near Madrid[a].]

29. Stem three or four feet high, sending out a few side branches. Leaflets hairy, on slender foot-stalks. Corollas purplish. Discovered by Dr. Houstoun at Vera Cruz, and cultivated by Mr. Miller before 1733.

30. This is an annual plant with trailing stalks about eight inches long. Leaflets three or four pairs besides the odd one, narrow, silvery. Flowers small, purple, in small clusters.—Native of Malabar.

31. Stems slender, shrubby, climbing to the height of six or seven feet. Leaflets three pairs besides the odd one, small, ovate, obtuse. Flowers small, bright blue, in small clusters. Discovered by Dr. Houstoun at Campeachy.

32. Stem seven or eight feet high, sending out many long slender branches on every side. Leaflets small and wedge-shaped. Flowers in small close heads, on pretty long peduncles. Corollas blue. Discovered by Dr. Houstoun at Campeachy.

33. This has an upright stem five or six feet high, with a few side branches. Leaflets three or four pairs, small, roundish, hairy. Flowers yellow and red intermixed, in small heads. Found by Dr. Houstoun at Vera Cruz.

PROPAGATION AND CULTURE.

2. This is easily propagated by seeds sown upon a moderate hot-bed. When the plants come up, they should have much air, and little heat. When of a size to remove, plant them in separate small pots, filled with light earth. Plunge them into the bed, shade them from the sun till they have taken new root, and gradually inure them to the open air; into which remove them about the end of may, and keep them abroad till october; then place them in the greenhouse. It may also be increased by cuttings, planted during any of the summer months, on a bed of light earth, covering them close with bell or hand-glasses, shading them, and gently refreshing them with water as the ground dries: when they have taken root, harden them gradually, transplant them into small pots, and treat them like the seedling plants.

15. This is also propagated by seeds, which should be sown on a bed of light earth in april: in may the plants will come up, when they should be kept clean from weeds, and as soon as they are fit to remove, transplant them. It will live through a favourable winter, in a warm dry border; but it is generally sheltered in a green-house or glass case.

20. Sow the seeds upon a hot-bed in the spring: when the plants are fit to remove, plant them in separate small pots filled with light earth, plunge them into a moderate hod-bed of tanner's bark, and shade them till they have taken new root; after which admit air to them freely in warm weather, and water them gently as often as they require it. When the plants have filled the pots with their roots, remove them into larger, and at the beginning of july remove them into an airy glass case, where they may be defended from cold, but have free air in warm weather; with this care the plants will flower and ripen their seeds.

23. 24. 26. 27. 28. 29 to 33. Sow the seeds on a hot-bed, and treat them, when they come up, in the same way as other plants from hot countries. Keep those sorts which are perennial in a moderate warmth in the stove during winter, in summer giving them a good share of free air. Some of them will sometimes ripen their seeds in England.

[1 to 14. 22. 25. Being natives of the Cape require only the protection of a greenhouse or glass case. They may be increased by seeds or cuttings, and should be treated as directed for n. 2.

PSYCHOTRIA. (*Altered by Linneus from* Psychotrophum, *the name which was given it by Browne, from* ψυχτριφον, *the name of an herb in Dioscorides, so called from its delighting to grow in cold situations.*)

[a] Cavanilles.

Lin. gen. n. 229. *Reich. n.* 246. *Schreb. n.* 313. *Juss.* 204. Psychotrophum. *Brown. jam. t.* 17. *f.* 2. *Jacqu. amer.* 65. *Gærtn. t.* 25.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Stellatæ. Rubiaceæ*, Juss.

GENERIC CHARACTER.

CAL. *Perianth* very small, five-toothed, superior, permanent.

COR. monopetalous, salver-shaped (or funnel-shaped): *tube* long: *border* short, five-cleft: *segments* subovate, acute.

STAM. *Filaments* five, capillary. *Anthers* linear, not exceeding the tube.

PIST. *Germ* inferior. *Style* filiform. *Stigma* bifid, with the segments thickish, blunt.

PER. *Berry* roundish, (ovate or oblong) one-celled (two-celled, *G.*) crowned with the calyx.

SEEDS two, hemispherical (or oblong,) on one side convex and five-grooved, on the other flat.

ESSENTIAL CHARACTER.

Cal. five-toothed, crowning. *Cor.* tubular. *Berry* globular. *Seeds* two, hemispherical, grooved.

SPECIES.

1. Psychotria asiatica.
   Lin. spec. 245. *Syst.* 214. *Reich.* 1. 477. *Willd.* 961. *amoen.* 5. 395. *Swartz obs.* 74. *Gærtn. fruct.* 1. 120. *Brown. jam.* 160. *t.* 17. *f.* 2. *fec. Gærtn. v. n.* 8.
   Stipules emarginate, leaves lanceolate-ovate.
2. Psychotria glabrata.
   Lin. spec. ed. Willd. 962. *Swartz prodr.* 43. *descr.* 390.
   Stipules acute undivided deciduous, leaves ovate very smooth shining, flowers panicled erect.
3. Psychotria axillaris.
   Lin. spec. ed. Willd. 962.
   Ronabea latifolia. *Aubl. guian.* 1. 154. *t.* 59.
   β. Ronabea erecta. *Aubl. guian.* 1. 156.
   Stipules acute undivided, leaves ovate acute, flowers axillary.
4. Psychotria laurifolia.
   Lin. spec. ed. Willd. 962. *Swartz prodr.* 43. *descr.* 392.
   Stipules ovate acuminate deciduous, leaves lanceolate-ovate acute thickish smooth, panicles erect, berries roundish.
5. Psychotria parviflora.
   Lin. spec. ed. Willd. 962.
   Simira tinctoria. *Aubl. guian.* 1. 170. *t.* 65.
   Stipules ovate cuspidate deciduous, leaves elliptic-ovate acuminate parallel-veined, panicles erect, berries oval.
6. Psychotria hirsuta.
   Lin. spec. ed. Willd. 963. *Swartz prodr.* 42. *descr.* 394.
   Stipules lanceolate entire deciduous, leaves lanceolate-ovate acute rough-haired, stem extremely hirsute, panicle spreading.
7. Psychotria foetens.
   Lin. spec. ed. Willd. 963. *Swartz prodr.* 43. *descr.* 396.
   Stipules acuminate entire deciduous, leaves lanceolate-ovate acute smooth, panicle spreading very much, branches reflex filiform.
8. Psychotria citrifolia.
   Lin. spec. ed. Willd. 963. *Swartz prodr.* 43. *descr.* 398. *Brown. jam.* 160. *t.* 17. *f.* 2. *fec. Swartz.*
   Stipules ovate permanent, leaves elliptic acuminate subcoriaceous, panicles short, berries oblong ribbed.
9. Psychotria nitida.
   Lin. spec. ed. Willd. 963.
   Mapouria guianensis. *Aubl. guian.* 1. 175. *t.* 67.
   Stipules roundish deciduous, leaves roundish-ovate acuminate, panicle terminating, border of the corolla longer than the tube.
10. Psychotria marginata.
    Lin. spec. ed. Willd. 963. *Swartz prodr.* 43. *descr.* 400.
    Psychotrophum fruticosum, fol. plumbeis ovato-acuminatis, floribus laxe racemosis. *Brown. jam.* 161. *n.* 6.

Stipules entire acuminate deciduous, leaves lanceolate-ovate acute, cartilaginous-briſtly at the end, panicle looſe.

11. Pſychotria tenuiſolia.
Lin. ſpec. ed. Willd. 964. *Swartz prodr.* 43. *deſcr.* 402.
Stipules ovate emarginate deciduous, leaves oblong acute very thin ſmooth, panicles erect ſubſeſſile.

12. Pſychotria nervoſa.
Lin. ſpec. ed. Willd. 964. *Swartz prodr.* 43. *deſcr.* 403.
Stipules oblong emarginate deciduous, leaves ovate acuminate at both ends nerved ſomewhat waved, panicles ſeſſile almoſt erect.

13. Pſychotria carthaginenſis.
Lin. ſpec. ed. Willd. 964. *Jacqu. amer.* 65. *t.* 174. *f.* 22. *pict.* 37. *t.* 260. *f.* 19.
Stipules emarginate, leaves obovate acuminate, panicle terminating.

14. Pſychotria Myrſtiphyllum.
Lin. ſpec. ed. Willd. 964. *Swartz prodr.* 44. *deſcr.* 405.
Myrſtiphyllum minus fruticoſum, fol. ovato-acuminatis nitidis ſubrigidis oppoſitis. *Brown. jam.* 152.
Myrti folio arbor, &c. *Sloan. jam.* 2. 102. *Raii dendr.* 66.
Stipules ovate deciduous, leaves lanceolate-ovate nerveleſs ſhining rigid, branches directed one way, racemes compound terminating.

15. Pſychotria laxa.
Lin. ſpec. ed. Willd. 965. *Swartz deſcr.* 407.
Stipules ovate acute deciduous, leaves ovate acuminate, racemes in threes, terminating trichotomous, branches and pedicels ſubcapillary looſe.

16. Pſychotria paraſitica.
Lin. ſpec. ed. Willd. 965. *Swartz prodr.* 44. *deſcr.* 408.
Viſcoides pendulum. *Jacqu. amer.* 73. *t.* 51. *f.* 1.
Stipules embracing retuſe, leaves ovate acuminate veinleſs ſomewhat ſucculent, racemes terminating or axillary compound.

17. Pſychotria horizontalis.
Lin. ſpec. ed. Willd. 965. *Swartz prodr.* 44. *deſcr.* 410.
Stipules ovate, leaves lanceolate-ovate acute, branches leaves and branchlets of the panicles horizontal.

18. Pſychotria nutans.
Lin. ſpec. ed. Willd. 965. *Swartz prodr.* 43. *deſcr.* 411.
Stipules two-toothed, leaves lanceolate acute nerved, racemes three-parted erect, in their fruiting ſtate nodding.

19. Pſychotria ſpecioſa.
Lin. ſpec. ed. Willd. 965. *Forſt. prodr. n.* 89.
Arboreous, leaves oblong-lanceolate, involucre terminating ſubtriflorous.

20. Pſychotria involucrata.
Lin. ſpec. ed. Willd. 965. *Swartz deſcr.* 413.
Nonatella officinalis. *Aubl. guian.* 1. 182. *t.* 70. *f.* 1.
Stipules two-toothed, leaves lanceolate-ovate ſhining, racemes terminating corymbed, pedicels three-flowered, flowers involucred.

21. Pſychotria flexuoſa.
Lin. ſpec. ed. Willd. 966.
Nonatella paniculata. *Aubl. guian.* 1. 184. *t.* 70. *f.* 2.
Stipules two-toothed, leaves ovate attenuated to both ends, panicle divaricating flexuoſe.

22. Pſychotria racemoſa.
Lin. ſpec. ed. Willd. 966.
Nonatella racemoſa. *Aubl. guian.* 1. 186. *t.* 72.
Stipules two-lobed, leaves oblong acuminate, raceme terminating ſimple, flowers involucred.

23. Pſychotria violacea.
Lin. ſpec. ed. Willd. 966.
Nonatella violacea. *Aubl. guian.* 1. 188. *t.* 73.
Stipules oblong blunt deciduous, leaves oblong acuminate, flowers panicle-corymbed involucred.

24. Pſychotria brachiata.
Lin. ſpec. ed. Willd. 966. *Swartz prodr.* 45. *deſcr.* 415.
Stipules ovate bifid, raceme terminating compound, branches brachiate, flowers aggregate ſeſſile.

25. Pſychotria grandis.
Lin. ſpec. ed. Willd. 966. *Swartz prodr.* 43. *deſcr.* 417.
Stipules deltoid revolute at the edge awl-ſhaped at the tip, leaves cuneiform-obovate, ſtem angular.

26. Pſychotria patens.
Lin. ſpec. ed. Willd. 967. *Swartz prodr.* 45. *deſcr.* 419.
Stipules two-toothed, leaves diſtich lanceolate-ovate membranaceous, branches ſpreading, panicles directed one way.

27. Pſychotria uliginoſa.
Lin. ſpec. ed. Willd. 967. *Swartz prodr.* 43. *deſcr.* 421.
Pſychotrophum fruticoſum fol. venoſis ovatis oppoſitis, petiolis ſtipulatis, racemis terminalibus, baccis compreſſis. *Brown. jam.* 160. *n.* 1?
Stipules connate acute convex, leaves lanceolate-oblong, ſeeds compreſſed creſted, ſtem ſubherbaceous ſimple erect.

28. Pſychotria ſerpens.
Lin. ſyſt. 214. *Reich.* 1. 477. *Willd.* 967. *mant.* 204.
Stem ſubherbaceous creeping, leaves ovate acute at both ends.

29. Pſychotria herbacea.
Lin. ſpec. 245. *ſyſt.* 214. *Reich.* 1. 478. *Willd.* 967. *Jacqu. amer.* 66. *t.* 46. *pict.* 37. *t.* 67. *Swartz obſ.* 74.
Pſychotrophum herbaceum repens ſylvaticum, fol. ſubrotundo-cordatis oppoſitis, flor. paucioribus alaribus, laciniis corollæ erecto-patentibus. *Brown. jam.* 161.
Jaſminum inodorum repens, violæ foliis, fructu puniceo. *Barr. æquin.* 63.
Violæ folio baccifera repens flore albo pentapetaloide, fructu rubro diſpermo. *Sloan. jam.* 1. 243.
Periclymeno accedens, &c. *Mor. hiſt.* 3. 535.
Karinta-kali. *Rheed. mal.* 10. 41. *t.* 21. *Raii ſuppl.* 358.
Stem herbaceous creeping, leaves cordate petioled.

30. Pſychotria emetica.
Lin. ſyſt. 214. *ed. Willd.* 968. *ſuppl.* 144.
Ipecacuanha. *Woodv. med. bot.* 562. *t.* 203. *Piſ. braſ.* 101? *Marcgr. braſ.* 17?
Herbaceous, procumbent, leaves lanceolate ſmooth, ſtipules extrafoliaceous ſubulate, heads axillary peduncled few-flowered.

31. Pſychotria corymboſa.
Lin. ſpec. ed. Willd. 969. *Swartz prodr.* 44. *deſcr.* 423.
Stipules two-toothed, leaves lanceolate-ovate acute ſubrigid ſhining, flowers in corymbs, peduncle and pedicels coloured.

32. Pſychotria pubeſcens.
Lin. ſpec. ed. Willd. 969. *Swartz prodr.* 44. *deſcr.* 425.
Stipules two-toothed, leaves lanceolate-ovate acuminate pubeſcent, panicles cymed ſpreading.

33. Pſychotria pedunculata.
Lin. ſpec. ed. Willd. 969. *Swartz prodr.* 44. *deſcr.* 427.
Stipules two-toothed, leaves ovate-lanceolate ſomewhat wrinkled, flowers in a ſert of cyme, common peduncle elongated.

34. Pſychotria crocea.
Lin. ſpec. ed. Willd. 969. *Swartz prodr.* 44. *deſcr.* 429.
Pſychotrophum fruticoſum, fol. ovatis venoſis, racemis terminalibus croceis. *Brown. jam.* 160. *t.* 13. *f.* 1, 2. *quoad flores.*
Stipules two-toothed, leaves ovate acute nerved, panicles erect and peduncles ſaffron-coloured.

35. Pſychotria alpina.
Lin. ſpec. ed. Willd. 970. *Swartz prodr.* 44. *deſcr.* 431. *obſ.* 77.
Stipules two-toothed, leaves lanceolate-ovate membranaceous netted-veined, panicles erect, corollas elongated diaphanous.

36. Pſychotria paniculata.
Lin. ſpec. ed. Willd. 970.
Chiococca paniculata. *Lin. ſuppl.* 145.

Stipules two-toothed, leaves ovate, panicle erect, ſtem arboreous.

37. Pſychotria Palicurea.
Lin. ſpec. ed. Willd. 971. *Swartz deſcr.* 433.
Palicourea guianenſis. *Aubl. guian.* 1. 173. *t.* 66.
Stephanium. *Lin. gen. ed. Schreb. n.* 308. & *p.* 822.
Stipules two-lobed, leaves broad-ovate acuminate at both ends, panicles erect, corollas cylindrical ventricoſe ſomewhat curved mealy on the outſide.

38. Pſychotria lutea.
Lin. ſpec. ed. Willd. 971.
Nonatelia lutea. *Aubl. guian.* 1. 190. *t.* 74.
Stipules two-lobed, leaves broad-ovate acuminate, panicles erect, tube of the corolla narrowed at the baſe, ſegments of the border acute.

39. Pſychotria longiflora.
Lin. ſpec. ed. Willd. 971.
Nonatelia longiflora. *Aubl. guian.* 1. 185. *t.* 71.
Stipules two-lobed, leaves ovate-lanceolate acuminate, raceme terminating almoſt ſimple, tube of the corolla curved in, ſegments of the border bluntiſh.

DESCRIPTIONS, &c.

1. Native of the Eaſt Indies.—Gærtner affirms that the fruit of the Jamaica plant is as like to that of Ceylon as one egg is to another. He thus deſcribes it —Berry ſmall, ovate-globular, crowned with a ſhort five-toothed calyx, marked with ten longitudinal deep grooves, two-celled; coriaceous when ripe, dry, bipartile, of a light bay inclining to ſtraw colour. In each cell one ſeed, faſtened to the bottom of it, flattiſh on one ſide, wrinkled tranſverſely, and having a raiſed line along the middle; convex on the other ſide, with three larger dorſal grooves, and two ſmaller marginal ones, dark-coloured.

Gærtner attributes Browne's ſynonym to this ſpecies, which Swartz gives to his *citrifolia*.—Browne does not deſcribe any of his ſeven ſpecies of *Pſychotrophum*, except the laſt ſhortly; which is *P. herbacea*. He remarks in general, that they are all very common in Jamaica, in the woods, growing beſt in a rich ſhaded ſoil; that they are for the moſt part ſhrubby, and riſe from three to ſix or ſeven feet in height; that the leaves are oppoſite in all, and the foot-ſtalks are generally ſupported with ſtipules at their inſertions; that the flowers are commonly in looſe cluſters, terminating the ſtalks and branches; and that the ſeeds of all the ſpecies are pretty much like thoſe of Coffee.

The very numerous ſpecies of this genus, natives of the Weſt Indies, were unknown to Linnæus. The form of the corolla is different in the ſeveral ſpecies; tubular, ſalver-ſhaped or funnel-ſhaped; with the opening villoſe in ſome, naked in others. The inflorescence in almoſt all is raceme-paniculed. The berry is generally one-celled, though the unripe fruit appears to have two cells[a]. In Gærtner's ripe fruit however there are certainly two cells: and *Nonatella* of Aublet has a five-celled fruit, but only two ſeeds.

2. This reſembles the preceding ſo much, that it may be only a variety; the leaves however are perfectly ovate and ſhining; whereas in that they are lanceolate-ovate and dark green not ſhining.

Native of Jamaica on rocks in the interior of the iſland[b].

3. This differs from the other ſpecies in habit, and in having axillary flowers.—Native of Guiana, in woods[c].

4. This differs from *P. glabrata* (n. 2.) in having longer thickiſh leaves, larger flowers, and roundiſh berries.—Native of Jamaica and Hiſpaniola, in dry coppices[d].

5. Trunk ten or twelve feet high, with many branches at the top, and the bark reddiſh brown on the outſide and red within. Leaves ſubſeſſile, wide, acute, ſmooth, pale green underneath, with purple nerves. Stipules deciduous, long, acute, one on each ſide within the leaves. Flowers in terminating racemes. Corolla white. The bark dyes ſilk and cotton of a fine red.

Native of Guiana, in great foreſts, eſpecially in wet places, and called there *Simira*[e].

6. This differs from the reſt of the genus in its very remarkable ſhagginess, and extremely ſpreading habit.—Native of Jamaica, in the ſouthern parts, in old woods.

7. This differs from the preceding in its ſmoothneſs and in having the branches of the panicle reflex. A peculiar very fetid ſubacid odour proceeds from the branches when broken, and the leaves when bruiſed, like that of *Comocladia* and *Schradera capitata*.

Native of Jamaica, in the ſouthern parts, in mountain woods.

8. The leaves are very like thoſe of the Lemon in colour and conſiſtence. It is diſtinct from the reſt in leaves, ſtipules and berries[f]. The latter, as Gærtner remarks, are ſoft, one-celled and red, therefore very different from thoſe of the firſt ſpecies.—Native of the Weſt Indies.

9. This is a ſhrub, putting forth many ſtems from the root, which are ſtraight, branched, and eight feet high. Leaves wide, ovate, acute, ſmooth, quite entire, petioled. Stipules two, oppoſite, roundiſh, deciduous, one on each ſide; within the baſe of the petioles. Flowers panicled, terminating. Corolla white.

Native of Guiana, on the banks of the river Sinemari; flowering in ſeptember. The country name is *Maypouri-Crabri*; becauſe the *Maypouris* or wild kine feed on the leaves and branches[g].

10. This differs from the others in the leaves, which are obovate, acuminate, cartilaginous at the edge, and furniſhed with very minute briſtles, nerved and veined, dark green and ſhining above, beneath pale and ſomewhat glaucous, on roundiſh petioles. Swartz found it in woods, in the ſouthern parts of Jamaica, flowering in ſpring.

11. This is diſtinguiſhed by the leaves and ſtipules. The leaves are oblong, acuminate both ways, but blunt at the top, entire, nerved and veined, flat, thin and ſomewhat membranaceous, ſmooth, on round and thick petioles. Stipules ovate, wide, half-embracing, acuminate, bifid at the top, deciduous.—Native of Hiſpaniola in coppices.

12. It differs from the preceding in having a more ſpreading habit, the leaves more ovate and nerved, whence the ſurface is leſs ſmooth than in that; the margins alſo are ſlightly waved, and the ſtipules are larger[h]. The leaves, according to Willdenow, are not properly nerved, but have prominent veins.—Native of Jamaica, in coppices.

13. Swartz and Willdenow diſtinguiſh this both from the preceding and the firſt ſpecies with which Jacquin had confounded it. It is a ſubereCt branched ſhrub, the height of a man. The leaves are attenuated at the baſe, quite entire, ſhining, petioled, of various ſizes. Flowers inodorous, white: tube erect, ſomewhat funnel-ſhaped, three times as long as the border. Stamens often ſix with a ſix-cleft corolla, or ſeven with the corolla ſeven-cleft. Berries red, crowned with the calyx almoſt of the ſame colour, and containing a red pulp. Seeds white.

Native of Carthagena in New Spain, in coppices, among buſhes, and in hedges, very common; flowering there in auguſt[i].

14. This ſmall ſhrub ſeldom riſes above four or five feet in height, and is eaſily diſtinguiſhed by its tufted buſhy form and ſmooth leaves[k].

In habit it differs from the Pſychotriums. Browne, having ſeen only the unripe fruit, called it a two-celled drupe, and made a new genus of this ſhrub. The unripe berry is hard and two-celled; but when ripe it becomes juicy, and has a ſweet taſte; it has two ſeeds, but the partition diſappears.

Native of Jamaica, in the northern parts, in dry coppices, among Logwood. Browne ſays it is common about the ferry and in the Savanna near Hunt's bay.

15. Leaves on very ſhort petioles, from one to two inches in length, entire, ſmooth, paler and very mi-

[a] Swartz obſ.
[b] Swartz deſcr.
[c] Swartz deſcr.
[d] Willdenow.
[e] Aublet.
[f] Swartz deſcr.
[g] Jacquin.
[h] Aublet.
[i] Browne.

nutely dotted underneath, ſcarcely nerved, veined, on very ſhort petioles. Stipules very ſmall; interpoſed between the leaves, entire, ſubciliate. Racemes two inches long, looſe, compound. Berry oblong, a little acuminate at both ends, ſmooth.—Native of Jamaica, in coppices on the mountains.

16. This is a running ſhrub, rooting in the trunks of old trees, and ſubparaſitical. Branches quadrangular towards the end, pendulous, ſmooth. Leaves an inch long, entire, veinleſs with ſcarcely apparent nerves, very ſmooth, bright green, pale underneath; on ſhort round petioles, flat above. Stipules or ſheaths ſmall, membranaceous, between the petioles, permanent. Racemes ſolitary, erect, the length of the leaves. Peduncles half an inch long, roundiſh, ſmooth, red: branchlets oppoſite, decuſſated, faſtigiate like a cyme, ſpreading, three-parted at the top; flowers pedicelled, white, ſmall. Berry globular or obovate, retuſe, crowned with the calyx, ſcarlet.

Native of the Weſt Indies. Found in the woods of Martinico, by Jacquin; in Paradiſe mountain, Monſerrat, where it is called *Climbing Vine*, by Ryan; in St. Chriſtopher's, by Fahlberg; in the mountains of Dominica and Guadeloupe, by Du Ponthieu.

17. This may be diſtinguiſhed from the reſt at firſt ſight by the diſpoſition of the branches, &c.—Native of Hiſpaniola, on open ſpots in a cretaceous ſoil, flowering in june.

18. Upright, branched. Branches numerous from the root. Leaves entire, veined, ſmooth, paler underneath, on ſhort petioles. Stipules ſhrivelling, deciduous, with two awl-ſhaped teeth. Racemes terminating, ſolitary: common peduncles long, round, ſmooth. Flowers ſmall, whitiſh. Berry roundiſh, ſcarlet, pendulous, the ſize of a red Currant. Seeds hemiſpherical, ſtriated. It flowers in june, and the berries are ripe in july.—Native of Hiſpaniola, on dry hills, in a cretaceous ſoil [k].

19. Native of the iſland of Otaheite [l].

20. This is a ſhrub from two to three feet in height, with round knobbed ſmooth branches. Leaves on ſhort petioles, acuminate, entire, nerved and veined. Flowers ſubſeſſile, with a three-leaved involucre, and linear ſpreading leaflets or bractes, the length of the pedicels. Berry roundiſh, with a very minute calyx at top, black, ten-grooved. Seeds hemiſpherical, grooved.—Native of Jamaica and Guiana [m].

21. This differs from the preceding in having ovate leaves, the flowers panicled, the ramifications divaricating and flexuoſe, and the peduncles naked not involucred. It reſembles *P. marginata*, but is ſufficiently diſtinct, in having the ſtipules two-toothed, the margin of the leaves naked, and the panicle flexuoſe.—Native of Cayenne, in barren places [l].

22. The trunk of this ſhrub is from two to three feet in height and branched. The branches are knobbed. Leaves ovate-oblong, acuminate, ſmooth, dark green above, paler underneath, petioled. Stipules embracing, four-lobed, annexed. Flowers in terminating racemes. Involucre of the calyx four-leaved; the leaflets long and narrow. Corolla white; with a ventricoſe tube, and a five-cleft border, with acute lobes. Berry black, ten-ſtreaked, five-celled.—Native of Guiana, in the woods of Orapu, flowering and fruiting in auguſt.

23. This alſo is a ſhrub with the trunk four or five feet in height, and branched at the top. Branches knobbed. Leaves wide, ovate-oblong, acute, ſmooth, quite entire, on ſhort petioles. Stipules deciduous, oppoſite, oblong, blunt, one on each ſide at the baſe of the petioles. Flowers in terminating racemes: raceme violet. Involucre of the calyx four-leaved; leaflets long, narrow, acute. Corolla white. Berry violet, ten-ſtreaked, five-celled.—Native of Guiana, in woods, flowering in july [n].

24. This ſhrub is a fathom in height, with upright, four-cornered, even branches. Leaves oblong, acuminate at both ends, entire, nerved and veined, ſmooth, ſomewhat wrinkled, paler underneath, on round petioles, which together with the nerves are pubeſcent underneath. Stipules interpoſed between the leaves, wide, ſmooth. Raceme almoſt upright: common peduncle round flatted a little, elongated, pubeſcent; branches ſpreading horizontally, three-parted at the top; pedicels very ſhort. Flowers ſeſſile, three or four, aggregate, pale. Bractes wide, concave, ſharp, at the baſe of the branchlets of the raceme, and of the pedicels, and under the flowers, pubeſcent. Berry oblong, crowned, two-grooved, very dark blue. Seeds grooved. It flowers in may and june.

Native of Jamaica, on high mountains in the ſouthern parts.

25. This is ſuffruticoſe, and from twelve to ſixteen feet in height. Stem upright, ſubherbaceous, thick, ſtiff, grooved, ſmooth; with herbaceous, ſtiff, angular, ſmooth branches, and axillary, grooved branchlets. Leaves a foot and more in length, and three inches wide, with a ſhort point, quite entire, nerved and veined, ſmooth, paler underneath; on ſhort, thick, roundiſh, ſmooth petioles. Stipules interpoſed between the leaves, wide, awl-ſhaped at the tip, ſmooth. Panicles large, at the ends of the branchlets. Common peduncle ſometimes longer than the leaves, roundiſh, upright, ſtriated: branches in threes and fours, in a ſort of whorl, ſtiff, ſomewhat compreſſed, margined, thicker towards the baſe, ſtriated, three or four-parted, again ſubdivided at the tip: flowers numerous, on ſhort pedicels, ſomewhat cluſtered, pale. Berry ovate, crowned with a very minute calyx. Seeds plano-convex. It flowers in april; and differs in habit, leaves, ſtipules, &c.

Native of Jamaica, in the interior weſtern parts, in mountain coppices.

26. This is a ſingular ſpecies, with the branches of the panicle divaricating and directed all one way, as in the *flexuoſa*, *n.* 21. which it very much reſembles in habit.—Native of Jamaica, on the Blue Mountains.

27. Roots long, creeping. Stem two or three feet high, herbaceous only a little ſhrubby towards the bottom, thick, round, at the top leafy and ſmooth, ſomewhat ſucculent. Leaves a foot long, acuminate, entire, with arched nerves, ſhining, pale underneath. Petioles long, round, thick. Peduncles the length of the petioles, round, ſmooth, three-parted at the top; branchlets ſhorter than the peduncle, many-flowered at the top: flowers ſubſeſſile, cluſtered, ſmall, pale red. Bractes acute, oppoſite, convex, at the ſubdiviſions of the peduncles. Berry ſpherical, ſcarlet, when dry compreſſed. Seeds plano-convex, compreſſed, creſted on the outer ſide. It flowers in ſpring.—Native of Jamaica, in low wet places on mountains [o].

28. This very much reſembles the next ſpecies, but yet it is diſtinct. Stems creeping, from two feet to a fathom in length, with the branches erect, alternate, round, jointed, perennial. Leaves petioled, acute at both ends, and even on both ſides. Stipules roundiſh, deciduous. Corymbs terminating, brachiate, ſcarcely longer than the leaves. Seeds two-grooved in the outer convex ſide.—Native of the Eaſt Indies [p].

29. Stem filiform, round, ſmooth. Leaves ſpreading, acute, bluntly ſerrate, ſmooth above and ſhining, below ſilvery and white. Petioles round, longiſh, erect, pubeſcent. Stipules oppoſite, ovate, emarginate, white. Peduncles ſhorter than the petioles, erect, thickiſh, round, commonly radical but ſometimes axillary, few-flowered. Flowers white. Berry roundiſh, ſcarlet, crowned. Seeds hemiſpherical, oblong, grooved.

Native of the Weſt Indies, in ſhady places [r]. In Jamaica. Jacquin found it in Martinico, bearing flowers and ripe fruits in december. Alſo in the Eaſt Indies.

30. Root perpendicular, roundiſh, ſomewhat branched. Leaves approximating, ſpreading very much, quite entire, acuminate, having a round prominent rib underneath, but ſharpiſh above, even, flat, from two to three inches in length. Stipule ſingle on each ſide, ſtiffiſh, horizontal, very ſhort, deciduous. Flowers white, ſmall, ſeſſile, on ſhort, ſolitary peduncles, the

[k] Swartz, [l] Forſter. [m] Swartz. [n] Willdenow. [o] Aublet.

[p] Swartz. [q] Linn. mant. [r] Swartz.

length of the petioles, from two to five together. Each flower has a ſimple braćte ſo ſmall as to be ſcarcely viſible. Perianth ſmall, five-toothed, permanent, with very ſmall teeth, ſomewhat rolled back. Corolla one-petalled, funnel-form: tube longer than the calyx, cylindrical, widening upwards: opening almoſt cloſed with ſoft villoſe hairs: border five-parted; with the ſegments lanceolate acute pubeſcent within, ſomewhat revolute, almoſt equal to the tube. Nectary a thickiſh rim, obſcurely five-cornered, whitiſh, ſurrounding the baſe of the ſtyle. Filaments very ſhort inſerted into the throat of the corolla. Anthers ſmall, linear, ereć, pubeſcent at the top. Germ inferior, roundiſh. Styles almoſt cylindrical, ereć, the length of the tube. Stigma thickiſh, two-parted. Berry ſubovate, even, crowned with the calyx, one-celled. Seeds two, united, oblong, acute at both ends, flat within, gibbous on the outſide [s].

Native of North America, in the warmeſt part of it.

This plant is ſuppoſed to be the Ipecacuanha, but on an authority which ought not to be followed implicitly, namely that of an American quack, who ſent a ſpecimen of it in flower to the Spaniſh governor, who communicated it to Mutis.

Dr. Woodville has given a figure of the true plant from a ſpecimen preſerved in ſpirits, and ſent from Brazil by Governor Phillip to Sir Joſeph Banks; but it has not the fructification.

There are three ſorts of Ipecacuanha root in our ſhops—the aſh-coloured or gray, the brown, and the white. The aſh-coloured is brought from Peru, and is a ſmall wrinkled root, bent into a great variety of figures, brought over in ſhort pieces, full of wrinkles and deep circular fiſſures, down to a ſmall white woody fibre that runs in the middle of each piece: the cortical part is compaćt, brittle, and looks ſmooth and reſinous on breaking: it has very little ſmell; the taſte is bitteriſh and ſubacrid, covering the tongue as it were with a kind of mucilage. The brown is ſmall, ſomewhat more wrinkled than the foregoing; of a brown or blackiſh colour without, and white within; this was brought from Brazil. The white ſort is woody, has no wrinkles, and no perceptible bitterneſs. The firſt is that uſually preferred for medicinal uſe. The brown, even in a ſmall doſe, has been ſometimes obſerved to produce violent effects. The white, though taken in a large one, has ſcarcely any effect at all; Dr. Irving has aſcertained by experiments, that this root contains a gummy and reſinous matter, and that the gum is in much greater proportion, and is more powerfully emetic than the reſin; that the cortical is more active than the woody part, and that the whole root manifeſts an antiſeptic and aſtringent quality. He alſo found its emetic property to be moſt effectually counteraćted by means of the acetous acid, inſomuch that thirty grains of the powder taken in two ounces of vinegar, produced only ſome looſe ſtools.

The firſt account we have of Ipecacuanha is that publiſhed by Piſo in 1649; but it did not come into general uſe till thirty years after, when Helvetius, under the patronage of Lewis XIV. employed it at the Hotel de Dieu, and introduced this root into common praćtice: experience has proved it to be the mildeſt and ſafeſt emetic with which we are acquainted, having this peculiar advantage, that if it does not operate by vomit, it readily paſſes off by the other emunctories.

It was firſt introduced with the character of an almoſt infallible remedy in dyſenteries and other inveterate fluxes, and alſo in diſorders proceeding from obſtructions of long ſtanding: nor has it loſt much of its reputation by time. In the ſpaſmodic aſthma, Dr. Akenſide remarks, that where nothing contraindicates repeated vomiting, he knows no medicine ſo effectual. In violent paroxyſms a ſcruple procures immediate relief: where the complaint is habitual, from three to five grains every other morning may be given for a month or ſix weeks.

This medicine has alſo been ſucceſsfully uſed in hemorrhages. Several caſes of menorrhagia are mentioned by Dahlberg, in which one-third or half a grain was given every four hours till it effected a cure. Theſe ſmall doſes are likewiſe found of great uſe in catarrhal and even conſumptive caſes, as well as in various ſtates of fever. Dr. Cullen informs us, that he knew a praćtitioner who cured intermittents by giving five grains of Ipecacuanha, or enough to excite nauſea, an hour before the acceſſion of the fit was expected; and that Dr. Thompſon, formerly of Montroſe, propoſed to cure agues by emetics given at the time of acceſſion, or at the end of the cold ſtage; this praćtice has alſo been ſucceſsful, and may indeed be executed by tartar emetic; but Ipecacuanha is more manageable, and generally more eaſy to the patient.

This root, particularly in the ſtate of powder, is now advantageouſly employed in almoſt every diſeaſe in which vomiting is indicated; and when combined with Opium, under the form of *pulvis ſudorificus*, it furniſhes us with the moſt uſeful and active ſweating medicine which we poſſeſs. It is alſo given with advantage in very ſmall doſes, even when it produces no ſenſible operation. The full doſe in ſubſtance is a ſcruple, though leſs doſes will frequently produce an equal effect. The officinal preparation is *Vinum Ipecacuanhæ* [t].

31. This is a ſhrub, a fathom in height; the branches and branchlets ſubdivided, upright, round, ſhining; the latter dark red. Leaves entire, nerved and veined, very ſmooth, ſhining; on ſhort, round, ſmooth petioles. Stipules ſmall, interpoſed between the leaves, with the teeth lanceolate. Flowers not in a true corymb, but in a panicle approaching nearer to that form than in any of the reſt, eſpecially when nodding with a load of berries: branchlets trichotomous, ereć, faſtigiate: common peduncles ſhorter than the leaves, round, ſmooth, purple: braćtes awl-ſhaped, coloured, at the ſubdiviſions of the panicle. Flowers purple. Berry roundiſh, twin, compreſſed a little, dark red. Seeds hemiſpherical, ſtriated. It flowers in ſummer.—Native of Jamaica, in the high mountains.

32. This alſo is a ſhrub, a fathom high, with the branches ſubdivided, round, ereć, pubeſcent. Leaves entire, nerved, pubeſcent eſpecially underneath, ſometimes ſubtomentoſe, ſoftiſh, from two to three inches long, on roundiſh petioles of a middling length. Stipules interpoſed between the leaves, with awl-ſhaped ſhort teeth. Panicles terminating, ereć, the length of the leaves, with ſpreading ſubfaſtigiate branchlets, almoſt forming a cyme, trichotomous, with a floret in the middle commonly ſeſſile. Common peduncles an inch long, round, pubeſcent. Braćtes linear, oppoſite at the ſubdiviſions of the panicle. Flowers yelloviſh green. Berry roundiſh-twin, crowned, pubeſcent, black with a blue juice. Seeds hemiſpherical, grooved and ſtriated. It flowers the whole year.—Common in Jamaica and other iſlands of the Weſt Indies.

33. This differs from all the others in its ſubcymoſe inflorescence, and in having the common peduncles elongated.—Native of Jamaica, in the interior, in mountain woods.

34. This is diſtinguiſhed by the leaves being very much veined, and the panicles ſaffron-coloured [u].

The leaves are not nerved, but veined, with the veins prominent: ſuch leaves ſhould rather be called ribbed, a nerved leaf being that which has ſeveral undivided nerves ſpringing from the baſe [v].

Native of the Weſt Indies, in mountain coppices.

35. This is a ſhrub from five to ten feet high, with the branches thick, four-cornered, ſmooth, almoſt ſimple. Leaves acuminate at both ends, ſubciliate, membranaceous, ſomewhat rigid, many-nerved, ſmooth on both ſides; on round, pubeſcent petioles. Stipules interpoſed between the leaves, connate, membranaceous, truncated in the middle, having on each ſide a long linear ereć ſubciliate toothlet. Panicle often ſhorter than the leaves: common peduncle an inch long, flatted or angular, ſmooth, ſometimes red:

[s] Mutis in Linn. ſuppl.

[t] Woodville. [u] Swartz. [v] Willdenow.

branches

branches decuſſated, from upright ſpreading, ſimply ſubdivided; with the pedicels ſcattered, red, longer. Berry roundiſh, larger, two-grooved, crowned. Seeds hemiſpherical, grooved. It flowers in ſpring and ſummer.

Native of Jamaica, on the Blue Mountains. It reſembles Chiococca paniculata of the younger Linnæus's Supplement ſo much, that it can ſcarcely be different: or if that is to be diſtinguiſhed, ſtill it muſt be a ſpecies of Pſychotria[b]. See the next ſpecies.

36. This is a high tree, with very ſmooth round branches. Leaves on ſhort petioles, acuminate at both ends, quite entire, veined. A thin membrane combines the leaves, and is extended within them into two ſtipular teeth. Panicle terminating branched. Flowers yellow. Berry yellow, compreſſed; having a lateral groove, it appears as if it were twin. It is perhaps different from the ſpecies immediately foregoing, this being arboreous, that ſhrubby; the leaves being ovate in this, lanceolate-ovate in that. The deſcription we have of it is too ſhort to ſtate other differences.

Found at Surinam by Dalberg, and in South America by Mutis[a].

37. This is a ſhrub with round ſmooth branches and coloured branchlets. Leaves decuſſated, entire, nerved and veined, ſmooth, five or ſix inches in length; on quadrangular ſmooth petioles, half an inch long. The two lobes of the ſtipules are ovate, obtuſe, preſſed cloſe, large, permanent, rigid. Panicle almoſt the length of the leaves: common peduncle two inches long, four-cornered, blood-red; branchlets erect, compreſſed, grooved, ſhort, trichotomous, coloured; flowers pedicelled, erect. Pericarp, when unripe, two-celled, with one ſeed in each cell, crowned with the calyx. Certainly not to be ſeparated from the Pſychotriums, and reſembling *P. crocea* and *alpina* very much in many reſpects.—Native of the Weſt Indies and Guiana[y].

38. The trunk of this is a foot high or more, with many knobbed branches at the top. Leaves ovate, acute, ſmooth, quite entire, petioled. Stipules embracing, two-lobed, annexed; the lobes oblong, oppoſite. Flowers in terminating racemes. Calyx naked. Corolla yellow, with a very long tube, and a five-cleft border; the clefts long and acute. Berry five-celled.

Native of Guiana, near mount Courou; flowering in ſeptember.

39. This is a perennial plant, four feet high, with a knobbed, branched ſtem. Leaves ovate-oblong, acute, ſmooth, quite entire, petioled, annexed to an embracing, four-toothed ſheath. Flowers terminating, in panicles. Calyx knobbed. Corolla white. Berry violet.

Native of Cayenne and Guiana, in barren places; flowering and fruiting in auguſt[y].

PSYCHOTROPHUM. See *Pſychotria*.]

PSYLLIUM. See *Plantago*.

PTARMICA. See *Achillea*, [*Parthenium*, *Xeranthemum*.]

PTELEA. (Πτελεα of *Theophraſtus and Dioſcorides: the name of a tree uſed in building.*)

Lin. gen. n. 152. *Reich. n.* 159. *Schreb. n.* 1505. *Gærtn. t.* 49. *Juſſ.* 375.

Claſſ. 4. 1. Tetrandria Monogynia. *or* Dioecia Tetrandria.

Nat. order of *Terebintaceæ*, Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* four-parted, acute, ſmall, deciduous.

COR. *Petals* four, oblong, concave, ſpreading, larger than the calyx, coriaceous.

STAM. *Filaments* four, awl-ſhaped, erect, curved in at the top, flattiſh and villoſe at the baſe, almoſt the length of the corolla. *Anthers* roundiſh.

PIST. *Germ* ovate, ſmall, abortive. *Style* very ſhort, bifid at the top. *Stigmas* obſolete.

* *Female.*

CAL. and COR. as in the Male.

STAM. *Filaments* as in the Male, much ſhorter than the corolla. *Anthers* roundiſh, barren.

PIST. *Germ* ovate, compreſſed, biggiſh. *Style* ſhort, compreſſed. *Stigmas* two, bluntiſh, diverging.

PER. *Drupe* roundiſh, large, juiceleſs, compreſſed, membranaceous-winged, two-celled.

SEEDS ſolitary, oblong, attenuated upwards.

OBS. *Some of the flowers have a five-cleft calyx, and a five-petalled corolla. In thoſe, and even in the flowers that are four-cleft, there are often five, ſix and ſeven ſtamens. In each cell of the germ there are two ſeeds, but only one of them, and ſometimes only a ſingle ſeed in the whole drupe comes to perfection. In the female flowers the anthers are ſometimes polliniferous, and hence this genus might be referred to the claſs Polygamia. Willdenow has continued it in the genus Tetrandria, wherein Linnæus had placed it.*

ESSENTIAL CHARACTER.

Cal. four-parted, inferior. *Cor.* four-petalled. *Stigmas* two. *Fruit* with a roundiſh membrane, having one ſeed in the middle.

SPECIES.

1. Ptelea trifoliata. *Three-leaved Ptelea* or *Shrubby Trefoil.*

Lin. ſpec. 173. *Reich.* 1. 335. *Willd.* 670. *hort. cliff.* 36. *Gærtn. fruct.* 1. 223. *Trew. var.* 12. *t.* 9. *Mill. fig. t.* 211. *Du Roi harbecc.* 2. 203. *Dubam. arb.* 2. *t.* 43. *Kniph. cent.* 9. *n.* 81.

Ptelea ſimilis. *Zinn. goett.* 207.

Frutex virginianus trifolius, ulmi ſamaris. *Pluk. alm.* 159. *Dill. elth.* 147. *t.* 122. *f.* 148.

β. Ptelea pentaphylla. *Five-leaved Ptelea.*

Munchh. Hauſvat. 3. 242. *Fabric. helmſt.* 416. *Du Roi harbecc.* 2. 203.

DESCRIPTION, *&c.*

The three-leaved Ptelea grows naturally in North America; it was firſt diſcovered in Virginia by Mr. Baniſter, who ſent the ſeeds to England, from which ſome plants were raiſed at Fulham, and ſome other curious gardens; but being planted in the open air, they were deſtroyed by a ſevere winter, ſo that there were ſcarce any of the plants left in England. In 1724, Mr. Cateſby ſent over a good quantity of the ſeeds from Carolina, which ſucceeded ſo well as to furniſh many gardens with the plants. This riſes with an upright woody ſtem ten or twelve feet high, dividing upwards into many branches, covered with a ſmooth grayiſh bark, garniſhed with trifoliate leaves ſtanding upon long foot-ſtalks. The leaflets are ovate or ovate-lanceolate, ſmooth, and of a bright green on their upper ſide, but pale on their under; theſe come out late in the ſpring, ſoon after which the bunches of flower-buds appear, which is generally in the beginning of june, the leaves being then but ſmall, and afterwards increaſe in ſize, but are not fully grown till the flowers decay. The flowers are produced in large bunches at the end of the branches; they are of an herbaceous white colour, compoſed of four or five ſhort petals, ending in acute points; theſe are faſtened at their baſe to a ſhort calyx, cut into four ſegments almoſt to the bottom. In the center is ſituated an orbicular compreſſed germ ſupporting a ſhort ſtyle, which is attended by four awl-ſhaped ſtamina; the germ afterwards turns to a capſule ſurrounded by a leafy border, having two cells, each containing one ſeed.

[Medicus firſt obſerved that the Ptelea was dioecous. According to Willdenow, it is a polygamous ſhrub.]

PROPAGATION AND CULTURE.

This ſhrub may be propagated by cuttings planted in pots of freſh rich earth, and plunged into a moderate hot-bed. The beſt time for this is in the beginning of march, but they muſt be carefully managed ſo as not to have too much heat, and ſhaded from the ſun in the middle of the day, otherwiſe they will not ſucceed. It may alſo be propagated by layers, but theſe are often two years before they take root; if good ſeeds can be procured either here or from abroad, the plants raiſed from thoſe will be much ſtronger.

Theſe ſeeds may be ſown in the beginning of april, on a bed of light earth, in a warm ſheltered ſituation,

[b] Swartz. [a] Linn. ſuppl. and Willdenow.
[y] Swartz. [y] Aublet.

where, if the ground is moiſtened in dry weather, the plants will come up in ſix weeks; but if the ſeeds are ſown in pots, and placed on a very moderate hot-bed, the plants will come up ſooner, and make greater progreſs the firſt year; but they muſt not be forced or drawn, for that will make them very tender; therefore in june the plants ſhould be expoſed to the open air, in a ſheltered ſituation, where they may remain till the froſt comes on, when thoſe in the pots ſhould be either placed under a common frame, to ſhelter them from ſevere froſt, or the pots plunged into the ground, near a hedge, that the froſt may be prevented from penetrating through the ſides of the pots to the roots of the plants. The following ſpring the plants may be planted into a nurſery-bed, at about one foot diſtance, where they may grow two years, by which time they will be fit to tranſplant where they are deſigned to remain.

Theſe plants are a little tender while they are young, therefore will require ſome protection the firſt and ſecond year, but particularly from the early froſts in autumn, which frequently kills the tops of the tender ſhoots before they are hardened; and the more vigorous the plants have grown the preceding ſummer, the greater danger there is of their being killed, therefore they ſhould be ſcreened either with mats or ſome other covering; but as they advance in ſtrength, they become more hardy, and are rarely injured by froſt.

[PTELEA VISCOSA. See *Dodonæa*.

PTERANTHUS. See *Camphoroſma*.

PTERIS (*of Pliny.* Πτερις *of Theophraſtus and Dioſcorides, from* πτερον, *a wing, ſo named on account of its winged leaves.*)

Lin. gen. n. 1174. *Reich. n.* 1291. *Schreb. n.* 1626. *Smith gen. dorſif.* 241.

Claſſ. 24. 2. Cryptogamia Filices.

Nat. order of *Filices* or *Ferns*.

GENERIC CHARACTER.

Fruſtif. in an uninterrupted marginal line. *Involucre* from the margin of the frond turned in, uninterrupted, ſeparating on the inner ſide.

SPECIES.

* *With ſimple fronds.*

1. Pteris piloſelloides.
   Lin. ſpec. 1530. *Reich.* 4. 392. *Thunb. jap.* 331. *Kæmpf. ic. ſelect. t.* 31. *Lour. cochinch.* 678. 833.
   Barren fronds obovate, fertile lanceolate longer, ſhoots creeping.
2. Pteris lanceolata.
   Lin. ſpec. 1530. *Reich.* 4. 392. *Desfont. atlant.* 401. *Lour. cochinch.* 679. 834. *Plum. amer.* 28. *t.* 40. *fil.* 116. *t.* 132. *Mor. hiſt* 3. 558. *n.* 20. *Raii ſuppl.* 52. *n.* 15. (Lingua cervina). *Pet. fil.* 123. *t.* 6. *f.* 5.
   Fronds lanceolate ſubangular ſmooth fruiting at the tip.
3. Pteris anguſtifolia.
   Swartz prodr. 129.
   Fronds lanceolate-linear entire erect fruiting along the whole edge.
4. Pteris lineata.
   Lin. ſpec. 1530. *Reich.* 4. 393. *Plum. amer.* 28. *t.* 41. *fil.* 123. *t.* 143. *Mor. hiſt.* 3. 558. *n.* 21. *Raii ſuppl.* 52. *n.* 14. (Lingua Cervina). *Pet. fil.* 126. *t.* 14. *f.* 3. (Phyllitis).
   Fronds linear quite entire fruiting longitudinally.
5. Pteris tricuſpidata.
   Lin. ſpec. 1531. *Reich.* 4. 393. *Plum. fil.* 121. *t.* 10. *f.* 6. (Lingua Cervina). *Pet. fil.* 124. *t.* 10. *f.* 6. (Phyllitis).
   Fronds linear trifid at the top.
6. Pteris furcata.
   Lin. ſpec. 1531. *Reich.* 4. 393. *Plum. fil.* 122. *t.* 141. (Lingua Cervina). *Pet. fil.* 125. *t.* 6. *f.* 6. (Phyllitis).
   Fronds dichotomous hiſpid underneath, fruiting at the tips.
7. Pteris quadrifoliata.
   Lin. ſpec. 1531. *Reich.* 4. 393. *Pluk. phyt. t.* 401. *f.* 5. (Filix).

Marſilea minuta. *Lin. mant.* 308. *ſpec. Swartz obſ.* 396.

Frond quaternate roundiſh quite entire, ſhoots creeping.

* * *With pinnate fronds.*

8. Pteris arborea.
   Lin. ſyſt. 930. *Reich. n.* 393.
   Leaflets pinnatifid, trunk arboreous prickly.
9. Pteris grandifolia.
   Lin. ſpec. 1531. *Reich.* 4. 394. *hort. cliff.* 473. *Pet. fil.* 127. *t.* 6. *f.* 15. (Phyllitis). *Plum. fil.* 88. *t.* 106. (Lingua Cervina). *Plum. amer.* 6. *t.* 8. (Filix). *Raii ſuppl.* 64. (Phyllitis). *Mor. hiſt.* 3. 571. *n.* 2. (Filix).
   Acroſticum marginatum. *Lin. ſpec.* 1526. *Brown. jam.* 105. *n.* 6. ſec. *Swartz.*
   Pinnas oppoſite ovate-linear acuminate quite entire.
10. Pteris nervoſa.
    Lin. ſyſt. 930. *Thunb. jap.* 332.
    Pinnas lanceolate parallel-nerved entire the loweſt binate.
11. Pteris longifolia.
    Lin. ſpec. 1531. *Reich.* 4. 394. *hort. cliff.* 473. *Brown. jam.* 90. *n.* 2. *Pet. fil.* 129. *t.* 6. *f.* 12. *Mor. hiſt.* 3. 568. *n.* 17. (Lonchitis). *Plum. fil.* 52. *t.* 69. *Raii ſuppl.* 65. *alt. Plum. amer.* 12. *t.* 18. (Filix).
    Pinnas linear repand cordate at the baſe.
12. Pteris denticulata.
    Swartz prodr. 129.
    Lower pinnas ſemipinnate lanceolate, the barren ones toothlet-ciliate, the fertile ones quite entire.
13. Pteris vittata.
    Lin. ſpec. 1532. *Reich.* 4. 394. *Oſb. it. t.* 4. *Brown. jam.* 90. 3. *Lour. cochinch.* 679. 834. *Pet. gaz. t.* 63. *f.* 10. (Filix).
    P. obliqua. *Forſk. deſcr.* 185.
    Pinnas linear ſtraight rounded at the baſe.
14. Pteris ſtipularis.
    Lin. ſpec. 1532. *Reich.* 4. 395. *Plum. amer.* 12. *t.* 19. *fil. t.* 70. *Pet. fil.* 130. *t.* 12. *f.* 1. (Filix).
    Pinnas linear ſeſſile. ſtipules lanceolate.
15. Pteris trichomanoides.
    Lin. ſpec. 1532. *Reich.* 4. 395. *hort. cliff.* 473. *Brown. jam.* 105. *n.* 7. (Acroſticum). *Plum. fil.* 57. *t.* 75. *Pet. fil* 137. *t.* 9. *f.* 16. *Sloan. jam.* 1. 80. *t.* 35. *f.* 1. *Raii ſuppl.* 60. 1. (Trichomanes). *Pluk. phyt. t.* 281. *f.* 4. (Filix).
    Pinnas ſubovate blunt repand hirſute underneath.
16. Pteris cretica.
    Lin. ſyſt. 931. *Reich.* 4. 395. *mant.* 130. *Vahl. ſymb.* 1. 84. *Thunb. jap.* 332.
    P. ſemiſerrata. *Forſk. deſcr.* 186.
    Hemionitis multifida. *Baub. pin.* 364
    Phyllitis ramoſa. *Alp. exot.* 67. *t.* 66.
    Lingua cervina foliis coſtæ innaſcentibus. *Tournef. inſt.* 544. *t.* 321.
    Filix cretica minor non ramoſa. *Mor. hiſt.* 3. 572. *f.* 14. *t.* 1. *f.* 16.
    Pinnas oppoſite lanceolate ſerrulate narrowed at the baſe, the loweſt ſubtripartite.

*** *With ſubbipinnate or branched fronds.*

17. Pteris pedata.
    Lin. ſpec. 1532. *ſyſt.* 931. *Reich.* 4. 395. *hort. cliff.* 473. *Forſk. prodr. n.* 417. *Brown. jam.* 90. *n.* 1.
    P. argentea. *Act. petrop.* 12. 519. *t.* 12. *f.* 2.
    Hemionitis. *Plum. amer.* 24. *t.* 34. *fil.* 130. *t.* 152. *Sloan. jam.* 1. 73.
    Filix marginifera, geranii folio. *Pet. fil.* 176. *t.* 8. *f.* 12.
    F. Hemionitis americana, petroſelini foliis profunde laciniatis. *Pluk. phyt. t.* 286. *f.* 5. *Raii ſuppl.* 55.
    Adiantum monophyllum amer. fol. profunde laciniatis ad oras pulverulentum. *Mor. hiſt.* 3. 592.
    β. A. monoph. Antegonanum ad oras pulv., platani in modum diviſum, lacinia media longius producta. *Mor. hiſt.* 3. 392.
    Fronds five-angled trifoliate, pinnas pinnatifid, the lateral ones two-parted.
18. Pteris ſinuata.
    Lin. ſyſt. 931. *Thunb. jap.* 332.
    Fronds bipinnatifid, pinnules and ſinuſes rounded.

19. Pteris aquilina. *Female Fern* or *Brakes.*
Lin. ſpec. 1533. *Reich.* 4. 396. *hort. cliff.* 473. *fl. ſuec. n.* 940. *Huſſ. angl.* 451. *Wither. arr. ed.* 3. 765. *Scop. carn. n.* 1269. *Gunn. norv. n.* 30. *Pollich pal. n.* 956. *Hall. helv. n.* 1688. (Filix). *Thunb. jap.* 332. *Bolt. fil. t.* 10.
Filix femina. *Fuchſ. hiſt.* 596. *Camer. epit.* 992. *Matth.* 1291. *Ger.* 969. 2. *emac.* 1128. 2. *Dod. pempt.* 462. 2. *Raii hiſt.* 149. *ſyn.* 124. *Blackw. t.* 325.—vulgaris. *Park. theat.* 1037.
F. ramoſa major pinnulis obtuſis non dentata. *Bauh. pin.* 357. *Tlum. amer.* 23. *t.* A. *f.* 1.
F. ram. maj. repens vulgatiſſima. *Mor. hiſt.* 3. *ſ.* 14. *t.* 4. *f.* 3.
Fronds ſuperdecompound, leaflets pinnate, pinnas lanceolate, lower pinnatifid, upper leſs.

20. Pteris caudata.
Lin. ſpec. 1533. *Reich.* 4. 396. *hort. cliff.* 473. *Lour. cochinch.* 680. 835. *Brown. jam.* 91. 7. *Plum. amer.* 14. *t.* 22. *fil.* 23. *t.* 29. *Pet. fil.* 135. *t.* 3. *f.* 12. *Sloan. jam.* 1. 101. *Mor. hiſt.* 3. 583. *n.* 8. (Filix).
β. *Sloan. jam.* 1. 101. *t.* 63.
Fronds ſuperdecompound, pinnas linear, the loweſt pinnate-toothed at the baſe, the terminating ones very long.

21. Pteris mutilata.
Lin. ſpec. 1533. *Reich.* 4. 397. *Brown. jam.* 91. *n.* 8. *Plum. amer.* 21. *t.* 30. *fil. t.* 51. *Pet. fil.* 131. *t.* 3. *f.* 10. (Lonchitis).
Fronds decompound, leaflets pinnate, the loweſt ſemipinnatifid, the terminating ones and thoſe of the baſe very long.

22. Pteris atropurpurea.
Lin. ſpec. 1534. *Reich.* 4. 397. *Gron. virg.* 197.
Fronds decompound pinnate, pinnas lanceolate, the terminating ones longer.

23. Pteris nigra.
Retz. obſ. 6. 38. *n.* 85.
Frond tripinnate, leaflets ovate, the terminating one ſubtrilobate.

24. Pteris arguta.
Vahl ſymb. 1. 84.
P. ſerrulata. *Forſk. deſcr.* 187.
Filix non ramoſa jamaicenſis pediculo albicante, &c. *Pluk. phyt. t.* 290. *f.* 2.
Fronds ſubbipinnate, lower leaflets twice two-parted, pinnas lanceolate ſerrate.

25. Pteris biaurita.
Lin. ſpec. 1534. *Reich.* 4. 397. *Lour. cochinch.* 679. 835. *Brown. jam.* 90. *n.* 4. *Plum. amer.* 10. *t.* 14. *fil. t.* 15. *Pluk. phyt. t.* 401. *f.* 1. *Pet. fil.* 134. *t.* 3. *f.* 11. (Filix).
Fronds pinnate, pinnas pinnatifid, the loweſt two-parted.

26. Pteris quadriaurita.
Retz. obſ. 6. 38. *n.* 86.
Fronds pinnate, pinnas pinnatifid toothed at the top, the four lower pairs bifid.

27. Pteris ſemipinnata.
Lin. ſpec. 1534. *Reich.* 4. 397. *Oſb. it. t.* 3. *f.* 1. *Thunb. jap.* 333.
Fronds ſubbipinnate, the lateral leaflets and the loweſt lobe ſemipinnatifid.

28. Pteris ſerrulata.
Lin. ſyſt. 931. *ſuppl.* 445.
Fronds ſemibipinnate linear ſerrulate.

29. Pteris heterophylla.
Lin. ſpec. 1534. *Swartz obſ.* 397. *Brown. jam.* 91. *n.* 5.
Adiantum hexagonum. *Lin. ſyſt.* 940. 25. *Plum. fil.* 84. *t.* 37.
Ruta muraria major, fol. variis, &c. *Sloan. jam.* 1. 92. *t.* 53. *f.* 2.
Fronds bipinnate, pinnas ovate-oblong ſerrate blunt, the ſertile ones quite entire.

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30. Pteris lunulata.
Retz. obſ. 2. 28. *n.* 99. *t.* 4.
Frond pinnate, pinnules alternate petioled creſcent-ſhaped ſtriated.

31. Pteris eſculenta.
Forſk. prodr. n. 418. *eſcul.* 47.
Fronds ſuperdecompound grooved, leaflets pinnate, pinnas linear decurrent, the uppermoſt ſhorter.

32. Pteris comans.
Forſk. prodr. n. 419.
Fronds pinnate, leaflets pinnatifid, pinnas elongated lanceolate, at the top attenuated ſerrate.

33. Pteris rotundifolia.
Forſk. prodr. n. 420.
Fronds pinnate hiſpid, pinnas ſuboppoſite roundiſh obſoletely crenate.

34. Pteris humilis.
Forſk. prodr. n. 421.
Fronds ſubbipinnate, leaflets oblong gaſhed ſubpinnate, the outmoſt obſoletely crenate confluent.

DESCRIPTIONS, *&c.*

1. Root filiform, long, creeping, tomentoſe, brown. Shoots alſo creeping, filiform, long and hiſpid. Fronds ſome barren, others fertile; the former obovate or ſomewhat oblong, ſmooth, quite entire, blunt, petioled; the latter double the length, lanceolate, blunt, fruiting very cloſely underneath along the wide margin. Native of the Eaſt Indies, Japan, and Cochinchina, on rocks and trees [a].

2. Fronds cordate almoſt quite entire, ſtriated, erect [b].—Native of Domingo, of Algiers, according to Deſfontaines, and according to Loureiro, of Cochinchina.

3. Native of the Weſt Indies [c].

4. Native of Domingo.

5, 6. Natives of the Weſt Indies.

7. Native of the Weſt Indies [d]; according to Linneus: but this is a miſtake, for it is a native of the Eaſt Indies, and the ſame with Marſilea minuta of Linneus's Mantiſſa.

8. It is not known of what country this is a native.

9. Native of Dominica and Martinico in bogs [e]. If it be the ſixth Acroſticum of Browne, it alſo grows in the cooler mountains of Jamaica, and ſeldom riſes above three feet and a half from the ground.

10. Stipe angular, grooved, ſmooth. Frond wholly ſmooth, a foot and half high with the ſtipe. The lower pinnas are in pairs, the reſt are ſimple, attenuated at bottom, a finger's length.—Native of Japan [f].

11. This plant ſeldom riſes above fourteen or ſixteen inches; it is remarkable for its narrow ſimple leaves and undivided ſtalk.—Native of Jamaica and Dominica, in cool moiſt places, and in woods near rivulets [g].

12. Native of Hiſpaniola [h].

13. Root creeping long fibrous black. Fronds five feet long, erect, on round ſmooth grooved long ſtipes. Pinnas linear-lanceolate with a long point, ſmooth, ſtriated tranſverſely, pale green, flat, on ſhort petiols, ſometimes very minutely ſerrate [i].

Browne ſays, it ſprings from a large firm root, and riſes commonly to the height of twelve or ſixteen inches, ſometimes more.

Native of China, Cochinchina and Jamaica.

14. Native of South America.

15. Leaves ſimple, milky white underneath, with a brown down at the margin: the ſtalk is pretty ſlender, and ſeldom ſhoots more than ten or twelve inches above the root [k].

Native of rocks in Dominica, and Jamaica, where Browne ſays it is common in the middle mountains of Liguanee.

16. Pinnas lanceolate or enſiform, narrowed at the baſe; the upper ones connate-ſubdecurrent, the loweſt petioled and often bifid or trifid [l].

Native of the iſlands of Candia and Elba. Vahl gathered it about Naples, Forſkahl in Arabia, and Thunberg at Nagaſaki in Japan.

17. This little plant ſeldom riſes above four or ſix inches from the ground; it is beautifully diſſected, and of a very ſingular form, but varies much in its diviſion and appearance [m].—Native of Jamaica, Dominica and the Society Iſles; Linneus adds Siberia,

[a] Linn. ſpec. Thunb. Lour. [b] Loureiro. [c] Swartz.
[d] Linn. [e] Idem. [f] Thunberg. [g] Browne.
[h] Swartz. [i] Loureiro. [k] Browne. [l] Linn. mant.
[m] Browne.

noticing

noticing that the Siberian plant is smaller and snow-white underneath, with a ferruginous margin: but Swartz affirms that this is certainly different.

18. Frond weak, erect, a foot and half long: pinnas alternate, spreading, scarcely a finger's length; segments subopposite, entire, waved, nerved, smooth; sinuses rounded not acute.—Native of Japan, about Jedo [a].

19. This is our common Fern or Brake, called Braken in the north. The roots are creeping, and when cut obliquely present a kind of representation of the imperial eagle; whence Linnæus's trivial name of *aquilina*. Stem upright, eighteen inches, and in woods three or four feet high, angular, smooth, branched, rigid; all the pinnas sessile, hard, striated, bright green above, glaucous underneath [b]. The fructifications are in rough, tomentose, rufescent parallel lines along the margins of the pinnules, which are rolled back very much so as almost to cover the capsules when ripe [c].

Native of most parts of Europe on heaths and in woods.

A tolerably pure alkali is obtained from the ashes. The common people in many parts of England mix these ashes with water and form them into balls; these balls are afterwards made hot in the fire, and then used to make lye for scouring linen. Fern makes a very durable thatch, and is an excellent litter for horses and cows. Where fuel is scarce, they use it to heat ovens, and to burn limestone; for it affords a very violent heat. In the more inhospitable climates bread is made of the roots [d].

Thunberg informs us, that in Japan the young fronds, before the leaves are displayed, are eaten, and that bundles of them are exposed to sale in the shops during the months of april and may. The woody root is bruised, soaked in water, and boiled; and though quite black, it is eaten by the poorer sort.—Fern it is said may be destroyed by repeated mowings in summer, but the most effectual way is by paring and burning.

20. Native of Jamaica and Dominica. Browne says, it is very common in the mountains of the former, in the most open spots, and that it thrives best in a stiff clay.

21. The lower lateral leaves are longer at the base, pinnate only on the lower side.

Native of the same islands [e], and growing like the preceding, but never rising so high: it loves an open gravelly soil, and is very common on the lower hills of Jamaica [f].

22. Stipe a span high, dark purple, shining. Pinnas rolled back with a wide margin, on longer petioles the lower they are; the lowest petioles augmented with one or two pairs of smaller sessile pinnas.—Native of Virginia [g].

23. Stipe a span high, striated, channelled on one side, smooth and even, black. Branches of the frond opposite and alternate. Pinnules small, ovate, blunt, entire except the end one, which is commonly three-lobed. Fructification marginal, but often filling up the disk so completely, that the nerve of the pinnule only appears.—Native of China near Canton [h].

24. Stipe two feet high, very smooth and even. Frond pinnate: leaflets pinnatifid; the two lowest augmented with two leaflets on the lower side, and hence half bipinnatifid: pinnas smooth, the barren ones serrate to the base, the fruiting only at the tip. It can scarcely be distinguished from the next species, and may perhaps be only a variety of it: the pinnas are smaller, and the last is not elongated so much as in Plumier's figure of the *biaurita*.—Native of Arabia; sent also from Madeira [i].

25. A foot and half high, erect. Pinnas smooth, with linear blunt segments; the lowest divided into two shorter earlets. Fructifications linear [k].

According to Browne, it rises commonly to the height of two feet and a half or better, and is easily distinguished by the regular division of its lower ribs. Native of the West Indies and Cochinchina [l].

26. Stipe four-cornered, even. Pinnas pinnatifid almost to the nerve; segments blunt; the end one lanceolate, acuminate, long, serrate especially towards the tip. It is very distinct from the *biaurita* in size, in the serratures and number of the bifid pinnæ.—Koenig sent it from Ceylon [m].

27. Scape even. Fronds lanceolate, pinnate. Leaflets opposite, remote, pinnatifid: with the terminating apexes elongated: the lower margin of the leaves, and only that, is commonly pinnatifid, but not the upper; hence the leaflets are, as it were, semipinnate: the lowest segment also of the pinnas is longer than the rest, and in like manner semipinnatifid; all the rest being entire and blunt.—Found in China, by Osbeck [n], and in Japan by Thunberg.

28. Stipe half round, a span high, even, green, purple at bottom. Leaflets decurrent, opposite; the lowest unequally five-parted, with cuneiform pinnas, one or two of them elongated; the next similar, decurrent, but three-parted; those of the third or fourth pair simple and a little smaller; the last leaflet an inequal pinna, longer, united to the rest: the barren pinnas very finely serrate, the fertile ones scarcely crenate.—Native of Jamaica [o].

29. This is a very elegant little species, and rises to the height of sixteen or eighteen inches. It is pretty much divided, and the leaves when young are serrate; but as it begins to feed the margin reflects, and none of these are seen.

Native of Jamaica in moist and shady places: common about the cascade in St. Ann's [p].

It has been confounded with *Osmunda crispa* by Linnæus, but ought to be restored to this genus. The fructifications at first are in an interrupted line about the edge; whence *Adiantum hexagonum* of Linnæus is only a synonym of this; but when they are matured they become confluent, and are covered by the reflex margin [q], as Browne remarked.

30. Frond quite simple, a foot long and more. Stipe like ebony, shining, compressed. Pinnas green, even, striated, with the streaks radiating from the petiole to the margin. The outer margin fruiting, almost semicircular; the inner barren, scarcely curved. The upper pinnas are hatchet-shaped, and the terminating one three-cornered. The form of this agrees exactly with *Adiantum lunulatum* of Burman, ind. 235. except the five-flowered margin: but sometimes the margin is cleft into three or more segments; and thus a genuine species of *Pteris* resembles an *Adiantum*. This beautiful Fern was sent to Retzius from Bengal [r].

31. Fronds triply-pinnate, very large, radical, smooth, with the stipe grooved above, all the divisions alternate, except the more universal ones, which are sometimes opposite. Leaflets about two inches long, with the pinnas quite entire, blunt, rolled back at the edge, coriaceous, approximating, the lower ones separate, toothed here and there, or pinnatifid, the outmost gradually shorter. The marginal lines of fructification occupy almost the whole disk, with a thin little membrane, scarcely covering the seeds.

Native of the Society Isles in woods. The roots are eaten there by the poorer sort and when better food is scarce, though they are woody, insipid, and have little nourishment in them. In Otaheite this fern is called *e-Narré*.

32, 33, 34. Natives of New Zealand [s].

PTEROCARPUS. (*From πτερον a wing, and καρπος a fruit; having a winged fruit.*)

Lin. gen. n. 854. *Reich. n.* 925. *Schreb. n.* 1159. *Jacqu. amer.* 283. *Gærtn. t.* 156. *Juss.* 364. *Auctore Loeflingio.*

Class. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminosæ*.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular-bell-shaped, five-toothed: *teeth* acute.

[a] Thunberg. [b] Pollich. [c] Weis. [d] Withering. [e] Linn. [f] Browne. [g] Linn. [h] Linn. [i] Retz. [k] Vahl. [l] Loureiro. [m] Retz. [n] Linn. [o] Linn. suppl. [p] Browne. [q] Swartz. [r] Retzius. [s] Forster.

COR. papilionaceous. *Standard* with an oblong claw, roundiſh-cordate, ſpreading, convex. *Wings* lanceolate, ſhorter than the ſtandard. *Keel* ſhort.

STAM. *Filaments* ten, united. *Authers* roundiſh.

PIST. *Germ* pedicelled, oblong, compreſſed. *Style* awl-ſhaped. *Stigma* ſimple.

PER. *Legume* roundiſh-ſickle-ſhaped, leafy-compreſſed, varicoſe with veiny ſides, woody within, not opening: the cells longitudinal.

SEED ſolitary, kidney-ſhaped, thicker at the baſe, appendicled at the top.

ESSENTIAL CHARACTER.

Cal. five-toothed. *Caps.* ſickle-ſhaped, leafy, varicoſe. *Seeds* few, ſolitary.

SPECIES.

1. Pterocarpus Draco,
Lin. ſpec. 1662. *ſyſt.* 641. *Reich.* 3. 394. *mat. med.* 169. *Jacqu. amer.* 283. *t.* 183. *f.* 92. *pict. t.* 264. *f.* 91.
Draco arbor. *Loeſl. it.* 266. 273. *n.* 147. 168.—indica ſiliquoſa, populi folio. *Comm. hort.* 1. 213. *t.* 109.
Moutouchi ſuberoſa. *Aubl. guian.* 748. *t.* 299.
β. Lingoum. *Rumph. amb.* 2. 205. *t.* 70.
Leaves pinnate.

2. Pterocarpus lunatus.
Lin. ſyſt. 641. *ſuppl.* 317.
Leaves pinnate, ſpines ſtipular, fruits creſcent-ſhaped.

3. Pterocarpus ſantalinus.
Lin. ſyſt. 642. *ſuppl.* 318.
Leaves ternate roundiſh retuſe very ſmooth, petals crenate waved.]

4. Pterocarpus Ecaſtaphyllum.
Lin. ſyſt. 642. *Reich.* 3. 394. *Berg. act. ſtockh.* 1769. 116. *t.* 4. *Swartz obſ.* 275. *Plum. ſpec.* 19. *ic.* 246. *f.* 2. (Spartium.)
Hedyſarum Ecaſtaphyllum. *Lin. ſpec.* 1052. *amoen.* 5. 403. *Mill. dict. n.* 20.
Ecaſtaphyllum. *Brown. jam.* 299.
Leaves ſimple ovate acuminate ſilky underneath.

[5. Pterocarpus buxifolius.
Lin. ſyſt. 642. *Ait. kew.* 3. 7. *Swartz obſ.* 276.
P. glabra. *Lin. ſyſt.* 534. *Reich.* 3. 395. *Plum. ic.* 243. *t.* 246. *f.* 1.
Aſpalathus Ebenus. *Lin. ſyſt.* 647.
Amerimnum Ebenus. *Swartz prodr.* 104. *Dict. noſtr.*
Leaves ſimple aggregate obovate veinleſs.

6. Pterocarpus Rohrii.
Vahl ſymb. 2. 79.
Apalatoa ſpicata. *Aubl. guian.* 382. *t.* 147. *Juſſ. gen.* 365.
Leaves pinnate, ſtipules none, fruits roundiſh.

DESCRIPTIONS, *&c.*

1. This is a tree thirty feet high; the wood white and ſolid, without any reſin; the bark thick, outwardly of a ferruginous gray colour, inwardly ſubferruginous and ſmoothiſh; being cut tranſverſely when freſh, it betrays no marks of redneſs at firſt, but in a ſhort time it is variegated with many blood-red dots, that collect into little globules or tears. The tree itſelf, cut in different parts, in a ſhort time is full of the ſame bloody drops, ſhining and very clear; in the ſpace of ſome minutes, eſpecially if the ſun ſhines hot, they harden, and then are collected, under the name of *Sanguis draconis* or Dragon's blood. The bark wood and leaves have an aſtringent taſte. The long branches are adorned their whole length with alternate ſhining pinnate leaves, on a rib ſeven inches long, grooved above; they have five leaflets on each ſide with an odd one; theſe are lanceolate-oblong, bluntiſh, quite entire, veined, bright green above, pale green beneath, alternate, the outer ones an inch and half long, the middle ones two inches; on round ſhort ſubvilloſe petioles. The bark of the trunk and branches of the root, cut into pieces, is every where uſed by the inhabitants for cleaning their teeth. The reſin was formerly ſent from Carthagena into Spain, but ſince it has fallen into diſuſe in Europe for ſtopping blood, &c. the gathering of it is neglected[c].

[c] Jacquin.

Native of the Weſt Indies; alſo of the Eaſt Indies, unleſs that be a different ſpecies.

2. This is a ſtiffiſh ſhrub, with ſtrong recurved ſtipular ſpines in pairs. Leaves inſerted between the ſpines, alternate, unequally pinnate; leaflets from five to ſeven, alternate, ſubſeſſile, oblong, blunt. Panicle terminating, pubeſcent, ferruginous, compoſed of peduncles in a ſort of ſpike, directed one way, and hence toothed by the falling of the flowers all on one ſide. Spikes bent down and curved in, as in the *Aſperifoliæ*. Corolla white: ſtandard reflex, emarginate: wings oblong, oblique, with the tooth reverſed. Legume compreſſed, reniform or lunate, with the tip almoſt touching the baſe, valveleſs, without any leafy keel. Seed kidney-ſhaped, compreſſed, very large, being the ſize of the whole legume.

Native of South America, where it was found by Dalberg.

3. This is a very lofty tree, with the bark of the Alder, and alternate branches. Leaves alternate, petioled, ternate ſeldom pinnate, with four or five leaflets, which are alternate, petioled, the upper ones in the ſame pinna larger, ovate orbiculate or oblong, quite entire, emarginate or retuſe, very ſmooth above, hoary underneath. Stipules none. Racemes axillary, ſimple or branched, erect. Bractes none. Calyx brown. Standard of the corolla obcordate, erect, with the ſides bent back, toothletted, curled and waved, yellow with red veins: wings ſpreading, toothletted and waved at the edge, yellow: keel oblong, a little inflated, curled at the tip. Filaments yellow: anthers white. Germ hirſute: ſtyle curved. Legume pedicelled, ſmooth, keeled along the lower edge: keel membranaceous, ſomewhat waved, varicoſe with veins under the epidermis, not opening. Seed ſingle, orbicular, compreſſed, ſcarcely emarginate. It varies in the form of the leaves.

This is the true *Santalum rubrum*, which Koenig firſt detected in the Eaſt Indies. The wood is dark red with black veins, heavy, cloſe, capable of a good poliſh, and ſinking in water; it ſtains a beautiful red when moiſtened with water. The ſap yields one ſort of *Sanguis draconis*. Many of the red Indian woods tranſude a blood-red juice through the cleſts of the bark, which hardens into a red reſin, not differing from *Sanguinis draconis*; which therefore is collected from ſeveral trees, and this among others[a]. See *Calamus*, *Dalbergia*, *Dracæna*.

This drug however is chiefly obtained from the fruit of *Calamus Rotang*, expoſed to the ſteam of boiling water; or by boiling it, inſpiſſating the ſtrained decoction, and drying it in the leaves of ſome reed. The beſt kind breaks ſmooth, is of a dark red colour, and when powdered changes to crimſon; it readily melts and inflames: it totally diſſolves in pure ſpirit, and is ſoluble likewiſe in expreſſed oils, but not in water. It has no ſmell, but diſcovers ſome warmth and pungency to the taſte. It has been employed in hæmorrhages and alvine fluxes, but is now rarely uſed internally[b].

4. This is a ſhrub or a ſmall tree, with a branched even ſtem, and ſpreading even branches: branchlets flexuoſe, round, pubeſcent, villoſe. Leaves petioled, alternate, ſpreading in a double row, entire, nerved, pubeſcent. Petioles ſhort, round, thick, pubeſcent. Racemes ſcarcely longer than the petioles, axillary, almoſt ſimple, before flowering time convoluted: flowers numerous, directed one way, on very ſhort peduncles, white. Calyx ferruginous and ſilky on the outſide; the two upper teeth approximating; the three lower equal and acute. Standard of the corolla roundiſh, entire, ſomewhat compreſſed, covering the wings, veined: wings ſickle-ſhaped, contiguous to the keel, which is ovate, concave, bifid at the baſe, emarginate at the tip. Filaments in two bodies, five in each, diſtinct at top: anthers minute, roundiſh. Germ elongated, round: ſtyle curved in, aſcending, the length of the keel. Legume ſuborbicular, compreſſed like a leaf, opening; containing one compreſſed ſeed[c].

Native of the Weſt Indies. Browne ſays, that it is

[a] Linn. ſuppl. [b] Woodville. [c] Swartz.

not uncommon in the low lands about Kingſton, growing chiefly in ſwampy places, and running generally to the length of ſeven or eight feet, in an oblique direction from the root. When the plant is young, the more tender leaves are beſet with down; but this falls off as they grow more hardy, and in time they appear quite ſmooth.—This ſpecies was cultivated by Mr. Miller before 1733. Houſtoun ſent it from Carthagena.

5. See the deſcription of this under *Amerimnum Ebenus*, to which genus Swartz referred it, being very nearly allied to *Amerimnon* of Browne in the flower and fruit. It has ſomething in common with ſeveral plants of this claſs.

Native of the Weſt Indies. Cultivated in 1739 by Mr. Miller. It flowers in july and auguſt[1].

6. This is a tree, with ſmooth round branches, covered with a duſky aſh-coloured bark. Leaves alternate: leaflets three or four pairs, gradually larger outwards, alternate, ovate-oblong, acuminate, quite entire, ſmooth, ſhining, beautifully netted on both ſides with very numerous minute veins. Univerſal petioles often a ſpan long, flexuoſe, grooved above, ſlightly ſtriated beneath: partial petioles two lines long, wrinkled underneath at the inſertion of the leaf. Racemes axillary, ſhorter by half than the leaf, many-flowered: pedicels ſcattered, filiform, one-flowered, with two briſtle-ſhaped bractes in the middle. Flowers nodding. Legume an inch and half in length, ſmooth, veined in the middle, containing only one ſeed.—Found in South America by von Rohr *.

PTEROCEPHALUS. See *Scabioſa*.

PTEROCOCCUS. See *Calligonum*.

PTERONIA. (*From πτερον, a wing.*)

Lin. gen. n. 937. *Reich. n.* 1017. *Schreb. n.* 1265. *Gaertn. t.* 167. *Juſſ.* 174. Pterophorus. *Vaill. act. gall.* 1719.

Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ Diſcoideæ*. *Cinarocephalæ*, Juſſ.

GENERIC CHARACTER.

CAL. *common* imbricate: *ſcales* lanceolate, keeled, acuminate.

COR. *compound* uniform: *corollets* hermaphrodite, tubular, numerous, equal. *Proper* one-petalled, funnel form: *border* five-cleft, acute.

STAM. *Filaments* five, capillary, very ſhort. *Anther* cylindrical, tubular.

PIST. *Germ* oblong. *Style* filiform, the length of the ſtamens. *Stigma* bifid.

PER. none. *Calyx* unchanged.

SEEDS ſolitary, oblong, compreſſed. *Down* ſeſſile, ſubplumoſe, with ſubpilioſe rays.

REC. chaffy, flattiſh: *chaffs* many-parted into briſtles ſhorter than the ſeeds.

ESSENTIAL CHARACTER.

Recept. with many-parted briſtles. *Down* ſubplumoſe. *Cal.* imbricate.

SPECIES.

1. Pteronia camphorata. *Aromatic Pteronia.*
Lin. ſpec. 1176. *Juſſ.* 737. *Reich.* 3. 721. *mant.* 464. *amoen.* 6. *aſr.* 48. *Gaertn. fruct.* 2. 408.
Pterophorus camphoratæ foliis ad margines piloſis. *Vaill. act.* 375.
Conyza aromatica, &c. *Plak. mant. t.* 345. *f.* 56. 2.
Leaves ſcattered ciliate at the baſe.

2. Pteronia oppoſitifolia. *Forked Pteronia.*
Lin. ſyſt. 737. *Reich.* 3. 721. *Gaertn. fruct.* 2. 408.
Cyanus centauroides frutteſcens, lavandulæ folio. *Breyn. prodr.* 1. 28. *t.* 17. *f.* 3. *cent. ſaſc.* 21.
Leaves oppoſite, branches dichotomous divaricating.

3. Pteronia ſtricta. *Cluſter-flowered Pteronia.*
Ait. kew. 3. 162.
Leaves ſcattered and in bundles filiform ſubciliate at the baſe calycine leaflets entire, bellows of the receptacle many parted ſetaceous.

4. Pteronia flexicaulis.
Lin. ſyſt. 737. *ſuppl.* 355.
Leaves filiform ſmooth, calyxes commonly four-cornered, branches ſhort rigid.

5. Pteronia retorta.
Lin. ſyſt. 737. *ſuppl.* 356.
Leaves ovate reflex ſmooth ciliate at the edge and rugged, ſtem erect, calycine ſcales entire.

6. Pteronia hirſuta. *Hairy Pteronia.*
Lin. ſyſt. 737. *ſuppl.* 356.
Leaves lanceolate ſpreading hairy, ſtem procumbent, calycine ſcales entire.

7. Pteronia glabrata. *Smooth Pteronia.*
Lin. ſyſt. 737. *ſuppl.* 356.
Leaves lanceolate ſmooth, calycine ſcales ovate membranaceous.

8. Pteronia inflexa.
Lin. ſyſt. 738. *ſuppl.* 356.
Leaves ovate hairy, calycine ſcales ſubarticulate membranaceous, peduncle bent in.

9. Pteronia ſcariosa.
Lin. ſyſt. 738. *ſuppl.* 356.
Branches ſpiny, calyxes ſcarioſe, leaves oval.

10. Pteronia glomerata.
Lin. ſyſt. 738. *ſuppl.* 356.
Leaves ovate-three-ſided ſmooth, ſtem four-cornered.

11. Pteronia cinerea.
Lin. ſyſt. 738. *ſuppl.* 356.
Leaves oblong tomentoſe, calycine ſcales ovate membranaceous.

12. Pteronia villoſa.
Lin. ſyſt. 738. *ſuppl.* 356.
Leaves lanceolate blunt hairy, calycine ſcales ovate membranaceous.

13. Pteronia membranacea.
Lin. ſyſt. 738. *ſuppl.* 357.
Leaves ovate mealy tomentoſe, calycine ſcales awl-ſhaped ſcarioſe at the edge.

14. Pteronia ſpinoſa.
Lin. ſyſt. 738. *ſuppl.* 357.
Leaves awl-ſhaped ſpineſcent pungent.

15. Pteronia Cephaloides.
Lin. ſyſt. 738. *ſuppl.* 358.
Leaves awl-ſhaped felded together keeled ſerrulate, calyxes oblong terminating very minutely lacerated.

16. Pteronia pallens.
Lin. ſyſt. 738. *ſuppl.* 357.
Leaves filiform ſmooth, calyxes round ovate, ſtem and branches curved in round.

17. Pteronia minuta.
Lin. ſyſt. 738. *ſuppl.* 357.
Leaves linear wandering, flowers axillary.

18. Pteronia faſciculata.
Lin. ſyſt. 73 . *ſuppl.* 357.
Flowers in bundles each of one floret only.

DESCRIPTIONS, &c.

1. This is a ſhrub with rugged branches, three feet high. Leaves linear, very narrow, acute, flat, ſpreading. Flowers terminating, ſolitary, yellow, larger than thoſe of *Santolina* [a]. Receptacle flat, with deep chaffy cells, torn and briſtly at the top, and ſtiffiſh. Seeds ovate-oblong, compreſſed like a lens, ſmooth, of a ſort of cheſtnut colour or ferruginous. Down twice as long as the ſeed, lemon-coloured, caducous: rays filiform-ſetaceous, with longiſh cilias on both ſides or ſubplumoſe, connected at the baſe into a ring [b].—Native of the Cape of Good Hope.

2. This is a ſmall naked ſhrub, a palm in height; with oppoſite, dichotomous branches. Leaves ſmall, ſublanceolate, hoary or ſubtomentoſe. Flowers terminating, ſeſſile, yellow. Corollets deeply divided. Stigmas two, longiſh. Seeds hirſute. Down ſetaceous, hiſpid. Receptacle chaffy. *Dav. Reyen.*

It agrees with the genus of *Stæhelina*, but the down is not branched, nor the anthers tailed, nor the leaves alternate [c].

The flower is one of the largeſt of this order and genus. Calyx cylindrical, imbricate with cartilaginous even ſcales, ſubpubeſcent at the tip, membranaceous-attenuated at the edge. Receptacle honey-combed: cells with very ſhort margins, lacerate-ſetaceous, inclоſing a flatted teat. Seeds oblong, flatted thomb-ſhaped, hirſute, ſilky-white. Down ſetaceous, rigid,

[1] Hort. kew. * Vahl.

[a] Linn. mant. & amoen. [b] Gærtner. [c] Linn. ſyſt.

yellowiſh; with very numerous, ſubplumoſe rays, twice the length of the ſeed, faſtened cloſely to the top of it, but not uniting into a ring.

Pteronia therefore has much affinity with the *Capitatæ*, and accordingly is placed along with them by Juſſieu; but on account of its oppoſite or almoſt acerоſe leaves, and the receptacle not manifeſtly chaffy in all, it may keep its place among the *Diſcoideæ*[2].

3. This, with the two preceding, was introduced from the Cape of Good Hope by Mr. Francis Maſſon in 1774[3].

4 to 8. Found at the Cape of Good Hope by Thunberg.

9. Stem fruteſcent, ſtiff: with the barren branchlets ending in a ſpine. Leaves elliptic, ſeſſile, ſmall, even, quite entire, ſmooth, remote. Calyxes terminating, ſeſſile, cylindrical, imbricate, even, mucronate, ſcarioſe at the tip, with a broadiſh, hyaline, membrane. Diſk yellow, convex.—Native of the Cape of Good Hope.

10, 11, 12, 13. Found at the Cape of Good Hope by Thunberg.

14. Stem ſhrubby, woody, branched, round. Leaves alternate, ſeſſile, diſtant, ſlightly ſtriated, ſpreading very much, rigid, mucronate, permanent. Flowers four at moſt, (peduncled, *Retz.*) ſeſſile in the uppermoſt axils of the leaves, eſpecially at the ends of the branches, imbricate, cylindrical; with blunt ſcales.—Native of the Cape of Good Hope.

15. This is a ſmooth and even proliferous ſhrub. Leaves remotely oppoſite, an inch long, ſerrulate along the edge and keel. Flowers terminating, erect. Calyxes large, thick, imbricate: ſcales ovate, ſcarioſe, blunt, very finely lacerated and ciliate. Seeds obovate, biggiſh. Down ſimple, denſe, faſtigiate. Receptacle naked; and therefore it is rather a *Chryſocoma*. Native of the Cape of Good Hope.

16. This is an unequal ſhrub, with whitiſh branches, like *Galenia*. Leaves oppoſite, linear, ſomewhat branched. Corymbs three-flowered, terminating, yellow.—Native of the Cape.

17. Stems a palm high, with the branches dichotomous above. Leaves alternate or oppoſite, every where ſubpubeſcent. Flowers from the forkings of the ſtem, ſubſeſſile, the ſize of Lithoſpermum ſeeds. Calyx even. Florets minute, few.—Native of the Cape.

18. Stem ſhrubby, dichotomous, with ſcales mucronate on each ſide on the branchlets. Leaves oppoſite, imbricate, erect, an inch long, lanceolate, ſlightly keeled, reſinous. Bundles of flowers faſtigiate, yellow, terminating, ſeſſile. Calyxes oblong, imbricate: leaflets lanceolate, acute.—Found by Thunberg at the Cape of Good Hope.

The habit of theſe plants is ſingular and peculiar; but ſome of the ſpecies having a naked receptacle, ought rather to be placed in the genus Chryſocoma: either therefore a new generic character ſhould be conſtructed for Pteronia, or the natural genus torn aſunder[4].

PTERÓPHORUS. See *Pteronia*.

PTEROSPERMADENDRON. See *Pentapetes* and *Pteroſpermum*.

PTEROSPERMUM. (*Wing-ſeeded.*)

Lin. gen. Schreb. n. 1124. Pteroſpermadendron. *Amm. in Act. Petrop.* Pentapetes. *Lin. zeyl.* 250. *gen. n.* 834. *Reich. n.* 899.

Claſſ. 16. 5. Monadelphia Dodecandria.

GENERIC CHARACTER.

CAL. *Perianth* five-parted: *leaflets* coriaceous, oblong, reflex.

COR. *Petals* five, oblong, ſpreading.

STAM. *Filaments* fifteen, linear, united at the baſe into a tube. *Anthers* oblong, erect. *Ligules* five, longer, coloured, almoſt upright, the length of the corolla, each between every three ſtamens.

PIST. *Germ* roundiſh, pedicelled? *Style* cylindrical, the length of the ſtamens. *Stigma* thickiſh.

PER. *Capſule* pedicelled, woody, ovate, five-celled, the cells two-valved.

SEEDS ſeveral, oblong, compreſſed, with a membranaceous wing.

ESSENTIAL CHARACTER.

Cal. ſingle, five-parted. *Cor.* five-petaled. *Filam.* fifteen, with five ligules, one between every three filaments. *Capſ.* five-celled, with the cells two-valved. *Seeds* many, winged.

SPECIES.

1. Pteroſpermum ſuberifolium.
Pentapetes ſuberifolia. *Lin. ſpec.* 959. *ſyſt.* 619. *Reich.* 3. 331. *amæn.* 1. 407.
Pentapetes. *Lin. zeyl. n.* 250.
Pteroſpermadendrum ſuberis folio anguloſo ſubtus incano, floribus albis. *Amm. act. petrop.* 8. 215. *t.* 14.
Leaves ovate repand.

2. Pteroſpermum acerifolium.
Pentapetes acerifolia. *Lin. ſpec.* 959. *ſyſt.* 619. *Reich.* 3. 331. *amæn.* 1. 407.
Pteroſpermadendrum folio aceris, flore fructuque majore. *Amm. act. petrop.* 8. 216. *t.* 16, 17.
Leaves cordate repand.

DESCRIPTIONS, *&c.*

1. This is a tree, with alternate perennial thick hardiſh leaves, of the ſame ſubſtance with thoſe of the *Ilex* or Holm Oak, irregular or ovate-oblong, narrower towards the baſe, acuminate, from the middle outwards repand, petioled, ſmooth. Flowers axillary, with the appearance of thoſe of Michelia; allied to thoſe of Grewia. Stamens fifteen conjoined, every third barren and longer[5].—Native of the Eaſt Indies.

2. Native of the Eaſt Indies.

PTEROTA. See *Fagara*.

PTHORA. See *Ranunculus*.

PUBETA. See *Duroia*.

PUCCOON. See *Sanguinaria*.

PUDDING-GRASS. See *Mentha Pulegium*.

PULCOLLI. See *Juſticia*.

PULEGIUM. See *Mentha* and *Spermacoce*.

PULICARIA. See *Inula*.

PULLI-SCHOVADI. See *Ipomæa*.

PULMONARIA. (*So named from its being ſuppoſed to be a good remedy in diſorders of the lungs* (pulmones); *or, according to others, from the ſpots on the leaves reſembling thoſe on ſome diſeaſed lungs.*)

Lin. gen. n. 184. *Reich. n.* 196. *Schreb. n.* 244. *Tournef. t.* 55. *Juſſ.* 130. Cerinthoides. *Boerh.*

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Aſperifoliæ*. *Borragineæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-toothed, priſmatic-pentagonal, permanent.

COR. one-petalled, funnel-form: *tube* cylindrical, the length of the calyx: *border* half-five-cleft, blunt, from upright-ſpreading. *Throat* pervious.

STAM. *Filaments* five, in the throat, very ſhort. *Anthers* erect, converging.

PIST. *Germs* four. *Style* filiform, ſhorter than the calyx. *Stigma* blunt, emarginate.

PER. none. *Calyx* unchanged, foſtering the ſeeds at bottom.

SEEDS four, roundiſh, blunt.

OBS. Cerinthoides, B. *was diſtinguiſhed by having the calyx ſhorter than the tube of the corolla.*

ESSENTIAL CHARACTER.

Cal. priſmatic-five-cornered. *Cor.* funnel-form with an open throat.

SPECIES.

1. Pulmonaria anguſtifolia. *Narrow-leaved Lungwort.*
Lin. ſpec. 194. *ſyſt.* 187. *Reich.* 1. 392. *Willd.* 768. *hort. cliff.* 44. *fl. ſuec. n.* 164. *Wither. arr. ed.* 3. 228. *Fl. dan. t.* 483. *Gunn. norv. n.* 1115. *Hall. helv. n.* 598. *Pollich pal. n.* 189. *Roth. germ.* 1. 83. 2. 212. *Hoffm. germ.* 64. *Gmel. ſib.* 4. 73. *Krock. ſilef. n.* 279. *Villars dauph.* 2. 451. *Allion. pedem. n.* 175. *Kniph. cent.* 1. *n.* 70. *Berg. phyt.* 17.

[2] Gærtner. [3] Hort. kew. [4] Linn. ſuppl. [5] Linn. zeyl.

α. Pulmonaria alpina anguſto folio. *Boce. muſ.* 110. *t.* 86.
P. anguſtifolia 2 Cluſii. *Ger.* 662. 2. *emac.* 808. 2.
—potius 3. *Raii hiſt.* 489.
P. anguſtif. *Park. parad.* 248. 3. *t.* 251. *f.* 2.
P. ang. cærulea. *Baub. pin.* 260. *Mor. hiſt. f.* 11. *t.* 29. *f.* 5.
P. 3. auſtriaca. *Cluſ. hiſt.* 2. 169. *ic.*
With the leaves not ſpotted.
β. Pulmonaria ſaccharata. *Mill. dict. n.* 3.
P. 5. pannonica. *Cluſ. hiſt.* 2. 170. *ic.*
P. maxima foliis quaſi ſaccharo incruſtatis. *Pluk. alm.* 359.
With the leaves ſpotted.
Leaves hirſute, ſtem-leaves oblong-lanceolate embracing, root-leaves elliptic.
2. Pulmonaria officinalis. *Common Lungwort.*
Lin. ſpec. 194. *ſyſt.* 187. *Reich.* 1. 393. *Willd.* 768. *hort. cliff.* 44. *fl. ſuec. n.* 163. *mat. med.* 56. *Woodv. med. bot.* 2. 5. *t.* 212. *Huſſ. angl.* 81. *Wither. arr. ed.* 3. 228. *Smith, brit.* 217. *engl. bot. t.* 118. *Abbot, bedf.* 42. *Fl. dan. t.* 482. *Hall. helv. n.* 597. *Hoffm. germ.* 641. *Roth. germ.* 1. 83. 2. 212. *Scop. carn. n.* 194. *Krock. ſileſ. n.* 280. *Villars dauph.* 2. 452. *Allion. pedem. n.* 174. *Blackw. t.* 376. *Sabb. hort.* 2. *t.* 26. *Ludw. edit. t.* 45. *Berg. phyt.* 15. *Plenck, ic.* 73. *Tillands, ic.* 62.
P. altera. *Matth.* 1040. *Camer. epit.* 784.
P. maculoſa. *Lob. obſ.* 317. 1. *ic.* 586. *Ger.* 662. 1. & 663. 4. *emac.* 808. 1. *Raii hiſt.* 488.
P. latifolia mac. *Park. parad.* 251. 1.
P. foliis Echii. *Ger. emac.* 808. *Raii ſyn.* 226.
P. italorum ad Bugloſſum accedens. *Baub. hiſt.* 3. 595.
P. vulgaris maculoſo folio. *Cluſ. hiſt.* 2. 169. 1.
Symphytum maculoſum. *Dod. pempt.* 135. 1.—f. Pulmonaria latifolia. *Baub. pin.* 259. *Mor. hiſt. f.* 11. *t.* 29. *f.* 8.
β. P. vulgaris latifolia flore albo. *Baub. pin.* 259.
White-flowered common Lungwort.
γ. P. non maculoſo folio. *Cluſ. hiſt.* 2. 169. 2. *Baub. pin.* 260. *Knorr. del. rom.* 2. *t.* P. 2. *Kniph. cent.* 1. *n.* 72.
Leaves hirſute, ſtem-leaves ovate-oblong, root-leaves ſubcordate.
[3. Pulmonaria ſuffruticoſa. *Shrubby Lungwort.*
Lin. ſpec. 1667. *ſyſt.* 187. *Reich.* 1. 393. *Willd.* 769.
Lithoſpermum anguſtifolium umbellatum. *Baub. pin.* 258. 517. *Pluk. phyt. t.* 42. *f.* 7. *Bocc. ſic.* 77.
Leaves linear rugged, calyxes avol-ſhaped five-parted.
4. Pulmonaria paniculata. *Panicled Lungwort.*
Ait. kew. 1. 181. *Willd. ſpec.* 769.
Calyxes abbreviated five-parted biſpid, leaves ovate-oblong acuminate ſomewhat hairy.]
5. Pulmonaria virginica. *Virginian Lungwort.*
Lin. ſpec. 194. *ſyſt.* 187. *Reich.* 1. 393. *Willd.* 769. *Ait. kew.* 1. 182. *Mill. fig. t.* 212. *Gron. virg.* 20. *Trew. Ehret.* 11. *t.* 12. *Curt. magaz.* 160.
Symphytum f. Pulmonaria non maculata, fol. glabris acuminatis, flore patulo cæruleo. *Pluk. phyt. t.* 207. *f.* 6. *Mor. hiſt.* 3. 444. *n.* 6.
Calyxes abbreviated very ſmooth, leaves lanceolate bluntiſh.
[6. Pulmonaria ſibirica. *Siberian Lungwort.*
Lin. ſpec. 194. *ſyſt.* 187. *Reich.* 1. 394. *Willd.* 770.
Anchuſa fol. radicalibus cordatis, caulinis ovatis. *Gmel. ſib.* 4. 75. *n.* 15. *t.* 39.
Calyxes abbreviated, root-leaves cordate.
7. Pulmonaria maritima. *Sea Lungwort.*
Lin. ſpec. 195. *ſyſt.* 187. *Reich.* 1. 394. *Willd.* 770. *Huſſ. angl.* 81. *Wither. arr. ed.* 3. 229. *Smith, brit.* 218. *engl. bot. t.* 368. *Curt. lond.* 6. *t.* 18. *Dicks. fasc.* 1. 3. *Lightf. ſcot.* 134. *t.* 7. *Fl. dan. t.* 25. *Gunn. norv. n.* 17. *Hoffm. germ.* 64. *Krock. ſileſ. n.* 281.
Cerinthe fol. ovatis petiolatis. *Lin. hort. cliff.* 48.
C. marit. procumbens. *Dill. elth.* 75. *t.* 65. *f.* 75.
Cynogloſſum proc. glaucophyllum marit. *Pluk. phyt. t.* 172. *f.* 3.
C. perenne marit. proc. *Mor. hiſt.* 3. 450. *f.* 11. *t.* 28. *f.* 12.
Echium marinum. *Raii hiſt.* 500. *ſyn.* 228. *Petiv. brit. t.* 29. *f.* 3. *Sibbald.* 12. 4.
Bugloſſum dulce ex inſulis lancaſtriæ. *Park. theat.* 767. *t.* 766. *f.* 5.
Calyx abbreviated, leaves ovate glaucous, ſtem branched procumbent.]

DESCRIPTIONS, &c.

1. This has leaves much narrower than thoſe of the common ſort, (officinalis, n. 2.) and covered with ſoft hairs, not ſpotted. The ſtalks riſe a foot high, and have narrow leaves on them, of the ſame ſhape with thoſe below, but ſmaller, and almoſt embracing. The flowers are produced in bunches on the top of the ſtalks, like the others: the corollas are red before they expand, but when they are fully blown are of a moſt beautiful blue colour. [It varies with a white flower. Linneus remarks, that it is ſcarcely different from the next ſpecies, except in the narrowneſs of the leaves. Haller ſays it differs from the following in having a higher ſtalk, attaining to three feet; narrower leaves, the lower elliptic and blunt, the upper ſhort, heart-ſhaped, ſeſſile, decurrent into the long petiole, four or five inches in length, and one inch in breadth. Flowers in bundles at the top, with green ſtipules between them. Calyx hirſute, five-toothed, very wide during the maturity of the plant, not divided to the middle.

Native of Sweden, Denmark, Germany, Switzerland, Auſtria, Hungary, France and Italy. It is ſaid by Johnſon, upon Gerarde, to have been found by Mr. Goodyer in a wood by Holbury-houſe, in the New Foreſt, Hampſhire. Mr. Robſon informed Dr. Withering, that he had a ſpecimen ſent him in the year 1783, by the late Mr. Waring, of Leeſcrood in Flintſhire, who found it growing wild on the ruins of the monaſtery Maes Glas. But Dr. Smith thinks that the leaf ſent by Robſon out of Wales, belonged rather to *Symphytum tuberoſum*. Pulmonaria anguſtifolia therefore muſt be conſidered at preſent as a doubtful native of Britain.]

β. Leaves large, ſpear-ſhaped, rough: foot-ſtalks of the lower leaves broad. Stalks a foot high, with ſpear-ſhaped, half-embracing leaves. The leaves are greatly ſpotted with white, appearing as if they were incruſted with ſugar-candy. Flowers in large bunches on the top of the ſtalk. Tube of the corolla longer than the calyx, and the brims ſpreading more than thoſe of the common ſort. The colour is a bright blue; and they appear in april and may.

Native of the mountains of Switzerland, [Auſtria and Hungary. It was cultivated by Mr. Miller in 1731[1].]

2. Root perennial, fibrous. Lower leaves rough, about ſix inches long, and two inches and a half broad, of a dark green on their upper ſide, marked with many broad whitiſh ſpots, but pale and unſpotted on their under ſide. Stalks almoſt a foot high, having ſeveral ſmaller leaves on them ſtanding alternately. The flowers are produced in ſmall bunches at the top of the ſtalks: calyx tubulous, hairy, as long as the tube of the corolla; brims of the petal ſpread open, and ſhaped like a cup, red purple and blue in the ſame bunch.

[Leaves hairy on both ſides: root-leaves petioled, ovate or ſubcordate; ſtem-leaves ovate, ſeſſile, embracing. (Lower leaves much lengthened out at the baſe, of a light green; the upper ones only, which are ovate and rather broad, being ſpeckled with white on the upper ſide: this however is a variable circumſtance.) Stem ſimple, erect, angular and rough. Racemes in pairs, ſhort, terminating. Calyx roughhaired. Corolla blue, before it expands red[a]: varying as the preceding with white flowers.

Native of Europe in woods and ſhady places, flowering from march to may. I found it at La Batie near Geneva in flower, on the 15th of march, 1779. In Britain, though common in every garden, it is unfrequent in a wild ſtate. Mr. Abbot found it between

[1] Hort. kew. [a] Smith.

Thurleigh and Milton-Ernys in Bedfordſhire; Mr. E. Robſon, in Cliff-wood, ſix miles weſt of Darlington; and if this be Goodyer's plant, it is an inhabitant of the New Foreſt. Dr. Milne found it in ſeveral woods of Kent, and between Croydon and Godſtone in Surry.

The leaves, which are the part recommended in medicine, have no peculiar ſmell, but in their recent ſtate manifeſt a ſlightly aſtringent and mucilaginous taſte; hence they are ſuppoſed to be demulcent and pectoral, and have been uſed in hemoptoes, tickling coughs, and catarrhal defluxions upon the lungs.

The name *Pulmonaria* ſeems however to have ariſen rather from the ſpeckled appearance of theſe leaves, reſembling that of the lungs, than from any intrinſic quality which experience has diſcovered to be uſeful in pulmonary complaints [a].

Moſt plants in this natural claſs of *Aſperifoliæ* are far more mucilaginous than this; which according to Linneus, when burnt, affords frequently one ſeventh of its weight in aſhes.

3. Stems woody at bottom, perennial with the leaves. Flowering-ſtems quite ſimple, ſomewhat hairy. Leaves almoſt filiform, ſcattered, hiſpid, long. Flowers in bundles, terminating, with the calyxes ſhorter by half than the corolla.—Found by Seguier and Arduini in the mountains of Italy [b].

4. Native of Hudſon's Bay. Introduced in 1778 by Daniel Charles Solander, L.L.D. It flowers in may and june; and varies from blue to white flowers [c].]

5. Root perennial, thick, fleſhy; ſending out many ſmall fibres. Stalks a foot and half high, dividing at the top into ſeveral ſhort branches. Leaves near the root four or five inches long, two inches and a half broad, ſmooth, of a light green, on ſhort foot-ſtalks: thoſe upon the ſtem diminiſh in their ſize upwards, but are of the ſame ſhape and ſeſſile. Every ſmall branch at the top of the ſtalk is terminated by a cluſter of flowers, each ſtanding upon a ſeparate ſhort peduncle: their calyxes are very ſhort, and are cut into five ſegments almoſt to the bottom; the tube of the flower is long, and at the top ſpreads open in ſhape of a funnel, the brim being entire, but appears five-cornered from the folding of the petal. The moſt common colour of theſe flowers is blue, but there are ſome purple, others red and ſome white: they appear in april, and if they have a ſhady ſituation, will continue in beauty great part of may; and ſometimes are ſucceeded by ſeeds in England. The leaves and ſtalks entirely decay in auguſt, and the roots remain naked till the following ſpring.

It grows upon mountains in moſt parts of North America. The ſeeds were ſent many years ſince by Mr. Baniſter from Virginia, and ſome of the plants were raiſed in the Biſhop of London's garden at Fulham. [According to the Kew catalogue it was cultivated in 1699 in the botanic garden at Chelſea.

Mr. Curtis remarks, that the leaves are glaucous; that the flowers before they expand are of a reddiſh purple colour, but when fully blown become of a light bright blue; and that it is ſaid to vary with white and fleſh-coloured flowers. In favourable ſeaſons, the flower-garden owes much of its gaiety to this elegant plant, at a time when ornament is moſt deſirable.

6. Root perennial. Leaves ſmooth, glaucous. Stem-leaves ovate. Corymbs branched, nodding. It is a middle ſpecies between the preceding and following.—Native of Siberia [d].

7. Root perennial, (or biennial) woody, blackiſh. Stems numerous, procumbent, a foot or more in length, nearly round, leafy, much branched above. Leaves numerous, ſcattered, ſeſſile, pointed, narrowed at the baſe, perfectly entire, ribbed on the under ſide, waved, the point moſt commonly bent back, the upper ſurface rugged with fine prominent points. Racemes leafy, terminating. Flowers on longiſh, ſimple, round peduncles, a little thickened next the flowers, and ſomewhat warted, one or two together, ſometimes axillary, and generally cluſtered about the extremities of the branches. Calyx glaucous, ſhorter than the tube, divided almoſt to the baſe, where it is a little priſmatic, into five ovate acute ſegments. Corolla with a ſhort thick tube, and a ſmall border in five obtuſe ſegments, red at firſt, then blue; orifice a little toothed, but pervious. Stamens inſerted about the middle of the tube, and projecting beyond the orifice. Stigma capitate. The whole plant turns black in drying, unleſs it be firſt immerſed in freſh water for twenty-four hours to extract the ſea ſalt, according to Dillenius [e].

Native of Norway, Iceland, Britain. It is a great ornament of ſandy ſea-coaſts, in Scotland and the north of England; flowering in july. The roots ſtrike deeply into the ſand, or among the pebbles. It is mentioned by Ray as found by Mr. Lawſon at Scrammerſton Mill, between the ſalt-pans and Berwick; alſo near Whitehaven in Cumberland, and againſt Bigger in the Iſle of Walney in Lancaſhire; by Mr. Lhwyd near Treſarthen in Angleſea, and by the river Uyſni in the way from Dinardindle to Clynog in Caernarvonſhire; by Dr. Sibbald in ſeveral places along the ſouth ſide of the Firth of Forth; by Mr. Lightfoot on the coaſt of Fife, near St. Andrew's, &c. in the Iſle of Bute, in Arran at Loch-Ranſa, and at Lamlath, at Icolumb-kill, and at Glen-Elg, in Inverneſſhire, &c.; by Mr. Dickſon at the ferry on the ſea ſhore near Inverneſs; near Maryport in Cumberland by Mr. Harriman; about Aberdeen by Mr. Browne; on the weſt ſhore of the Iſle of Walney by Mr. Atkinſon.

Dr. Blair relates, in his Miſcellaneous Obſervations, p. 55. that he was credibly informed by a gentleman, that in the late famine, one of his farmers being ſtraitened for bread, taking this plant for Colewort, to which it is not unlike in colour, ordered to boil a diſh of it, and gave it to his wife and children, with the ſervants in his family; all of them became very ſick, ſome vomited exceſſively, others ſlept two or three days without intermiſſion, and one or two of them died.—Had Blair related this of his own knowledge, I ſhould have been inclined to believe it; but the gentleman might be miſtaken in the plant; and the Aſperifoliæ, as far as we know, betray no ſymptoms of a narcotic quality.

The four laſt ſpecies are very nearly allied; having an upright ſtem, the tube of the corolla longer than the border, the root-leaves cordate, and the ſtem very much branched; whoever regards them as varieties, will ſcarcely be miſtaken [f].]

PROPAGATION AND CULTURE.

Theſe plants having perennial roots, may be cultivated by parting their roots, which may be done either in the ſpring, or autumn; but if the ground be moiſt into which they are planted, it is better to be done in the ſpring, otherwiſe the autumn is preferable, that the plants may be well rooted before the dry weather comes on in the ſpring, which will cauſe them to flower much ſtronger.

The ſoil in which they are planted ſhould not be rich, but rather a freſh light ſandy ground, in which they will thrive much better than in a richer ſoil, in which they are very ſubject to rot in the winter. They ſhould have a ſhady ſituation, and thrive beſt in a moiſt ſoil, for in a hot dry ſoil they burn and decay in ſummer, unleſs they are duly watered in dry weather. All the early ſorts are better tranſplanted, and parted in autumn, that they may be well rooted to flower ſtrong the following ſpring. The fifth ſort ſhould not have a ſoil too moiſt, for as the roots run deep in the ground, they will be in danger of rotting by much wet.

They may alſo be propagated by ſeeds ſown in autumn, ſoon after they are ripe, where they are to remain, for the ſeedling plants do not ſucceed ſo well when they are tranſplanted. The common ſorts will come up from ſcattered ſeeds.

[5. Mr. Curtis remarks that P. virginica requires a pure air, and a ſituation moderately ſheltered, as the cold cuſterly winds in april, when it is in flower, are apt to deface it.

[a] Woodville. [b] Linn. ſpec. [c] Hort. kew. [d] Linn. ſpec. [e] Curtis and Smith. [f] Linn. ſpec.

7. Gather the seeds as they ripen, for by staying for the last-blown flowers, the seeds from the first will have fallen out: sow them either early in september or the ensuing february, in a pot of earth compofed of three parts sea sand, or common sand, and one part rotten cow-dung, finely sifted; in about six weeks or two months from the february sowing these seeds will vegetate, and in the autumn the plants will be fit to transplant into separate pots, and most of them will flower the ensuing year. Snails and slugs are uncommonly fond of this plant; if therefore it be planted in the open border, it will in all probability be destroyed. Set them with the greenhouse plants, and treat them as such. Water them over the leaves as little as may be, for the water is apt to settle on them in drops, and to leave marks which greatly disfigure them [4].

PULMONARIA. See *Hieracium* and *Lichen pulmonarius*.

PULSATILLA. See *Anemone* and *Atragene*.

PULTENÆA. *(So named by Dr. J. E. Smith, in honour of my much esteemed friend William Pulteney, M.D. of Blandford in Dorsetshire, whose writings have so essentially contributed to the introduction and establishment of Linnean botany in this country.)*

Class. 10. 1. Decandria Monogynia.

GENERIC CHARACTER.

CAL. five-toothed, with an appendage on each side.
COR. papilionaceous; the wings shorter than the standard.
LEGUME of one cell, with two seeds.

SPECIES.

1. Pultenæa stipularis.
Smith, bot. N. Holl. p. 35. t. 12. Curt. magaz. 475.
With linear mucronated subciliated leaves, and solitary two-nerved lacerated stipules.
2. Pultenæa paleacea.
Willdenow, sp. pl. 506.
With linear mucronated smooth leaves, terminal head, and oblong-acuminate toothed bractes longer than the flower.
3. Pultenæa linophylla.
Willdenow, sp. pl. 506. Schrad. et Wendl. sert. hannov. p. 28. t. 18. (bracteata.)
With linear obtuse mucronated strigose leaves, few-flowered terminal heads, and scarious bifid bractes much shorter than the calyx.
4. Pultenæa juncea.
Willdenow, sp. pl. 506.—Sophora juncea. *Schrad. & Wendl. sert. hannov. p. 9. t. 3.*
With filiform leaves with cartilaginous-trifid tips, terminal raceme, unappendiculated cups, and extipulated stem.
5. Pultenæa villosa.
Willdenow, sp. pl. 507.
With oblong hairy leaves, solitary axillary flowers, and villose stem.
6. Pultenæa daphnoides.
Willdenow, sp. pl. 507.
With smooth obovate mucronated leaves, and terminal headed flowers.

DESCRIPTIONS, &c.

1. The stem of this species is shrubby, variously branched, and round; the wood hard and whitish; bark brown, covered more or less with withered bristly stipules: branches long and straight, pointing upwards, clothed with leaves, and terminated by round heads of handsome yellow inodorous flowers. The leaves surround the branches in great numbers without any regular order, and are linear, very narrow, tipped with a little sharp point, entire, smooth, without any projecting vein or nerve, most frequently ciliated with fine stiff hairs. Footstalks very short, pale and smooth, erect at night, by which the leaves become closely pressed to the branch, and imbricated one over the other, though in the day time, and especially in bright sunshine, they spread horizontally. The very remarkable stipules stand solitary just above the insertion of each footstalk, erect and close pressed to the branch, the bark of which they by that means completely conceal; they are brown, of a chaffy texture, lanceolate, cloven, and sometimes laciniated, furnished with two parallel nerves. The flowers are about twenty or more, in a round head, among spreading leaves, and the branch they at first terminate is at length sometimes protruded a little beyond them, by which they become verticillate; each stands on a short, round, smooth flower-stalk, with bractes like the leaves, but smaller, and likewise accompanied with stipules. Calyx slightly campanulate, red, divided half way down into five acute, spreading, ciliated teeth, of which the two uppermost are the shortest and broadest; between them and the next pair stand the two appendages which make a material part of the generic character, and which agree exactly in appearance with the proper teeth, except in being somewhat narrower, and inserted, one on each side, about half way down the entire part of the calyx, to which their lower end is closely applied, so that they make the calyx appear to have seven teeth of equal length. Corolla of five petals. Standard with a firm horizontal claw, its limb erect, round, slightly notched, the two sides generally folded together, deep yellow, with a red semicircular line near the base. Wings nearly linear, obtuse, concave, with a large tooth at the base, deep yellow, horizontal, much shorter than the standard. Keel of two pale yellow obovate concave petals as long as the wings, strongly connected by their lower edge, and with a tooth near their base on the upper. Stamens all nearly equal, somewhat shorter than the keel, a little declining; filaments inserted into the receptacle, cylindrical, tapering to a point: anthers small and roundish: germ small, green, oval, smooth, tipped with a tuft of white hair, and containing the rudiments of two or three seeds: style longer than the stamens, subulate, recurved, smooth: stigma acute. Pod scarcely longer than the calyx, roundish, pointed, turgid, brown, hairy at the extremity, of one cell, containing two seeds on short footstalks, inserted into the upper edge of each valve, near the base. The plant appears to abound in mucilage, especially the leaves.

Native of New Holland. First flowered in England in april 1794. Described by Dr. Smith.

2. Native of New Holland.

3. A shrub of six feet high; upright, stem branching, brown, branches alternate, subdividing into smaller, covered with a silky pubescence. Leaves scattered, thickish, green, paler beneath. Stipules two, opposite, upright, sharp, brown-ferruginous. Head consisting of four or six flowers, upright, sessile, involucrated by bractes, which are imbricate, ovate, bifid, scarious, and reddish-brown. Flowers pale orange: standard marked in the middle by a semilunar radiated purple spot: keel of a purplish violet colour.—Native of New Holland.

4. This, which is described and figured by Schrader as a species of Sophora, is a small upright smooth shrub of about two or three feet high, with simple branches growing at pretty acute angles or upright; the leaves have the appearance of a kind of long green spines, but when the plant is young there are some footstalked oval-lanceolate leaves without stipules. Flowers yellow: standard marked with a semilunar radiated red spot.

Native of New Holland. Bears the open air very well in summer, but should be housed in winter.

5. Native of New Holland.

6. A shrub of about three feet high, with an upright, silky, branching stem; leaves alternate and silky; heads consisting of six or eight flowers, with silky involucre, and hollow hairy stipule.—Native of New Holland.

PUMILEA. See *Turnera*.

PUMILIO. See *Cucubalus*.

PUMPELMUS. See *Citrus*.]

PUMPION or PUMPKIN. See *Cucurbita*.

PUNICA *(of Pliny. So named from its place of growth; Linn. &c. or from the punicean or red appearance of its flowers and fruit.* Miller.)

Lin. gen. n. 618. Reich. n. 673. Schreb. n. 847. Tournef. t. 407. Juss. 325. Gærtn. t. 38.

Class. 12. 1. Icosandria Monogynia.

Nat. order of *Pomaceæ. Myrti*, Juss.

[4] Curtis, lond.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, five-cleft, acute, coloured, permanent.

COR. *Petals* five, roundiſh, from upright ſpreading, inſerted into the calyx.

STAM. *Filaments* numerous, capillary, ſhorter than the calyx, and inſerted into it. *Anthers* ſomewhat oblong.

PIST. *Germ* inferior. *Style* ſimple, the length of the ſtamens. *Stigma* headed.

PER. *Pome* ſubglobular, large, crowned with the calyx, divided into two chambers by a tranſverſe partition, the upper having about nine, the lower about three cells: *partitions* membranaceous.

SEEDS very many, angular, ſucculent. *Receptacle* fleſhy, ſcrobicular, dividing each cell of the pericarp two ways.

OBS. *Botaniſts paint and deſcribe five piſtils, I have always met with no more than one.*

ESSENTIAL CHARACTER.

Cal. five-cleft, ſuperior. *Petals* five. *Pome* many-celled, many-ſeeded.

SPECIES.

1. Punica Granatum. *Common Pomegranate Tree.*
   Lin. ſpec. 676. *fyſt.* 462. *Reich.* 2. 480. *Willd.* 981. *bort. cliff.* 134. *upſ.* 122 *mat. med.* 123 *Woodv. med. bot.* 158. *t.* 58. *Gærtn. fruct.* 1. 183. *Hall. helv. n.* 1098. *Scop. carn. n.* 585. *Villars dauph.* 3. 530. *Allion. pedem. n.* 1804. *Gron. orient.* 144. *Gmel. it.* 3. 33. *Ludw. edit.* 1. 13. *Blackw. t.* 97. & 145. *Knipb. cent.* 2. *n.* 64. *Mill. illuſtr. Mill. fig.* 213. *Plenck, ic.* 376. *Regnault bot. Ebret, dec. t.* 71. 72.
   Punica quæ malum granatum ſert. *Cæſalp.*
   P. ſylveſtris. *Cord. hiſt.* 184. *Tournef. inſt.* 636.
   P. malus. *Dalech. hiſt.* 303.
   Malus punica. *Camer. epit.* 130. 131.
   Malus punica ſylveſtris & ſativa. *Bauh. pin.* 438. *Raii hiſt.* 1462. 1. 2.
   Malus granata ſ. punica. *Ger.* 1262. *emac.* 1450. *f.* 1. 2. *Park. parad.* 428. *t.* 429. *f.* 4.
   β. Floribus plenis. *Double-flowered Pomegranate Tree.*
   Malus punica ſylveſtris major, ſ. Balauſtium majus, —& minus. *Park. parad.* 430. *Raii hiſt.* 1463. 3. 4.
   Balauſtia flore pleno majore & minore. *Bauh. pin.* 438. *Knorr. del.* 1. *t.* 5.
   Balauſtia. *Ger.* 1262. *emac.* 1450.
   Leaves lanceolate, ſtem arboreous.
2. Punica nana. *Dwarf Pomegranate Tree.*
   Lin. ſpec. 676. *fyſt.* 462. *Reich.* 2. 481. *Willd.* 981. *Du Roi harbecc.* 2. 204. *Brown. jam.* 239.
   P. americana nana ſ. humillima. *Tournef. inſt.* 636. *Dubam. arb.* 9. *Aubl. guian.* 513.
   Leaves linear, ſtem ſhrubby.

DESCRIPTIONS, *&c.*

1. This tree riſes with a woody ſtem eighteen or twenty feet high, ſending out branches the whole length, which likewiſe put out many ſlender twigs, rendering it very thick and buſhy. Some of theſe are armed with ſharp thorns. The leaves are narrow ſpear-ſhaped, about three inches long, and half an inch broad in the middle, drawing to a point at each end; they are of a light lucid green, and ſtand oppoſite. The flowers come out at the ends of the branches, ſingly or three and four together; frequently one of the largeſt terminates the branch, and immediately under that are two or three ſmaller buds, which continue a ſucceſſion of flowers for ſome months. The calyx is very thick and fleſhy, and of a fine red colour. The petals are ſcarlet.

[The fruit, according to Linneus is a pome, but according to Gærtner an inferior berry, crowned with the tube of the calyx, which is ſharply toothed, globular a little flatted, covered with a hard coriaceous rind including a pulp, divided into two unequal chambers by a tranſverſe diaphragm. The upper chamber is larger, with from ſeven to nine cells, ſeparated from each other by a very thin membranaceous partition: the lower chamber is much ſmaller, hollowed conically upwards, divided into three cells by very tender membranaceous partitions. In the upper chamber the receptacles are wedge-ſhaped proceſſes of a fleſhy ſubſtance, tending from the walls of the berry towards the axis, and hollowed on every ſide into little pits, into which the ſeeds are inſerted: in the lower chamber the proceſſes are irregular, or it is the bottom of the berry, hollowed into many cells irregularly, in which the ſeeds are fixed. Theſe are variouſly angular, pellucid, commonly tinged with red, and ſhining like cryſtal *.]

Native of Spain, Portugal, Italy, Barbary, Perſia, Japan, China, Cochinchina, &c. In the Weſt Indies, where it is ſuppoſed to have been introduced from Europe, the fruit is larger and better flavoured.

The varieties are—

The wild Pomegranate with ſingle and double flowers.

The ſweet Pomegranate.

The ſmall-flowering Pomegranate with ſingle and double flowers.

The Pomegranate with ſtriped flowers.

[The rind of the fruit, and the flowers are the parts directed for medicinal uſe. They are both powerful aſtringents, and have long been ſucceſsfully employed as ſuch both internally and externally, in gargles, in diarrhœa, &c. The doſe in ſubſtance is from half a dram to a dram; in infuſion or decoction, to half an ounce †.

It was cultivated in 1596, by Gerarde ‡.

The wild, I think, (ſays Parkinſon) was never ſeen in England, before John Tradeſcante my very loving good friend brought it from the parts beyond the ſeas, and planted it in his Lords garden at Canterbury.]

2. The dwarf Pomegranate ſeldom riſes more than five or ſix feet high. The flowers are much ſmaller than thoſe of the common ſort; the leaves are ſhorter and narrower; the fruit is not larger than a nutmeg, and has little flavour: but it may be kept within compaſs; and in the Weſt Indies, where it is a native, and is planted for hedges, it continues flowering great part of the year.—[It is cultivated in Cochinchina, according to Loureiro.]

PROPAGATION AND CULTURE.

The ſingle Pomegranate is now pretty common in the Engliſh gardens, where formerly it was nurſed up in caſes, and preſerved in green-houſes with great care (as was alſo the double flowering kind); but they are both hardy enough to reſiſt the ſevereſt cold of our climate in the open air; and, if planted againſt warm walls in a good ſituation, the firſt will often produce fruit, which in warm ſeaſons will ripen tolerably well; but as theſe fruits do not ripen till late in the autumn, they are ſeldom well taſted in England, for which reaſon the ſort with double flowers is commonly preferred to it. The ſort with ſweet fruit, as alſo the wild ſort, are leſs common in the Engliſh gardens than the former two.

Theſe plants may be eaſily propagated by laying down their branches in the ſpring, which in one year's time will take good root, and may then be tranſplanted where they are deſigned to remain. The beſt ſeaſon for tranſplanting theſe trees is in ſpring, juſt before they begin to ſhoot; they ſhould have a ſtrong rich ſoil, in which they flower much better, and produce more fruit than if planted on dry poor ground; but in order to obtain thoſe in plenty, there ſhould be care taken in the pruning of theſe trees, for want of which we often ſee them very full of ſmall ſhoots, but do not find many flowers produced upon them; therefore I ſhall ſet down directions for pruning theſe trees, ſo as to obtain a great quantity of flowers and fruit.

The flowers of this tree, always proceed from the extremity of the branches which are produced the ſame year. This therefore directs, that all weak branches of the former year ſhould be cut out, and that the ſtronger ſhould be ſhortened in proportion to their ſtrength, in order to obtain new ſhoots in every part of the tree. The branches may be laid in againſt the wall about four or five inches aſunder; for, as

* Gærtner. † Woodville. ‡ Hort. kew.

their

their leaves are ſmall, there is not a neceſſity of allowing them a greater diſtance. The beſt time for this work is about Michaelmas, or a little later, according to the mildneſs of the ſeaſon, for if they are left until ſpring before they are pruned, they ſeldom put out their ſhoots ſo early, and the earlier they come out, the ſooner the flowers will appear, which is of great conſequence where fruit is deſired. In ſummer they will require no other dreſſing, but to cut off all vigorous ſhoots which grow from the wall, and never produce flowers (for it is the middling ſhoots only which are fruitful;) and when the fruit is formed, the branches on which they grow ſhould be faſtened to the wall to ſupport them, otherwiſe the weight of the fruit, when grown large, will be apt to break them down.

Though, as I ſaid before, the fruit of this tree ſeldom arrives to any perfection in this country, ſo as to render it valuable; yet, for the beauty of its ſcarlet-coloured flowers, together with the variety of its fruit, there ſhould be one tree planted in every good garden, ſince the culture is not great which they require; the chief care is to plant them upon a rich ſtrong ſoil, and in a warm ſituation. Upon ſome trees which had theſe advantages, I have obtained a great quantity of fruit which have arrived to their full magnitude, but I cannot ſay they were well flavoured; however, they made a very handſome appearance upon the trees.

The double flowering kind is much more eſteemed than the other in this country for the ſake of its large, fine, double flowers, which are of a moſt beautiful ſcarlet colour; and, if the trees are ſupplied with nouriſhment, will continue to produce flowers for two months ſucceſſively, which renders it one of the moſt valuable flowering trees yet known. This muſt be pruned and managed in the ſame manner as hath been already directed for the fruit-bearing kind, but this ſort may be rendered more productive of its beautiful flowers by grafting it upon ſtocks of the ſingle kind, which will check the luxuriancy of the trees, and cauſe them to produce flowers upon almoſt every ſhoot; by which method I have had a low tree, which was planted in the open air, extremely full of flowers, which made a very fine appearance.

2. The dwarf Pomegranate may be propagated by layers, like the former, but muſt be planted in pots filled with rich earth, and preſerved in a greenhouſe. In the ſummer, when the flowers begin to appear, if the plants are expoſed to the open air, the buds will fall off without opening; they ſhould be placed therefore in an airy glaſs caſe, and a large ſhare of air ſhould be given them every day in warm weather. By this treatment the plants may be continued in flower upwards of three months, and will make a fine appearance.

[PURGING NUT. See *Iatropha*.
PURPLE APPLE. See *Annona*.
PURPLE CHICKWEED. See *Arenaria rubra*.]
PURSLANE. See *Portulaca*.
[PURSLANE, SEA. See *Atriplex*.
PURSLANE TREE. See *Portulacaria*.
PUSÆTHA. See *Mimoſa*.
PUTUMBA. See *Verbeſina*.]
PYRACANTHA. See *Meſpilus*.
[PYRACANTHUS. See *Celaſtrus*.
PYRETHRUM. See *Anthemis*, *Chryſanthemum*, *Santolina*, *Spilanthes*.]
PYROLA (*Dimin. from Pyrus; the leaves bearing ſome reſemblance to thoſe of the Pear.*)
Lin. gen. n. 554. *Reich. n.* 598. *Schreb. n.* 752. *Tournef. t.* 134. *Juſſ.* 161. *Gærtn. t.* 63.
Claſſ. 10. 1. Decandria Monogynia.
Nat. order of *Bicornes*. *Ericæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, very ſmall, permanent.
COR. *Petals* five, roundiſh, concave, ſpreading.
STAM. *Filaments* ten, awl-ſhaped, ſhortert han the corolla. *Anthers* nodding, large, two-horned upwards.
PIST. *Germ* roundiſh, angular. *Style* filiform, longer than the ſtamens, permanent. *Stigma* thickiſh.
PER. *Capſule* roundiſh, depreſſed, five-cornered, five-celled, five-valved, opening at the corners: *partitions* contracted.
SEEDS numerous, chaffy.
OBS. *Stamens and ſtyle in ſome upright, in others declining to one ſide, in others ſpreading. The figure of the ſtigma is different in different ſpecies.*

ESSENTIAL CHARACTER.

Cal. five-parted. *Petals* five. *Capſ.* ſuperior, five-celled, opening at the corners, many-ſeeded. *Anthers* with two pores.

SPECIES.

1. Pyrola rotundifolia. *Round-leaved Winter-green.*
Lin. ſpec. 567. *ſyſt.* 408. *fl. lapp.* 169. *ſuec. n.* 360. *mat. med.* 116. *amoen. t.* 156. *Gærtn. fruct. t.* 303. *Hudſ. angl.* 175. *Wither. arr. ed.* 3. 400. *Smith, brit.* 444. *engl. bot. t.* 213. *Lightf. ſcot.* 218. *Hall. helv. n.* 1010. *Pollich pal. n.* 395. *Fl. dan. t.* 110. *Gmel. ſib.* 4. 128. *Pallas, it.* 3. 287. *Krock ſileſ. n.* 627. *Villars dauph.* 3. 587. *Allion. pedem. n.* 1610. *Blackw. t.* 594. *Plenck, ic.* 335.
Pyrola. *Camer. epit.* 723. *Dod. pempt.* 138. *Bauh. hiſt.* 3. 535. *Ger.* 330. 1. *emac.* 408. 1. *Matth.* 982. *Raii hiſt.* 1233. *ſyn.* 363. *Lob. obſ.* 157. 2.
P. vulgatior. *Cluſ. hiſt.* 2. 116. 3. *Mor. hiſt. ſ.* 12. *t* 10. *f.* 1.
P. vulgaris. *Park. theat.* 508.
P. rotundifolia major. *Bauh. pin.* 191.
P. noveboracenſis. *Cold. noveb.* 99.
P. folio rotundo. *Rivin. pent. t.* 137.
Limonium. *Fuchſ hiſt.* 467. *Lonic.* 186.
L. ſylveſtre. *Trag. hiſt.* 707.
Stamens aſcending, piſtil declining, raceme many-flowered.
[2. Pyrola minor. *Leſſer Winter-green.*
Lin. ſpec. 567. *ſyſt.* 408. *Reich.* 2. 100. *fl. ſuec. n.* 361. *Act. ſtockh.* 1741. *p.* 192. *Hudſ. angl.* 176. *Wither. arr. ed.* 3. 401. *Smith, brit.* 444. *engl. bot. t.* 158. *Lightf. ſcot.* 218. *Sibth. oxon. n.* 399. *Abbot, bedf.* 92. *Fl. dan. t.* 55. *Hall. helv. n.* 1009. *Gmel. ſib.* 4. 128. *Scop. carn. n.* 484. *Pollich, pal. n.* 396. *Krock. ſileſ. n.* 628. *Villars dauph.* 3. 587. *Allion. pedem. n.* 1611. *Knph. cent.* 2. *n.* 82. *Rivin. pent. t.* 136. *f.* 1. *Raii ſyn.* 363.
Stamens and piſtil ſtraight, flowers in racemes diſperſed.]
3. Pyrola ſecunda. *Notch-leaved Winter green.*
Lin. ſpec. 567. *ſyſt.* 408. *Reich.* 2. 300. *fl. ſuec. n.* 362. *lapp. n.* 168. *Hudſ. angl.* 176. *Wither. arr. ed.* 3. 401. *Smith, brit.* 445. *engl. bot. t.* 517. *Lightf. ſcot.* 219. *Dickſ. hort. ſicc.* 5. 8. *Fl. dan. t.* 402. *Scop. carn. n.* 485. *Pollich pal. n.* 397. *Hall helv. n.* 1008. *Krock. ſileſ. n.* 629. *Villars dauph.* 3. 587. *Allion. pedem. n.* 1612.
P. folio ſerrato. *Bauh. hiſt.* 3. 536. 1. *Raii hiſt.* 1233.
P. fol. mucronato ſerrato. *Bauh. pin.* 181. *Mor. hiſt. ſ.* 12. *t.* 10. *f.* 4.
P. tenerior. *Park. theat.* 509. 3.
P. ſecunda tenerior. *Cluſ. hiſt.* 2. 117. *Ger. emac.* 408. 2.
Ambroſia montana. *Dalech. hiſt.* 1148.
Raceme one-ſided.
[4. Pyrola umbellata. *Umbelled Winter-green.*
Lin. ſpec. 567. *Reich.* 2. 300. *fl. ſuec. n.* 363. *Gmel. ſib.* 4. 129. *n.* 18. *Pollich pal. n.* 398. *Krock. ſileſ. n.* 630.
P. fruteſcens arbuti flore. *Bauh. pin.* 191. *Mor. hiſt. ſ.* 12. *t.* 10. *f.* 5.
P. 3. fruticans. *Cluſ. hiſt.* 2. 117.
Peduncles in a ſort of umbel.]
5. Pyrola maculata. *Spotted-leaved Winter-green.*
Lin. ſpec. 567. *Reich.* 2. 300. *Gron. virg.* 48. *Petiv. muſ.* 675. *Pluk. mant. t.* 349. *f.* 4.
Peduncles two-flowered.
6. Pyrola uniflora. *One-flowered Winter-green.*
Lin. ſpec. 568. *ſyſt.* 409. *fl. lapp. n.* 167. *ſuec. n.* 364. *Wither. arr. ed.* 3. 401. *Smith, brit.*

446. *engl. bot. t.* 146. *Fl. dan. t.* 8. *Hall. helv. n.* 1011. *Gmel. sib.* 4. 129. *Pallas, it.* 3. 287. *Scop. carn. n.* 486. *Pollich pal. n.* 399. *Krock. silef. n.* 631. *t.* 1. *Villars dauph.* 3. 588. *Allion. pedem. n.* 1613.

P. rotundifolia minor. *Baub. pin.* 191. *Mor. hist.* 3. *f.* 12. *t.* 10. *f.* 2.

P. quarta minima. *Clus. hist.* 2. 118. *Ger. emac.* 408.

P. minima alpina. *Baub. hist.* 3. 536.

P. flore singulari. *Riv. pent. t.* 139. *f.* 1.

Peduncle one-flowered.

DESCRIPTIONS, *&c.*

1. Root creeping. Stems angular, short, leafy. Leaves alternate, petioled, roundish, obsoletely serrate, very smooth. Peduncle terminating, a span long, with scattered bractes. Raceme terminating, almost upright, many-flowered. Pedicels alternate, with a lanceolate bracte at the base. Flowers nodding, white. Stamens ascending to the upper side of the flower. Anthers bent in and hanging down, four-grooved, awnless, with two subtubular pores at the base. Germ depressed, five-grooved. Style declining, recurved at the tip, longer than the stamens. Stigma wheel-shaped, five-tubercled [a]. Capsule globular, umbilicated, rounded-five-cornered, five-celled, five-valved: partitions contrary to the valves. Receptacle five-lobed, fungous, fastened to the axis; with the lobes convex, attenuated downwards, hanging down within the cells. Seeds very numerous and very small, consisting of a globular nucleus, within an arilius, shaped like sawdust [b].

Leaves and flowers larger than in the next species. Calyx longer and more lanceolate; but the essential difference consists in the stamens being all bent as if for shelter towards the upper side of the flower; while the style, much longer than that of P. minor, is curved downwards in as singular a manner, and again recurved to catch the pollen. The stigma terminates in five blunt tubercles [a].

Native of the northern parts of Europe, Germany, Switzerland, the South of France and the North of Italy. In Britain not common: found on a common at Bradwell near Gorleston in Suffolk, by Mr. Wigg. In some woods of Scotland by Mr. Donn. It flowers in july.

2. This has the habit of the preceding, but is smaller. Peduncle almost naked, or only with a single bracte. Raceme erect. Flowers smaller, often reddish. Stamens spreading on every side. Pores of the anthers dilated, not tubular. Style very short, straight. Stigma peltate [c].

Native of the north of Europe: in Scotland and the north of Yorkshire; in Stokenchurch woods Oxfordshire; Whipsnall and woods about Luton, found by Mr. Abbot; near Tring in Hertfordshire, by Mr. Woodward. It is the species found in most of the places of growth mentioned for P. rotundifolia, as Hackfall woods, &c. It is in a manner naturalized in the Duke of Portland's wood at Bulstrode, where it was planted by Mr. Lightfoot [a].

3. Roots small and fibrous. Stems procumbent, alternately branched, with the branchlets erect and leafy. Leaves on longish petioles, spreading, ovate, acute, finely serrate, netted with veins, smooth on both sides, of a bright pleasant green. Peduncles terminating, solitary, with a few scattered bractes. Racemes many-flowered. Flowers all leaning to one side, greenish white, a little drooping, each having a bracte at the base of the pedicel. Calyx small. Petals oblong, concave. Anthers as in P. minor. Style long, straight, permanent. Stigma peltate, gibbous [a].

Native of woods in the north of Europe; and even in Switzerland, France and Italy. In fir and birch woods in the highlands of Scotland. Ray had it from Yorkshire. Mr. Miller found it in Westmoreland.

4. Root very long. Stem upright or a little decumbent at the base, naked at bottom hard and woody, roughened here and there with tubercles. Leaves opposite, or heaped in whorls or scatteringly in the middle of the stem and branches, cuneiform-lanceolate, blunt, serrate, rigid, dark green above, pale green beneath, smooth, shining, hard, decurrent into the petiole, subsessile, from one to two inches in length, from four to six lines in width, broader at the top, narrower at the base. The common peduncle is continued from the stem and branches, and at the top of it are three or four peduncles bearing each one flower, forming a sort of umbel and hanging down. Flowers reddish white. Anthers whitish. Stigma capitate, obtuse [a]: according to Retzius, subsessile, large, orbicular, hollowed in the middle.

Native of Europe, Asia and North America, in woods, particularly fir woods, and such as are very old, shady and desert. Indeed all the Pyrolas, as Linnæus remarks, delight in deep shade and a rocky or barren soil.]

5. Root woody. Stems two or three, woody, a foot and half high. Leaves stiff, two or three inches long, an inch broad near the base, ending in acute points, and having some sharp indentures on their borders; the midrib is remarkably broad and very white, as are also the veins which run from it. The flowers are produced at the end of the stalk on slender peduncles about three inches long, each sustaining two small pale-coloured flowers at the top. It flowers in june.

6. The long branched roots run deep among moss in moist alpine woods. Every part is smooth. Stems short, simple, angular, leafy. Leaves obovate, blunt, serrulate, smooth, petioled. Peduncle solitary, longer than the leaves, upright, bearing one flower, larger than in the other species, of great elegance, possessing all the fragrance of Lily of the valley. Both corolla and calyx sometimes streaked externally with red. Linnæus and Haller have observed that the stamens are not placed regularly with respect to the petals, some of the latter having three stamens next them, others two, and others but one. The anthers are of a most curious figure, four-lobed, with two tubes at the base, by which probably the pollen is discharged. The style is straight. The stigma resembles a five-rayed crown [a].

Native of woods in the northern parts of Europe: in Germany, Carniola, and even the South of France and the north of Italy. In Britain it was not known to grow wild till Mr. James Hoggan found it about the year 1783, on the islands of Harris and Bernera among the Hebrides; and Mr. James Hoy in fir woods near Brodie-house in Moray [a].

The species may be distinguished by the stigma; which in *rotundifolia* is incrassated, five-toothed, with the teeth upright and acute. That of *uniflora* exactly resembles this, except in being larger and peltate. In *minor* it is peltate, convex, five-lobed. So it is in *secunda*; but in the latter it is punched with five pores. In *umbellata* it is subsessile, large, and hollowed in the middle [a].]

PROPAGATION AND CULTURE.

These plants are all very difficult to cultivate in gardens, for as they grow on very cold hills, and in mossy moorish soil; they seldom continue long, when removed to a better soil, and a warmer situation.

The best time to transplant them into gardens is about michaelmas, when the roots should be taken up with balls of earth to them, and planted in a shady situation, and on a moist undunged soil, where they should be frequently watered in dry weather. Or they may be planted in pots, filled with the same earth in which they grow, placed in a shady situation, in pans of water, or at least constantly watered in dry weather.

[PYROLA. See *Cornus, Parnassia, Satyrium, Trientalis.*

PYROLA AFFINIS. See *Epigæa.*

PYRO SIMILIS. See *Laurus Persea.*

[a] Smith. [b] Gærtner. [c] Engl. bot. [d] Smith. [e] Idem. [f] Idem. [g] Pollich. [h] Smith. [i] Retzius. [k] Idem.

PYROSTRIA. (Pyrus ſtriata; *the fruit being like a pear, but ſtriated.*)
Willd. ſpec. 614. *Juſſ. gen.* 206.
Claſſ. 4. 1. Tetrandria Monogynia.
Nat. order of *Rubiaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. very ſmall, four-toothed.
COR. bell-ſhaped, five-cleft, tomentoſe in the throat.
STAM. four.
PIST. one. *Stigma* capitate.
PER. *Drupe* pear-ſhaped, inferior, ſmall, eight-ſtreaked, not crowned.
SEED. *Nuts* eight, one-ſeeded.

SPECIES.

1. Pyroſtria ſalicifolia.
Willd. ſpec. 614. *Lamarck, encycl. t.* 68. *f.* 4.

DESCRIPTION, *&c.*

Leaves oppoſite, petioled, bluntiſh, attenuated at the baſe, quite entire. Peduncles axillary, three or four-flowered[t].
It is a ſmall tree. Peduncles one, or many-flowered. Number of cells ſometimes various. Stipules caducous[t].—Native of the iſland of Mauritius.

PYRROCHITON. See *Ornithogalum.*]

PYRUS. (*Pirus of Pliny. Suppoſed to be from* πυρ, *fire; the fruit drawing up to a point, like flame.*)
Lin. gen. n. 626. *Reich. n.* 682. *Schreb. n.* 858. *Tournef. t.* 404. *Juſſ.* 335. *Gærtn. t.* 87.
Malus. *Tournef. t.* 406. *Juſſ.* 334. Cydonia. *Tournef. t.* 405. *Juſſ.* 335.
Claſſ. 12. 4. Icoſandria Pentagynia.
Nat. order of *Pomaceæ. Roſaceæ*, Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, concave, five-cleft, permanent: *ſegments* ſpreading.
COR. *Petals* five, roundiſh, concave, large, inſerted into the calyx.
STAM. *Filaments* twenty, awl-ſhaped, ſhorter than the corolla, inſerted into the calyx. *Anthers* ſimple.
PIST. *Germ* inferior. *Styles* five, filiform, the length of the ſtamens. *Stigmas* ſimple.
PER. *Pome* roundiſh, umbilicate, fleſhy, with five membranaceous cells.
SEEDS ſome, oblong, blunt, acuminate at the baſe, convex on one ſide, flat on the other.
OBS. *It is ſurpriſing there has been a general conſent to ſeparate this well known genus into three, by making genera of ſpecies, and ſpecies of varieties.*

ESSENTIAL CHARACTER.

Cal. five-cleft. *Petals* five. *Pome* inferior, five-celled, many-ſeeded.

SPECIES.

1. Pyrus communis. *Common Pear Tree.*
Lin. ſpec. 686. *Reich.* 2. 500. *Willd.* 1016. *arb.* 260. *hort. cliff.* 190. *upſ.* 130. *ſuec. n.* 436. *Hudſ. angl.* 216. *Wither. arr. ed.* 3. 462. *Smith, brit.* 531. *Relh. cant. n.* 361. *Sibth. oxon. n.* 451. *Hall. helv. n.* 1096. *Pollich pal. n.* 477. *Scop. carn. n.* 598. *Hoffm. germ.* 173. *Roth. germ.* 1. 215. 2. 548. *Krock. ſilef. n.* 760. *Villars dauph.* 3. 543. *Black. t.* 453. *Du Roi barbec.* 2. 207. *Plenck, ic.* 395.
Pirus Achras. *Gærtn. fruct.* 2. 44.
Sorbus Pyrus. *Crantz. auſtr.* 93.
α. P. Pyraſter. *The Wild Pear Tree.*
P. ſylveſtris. *Bauh. pin.* 439. *Dod. pempt.* 800. *Ger.* 1271. *emac.* 1457. *Park. theat.* 1500. 2.
Pyra. *Matth.* 251.
Pyraſter ſ. Pyrus ſylveſtris. *Bauh. hiſt.* 1. 57. *Raii hiſt.* 1451. *ſyn.* 452.
β. Pyrus ſativa. *The Cultivated Pear Tree.*
Bauh. pin. 439. *hiſt.* 1. 56. *Raii hiſt.* 1450. *ſyn.* 452. *Ger.* 1267. *emac.* 1456. *Park. theat.* 1500. 1. *parad.* 590.
Leaves ovate ſerrate, peduncles corymbed.
[2. Pyrus Pollueria. *Woolly-leaved Pear Tree.*
Lin. ſyſt. 466. *Reich.* 2. 501. *Willd.* 1016. *mant.* 244. *Hoffm. germ.* 173. *Roth. germ.* 1. 215. 2. 549.
P. irregularis. *Onomat. bot.* 7. 611. *Munchh. hauſvat.* 5. 246. *Du Roi barbec.* 2. 216. *Knoop, pomol.* 2. 38. *t.* 4.
P. polliuilleriana. *Bauh. hiſt.* 1. 59.
Leaves ſerrate tomentoſe underneath, flowers corymbed.
3. Pyrus nivalis. *Alpine Pear Tree.*
Lin. ſuppl. 253. *ſpec. ed. Willd.* 1017. *Jacqu. auſtr.* 2. 4. *t.* 107.
Leaves quite entire, flowers corymbed.]
4. Pyrus Malus. *Common Apple Tree.*
Lin. ſpec. 686. *ſyſt.* 466. *Reich.* 501. *Willd.* 1017. *arb.* 261. *mat. med.* 127. *hort. cliff.* 189. *upſ.* 130. *fl. ſuec. n.* 437. *Hudſ. angl.* 216. *Wither. arr. ed.* 3. 462. *Smith, brit.* 531. *engl. bot. t.* 179. *Lightf. ſcot.* 258. *Relh. cant. n.* 362. *Sibth. oxon. n.* 452. *Hall. helv. n.* 1097. *Pollich pal. n.* 478. *Scop. carn. n.* 599. *Hoffm. germ.* 173. *Roth. germ.* 1. 215. 2. 549. *Krock. ſilef. n.* 761. *Villars dauph.* 3. 544. *Du Roi barbecc.* 222. *Blackw.* 178. *Plenck, ic.* 394.
Sorbus Malus. *Crantz, auſtr.* 93.
Malus ſylveſtris. *Mill. dict. n.* 1. *Bauh. pin.* 443. *Ger.* 1276. *emac.* 1461. *Park. theat.* 1503. 2. *Raii hiſt.* 1488. *ſyn.* 452.
Crab Tree or *Wilding.*
β. Malus ſativa. *The cultivated Apple Tree.*
Bauh. hiſt. 1. 1. *Dod. pempt.* 789. *Raii hiſt.* 1445. *ſyn.* 451. *Mill. illuſtr. Blackw.* 141.
Malus. *Park. theat.* 1503. 1. *parad.* 586. *Ger.* 1273, 1274. *emac.* 1459.
Leaves ovate-oblong acuminate ſerrate ſmooth, umbels ſimple ſeſſile:—claws of the corolla ſhorter than the calyx, ſtyles ſmooth.
[5. Pyrus dioica.
Lin. ſpec. ed. Willd. 1018. *arb.* 263. *phytog. faſc.* 1. 8. *n.* 27. *Moench. weiſſenſt.* 87. *t.* 8.
P. apetala. *Munchh. houſv.* 5. 247.
Malus non florens, fructificans tamen. *Bauh. pin.* 435.
Leaves oval ſerrate, flowers ſolitary dioecous, petals linear the length of the calyx.
6. Pyrus ſpectabilis. *Chineſe Apple Tree.*
Ait. kew. 2. 175. *Lin. ſpec. ed. Willd.* 1018. *Curt. magaz.* 267.
Leaves oval-oblong ſerrate even, umbels ſeſſile:—claws of the corolla longer than the calyx, ſtyles woolly at the baſe.]
7. Pyrus prunifolia. *Siberian Crab Tree.*
Lin. ſpec. ed. Willd. 1018. *arb.* 264. *phytog. faſc.* 1. 8. *n.* 26.
P. Malus β. *Ait. kew.* 2. 175.
Cratægus ceraſi folio, floribus magnis. *Mill. fig.* 180. *t.* 269.
Leaves ovate acuminate, umbels ſeſſile, peduncles pubeſcent, ſtyles woolly at the baſe.
[8. Pyrus baccata. *Small-fruited Crab Tree.*
Ait. kew. 2. 175. *Lin. mant.* 75. *ſpec. ed. Reich.* 2. 502. *ed. Willd.* 1019. *Giſeke ic. faſc.* 1. *n.* 12. *Pallas, it.* 3. 105. *fl. roſſ.* 1. 23. *t.* 10.
Cratægus ceraſi foliis, floribus magnis. *Amm. ruth.* 274. *t.* 31.
Leaves equally ſerrulate, peduncles cluſtered, pomes berried, calyxes deciduous.]
9. Pyrus coronaria. *Sweet-ſcented Crab Tree.*
Lin. ſpec. 687. *Reich.* 2. 503. *Willd.* 1019. *arb.* 265. *Du Roi barbecc.* 2. 229. *Kalm. it.* 3. 10. *engl. ed.* 2. 166.
Malus coronaria. *Mill. dict. n.* 2.
M. ſylveſtris floribus odoratis. *Gron. virg.* 55. *Duham. arb.* 1.
Leaves cordate gaſh-ſerrate angular ſmooth, peduncles corymbed.
[10. Pyrus anguſtifolia. *Narrow-leaved Crab Tree.*
Ait. kew. 2. 176. *Lin. ſpec. ed. Willd.* 1020.
P. coronaria. *Wangenh. amer.* 61. *t.* 21. *f.* 47.
Leaves lanceolate-oblong ſhining tooth-ſerrate attenuated at the baſe entire, peduncles corymbed.
11. Pyrus japonica.
Lin. ſyſt. 467. *ed. Willd.* 1020. *Thunb. jap.* 207.
Leaves wedge-ſhaped crenate ſmooth, flowers ſolitary.]

[t] Willdenow. [t] Juſſieu.

12. Pyrus Cydonia. *The Quince Tree.*
Lin. ſpec. 687. *ſyſt.* 467. *Reich.* 2. 503. *Willd.* 1020. *hort. cliff.* 160. *mat. med.* 127. *Woodv. med. bot.* 221. *t.* 79. *Kalm. it.* 3. 107. *Jacq. auſtr. t.* 342. *Ludw. elt. t.* 56. *Kniph. cent.* 6. *n.* 75. *Hoffm. germ.* 173. *Roth. germ.* 1. 215. 2. 550. *Du Roi barbeck.* 2. 231. *Willd. arb.* 266. *Kreck. ſileſ. n.* 762. *Villars dauph.* 3. 544. *Allion. pedem. n.* 1819. *Gærtn. fruct.* 2. 45. *Plenck, ic.* 396. *Pallas reiſ.* 1. 21. *Duham.* 1. 206.
Sorbus Cydonia. *Crantz auſtr.* 93.
Cydonia. *Mill. dict. Park. parad.* 589.
Malus cotonea. *Ger.* 1264. *emac.* 1454. *Park. theat.* 1504.
α. Malus coronea ſylveſtris. *Baub. pin.* 435. *Raii hiſt.* 1454.
β. M. cotonea major. *Baub. pin.* 434. *Raii hiſt.* 1453. 2.
Cydonia oblonga. *Mill. dict. n.* 1. *fig.* 77. *t.* 116. *Pear-ſhaped Quince.*
γ. M. cotonea minor. *Baub. pin.* 434. *Raii hiſt.* 1453. 1.
C. maliformis. *Mill. dict. n.* 2. *Apple-ſhaped Quince.*
δ. Cydonia luſitanica. *Mill. dict. n.* 3. *Portugal Quince.*
Leaves quite entire, flowers ſolitary.

[13. Pyrus ſalicifolia. *Willow-leaved Crab Tree.*
Lin. ſuppl. 255. *ſyſt.* 467. *Willd.* 1020. *Pallas it.* 3. 734. *t.* N. *f.* 3. *fl. roſſ.* 1. 20. *t.* 9.
P. ſylveſtris orientalis, folio oblongo incano. *Tournef. cor.* 43.
Leaves linear-lanceolate hoary white-tomentoſe underneath, flowers axillary ſolitary ſubſeſſile.

DESCRIPTIONS, &c.

1. The Pear grows to a lofty tree, with upright branches, but the twigs or branchlets hanging down. Leaves elliptical, obtuſe, ſerrate; the younger ones clothed with a deciduous cotton underneath and along the edge. Stipules linear. Flowers in terminating villoſe corymbs. Corolla ſnow-white. Pome produced at the baſe, hard and acerb (in the wild ſtate), with five cells in the middle, each two-valved, and (regularly) containing two ſeeds[a].

Gærtner calls this fruit a Berry, and deſcribes it as inferior, ſubturbinate, fleſhy: the fleſh or pulp ſolid, with ſtony concretions near the cells, which are lined with a coriaceous elaſtic levigated membrane. Seeds in each cell two, obovate, acuminate downwards, plano-convex, ſmooth, dark cheſtnut-coloured. It varies ſometimes with four two-parted one-ſeeded cells:—and ſome of the ſeeds are generally wholly wanting or abortive, at leaſt in the cultivated Pears.

The wild Pear, the mother of all the orchard and garden varieties is thorny[b]. The ſtipules are ſetaceous, white (or reddiſh), deciduous: the peduncles alternate: the calyx clothed with a ferruginous wool[c].

The wood of the Pear is light ſmooth and compact: it is uſed by turners and to make joiners tools; and for picture frames, to be ſtained black. The leaves afford a yellow dye, and may be uſed to give a green to blued cloths. The juice of the fruit fermented is called Perry. The Squaſh, Oldfield and Barland Perrys are reckoned the beſt, and are little inferior to wine[d].

The Pear is a native of Europe. It is not known whence the numerous cultivated varieties are derived. This fruit was familiar to the ancients, and has long been a great favourite with the French. It was doubtleſs not unknown to our remote anceſtors, but does not ſeem to have been in equal favour with them as with their neighbours.

In an account book of Henry VIII. now remaining in the Exchequer, there are the following charges, among others—

For Medlars and Wardens (Pears)	-	0	3	4
Item to a woman who gaff the Kyng Peres		0	0	2
Item to a woman for three Apples	-	0	0	12

Chaucer mentions the Pear tree, among other trees growing in this country.

[a] Smith. [b] Linn. ſpec. [c] Withering. [d] Scopoli.

Parkinſon enumerates ſixty-four varieties of the Pear in his Paradiſus. Moſt of theſe have been ſuperſeded by new and better ſorts, imported from France, where this fruit has had great attention paid to it: Many however of the old ſorts are ſtill to be ſeen in orchards in the country. The Catherine Pear, a ſmall red fruit, is yet common in the London markets; becauſe it comes early: but it is a poor fruit.—Rea has twenty-one ſorts for walls, thirty-five of which he calls Meat Pears, and thirteen Baking Pears: twenty-ſeven ſorts obtained out of France by Sir Thomas Hanmer, and fifty-five others, obſerved in France by the ſame gentleman, in all an hundred and fifty-one. Worlidge ſays, there are ſuppoſed to be five hundred ſorts, and that the French gardener reckons about three hundred choice ones.

Knoop, in his *Pomologia*, has an hundred and two varieties, engraved and coloured. Duhamel enumerates an hundred and nineteen, to which he ſays thirty or forty indifferent ſorts, to be found in common orchards, might be added.

Bradley (in 1724) reckons an hundred and forty ſorts, ranged according to the months in which they are fit for eating; his catalogue is from the French.

Mortimer alſo has many ſorts. The Pears eſteemed for making Perry in Worceſterſhire in his time were the Red and Green Squaſh, the John, the great Harpary, the Drake, the Mary, the Lullant; but above the reſt are eſteemed the Boſbury and Bareland Pears, the White and Red Horſe Pears, and eſpecially the Turgovian Pear, mentioned by Mr. Evelyn. In Hertfordſhire he made excellent Perry from wild Pears.—*Art of huſbandry*, 544. ed. 2. 1708.

In Worceſterſhire the Squaſh is now in much the higheſt eſteem for Perry. It is an early tender fruit, burſting when it falls ripe from the tree; whence its name. Taynton has long been famous for Squaſh Pear Perry. Other ſorts are the Oldfield, Bareland, Red Pear, Huff-cap, Sack, &c. both graſted and kernel fruits.—*Marſhall's Glouceſterſh.* 2. 256.

Miller has ſelected eighty, which are moſt eſteemed for the ſeveral purpoſes to which this fruit is applied.] Theſe varieties, ſays he, which are now cultivated in curious fruit gardens, have been accidentally obtained by ſeeds; but being generally diſtinguiſhed by the ſhape, ſize and flavour of the fruit, he gives the following diſtinctions.

1. Pyrus (*Muſk*) ſativa, fructu æſtivo parvo racemoſo odoratiſſimo. Tourn. *Petit Muſcat*, Duh. n. 1. t. 1. *i. e. Little Muſk Pear, commonly called the Supreme.* This fruit is generally produced in large cluſters; it is rather round than long, the ſtalk ſhort; and, when ripe, the ſkin is of a yellow colour; the juice is ſomewhat muſky, and, if gathered before it is too ripe, is a good Pear. This ripens the middle of july, and will continue good but for a few days.
2. Pyrus (*Chio*) ſativa, fructu æſtivo minimo odoratiſſimo. Tourn. *Poire de Chio; the Chio Pear, commonly called the little Baſtard Muſk Pear.* This is ſmaller than the former, but is in ſhape pretty much like that. The ſkin, when ripe, has a few ſtreaks of red on the ſide next the ſun, and the fruit ſeldom hangs in cluſters as the former, but in other reſpects is nearly like it.
3. Pyrus (*Citron des Carmes*, Duh. n. 7. t. 4. Haſtiveau is n. 9.) ſativa, fructu æſtivo parvo, è viridi albido. Tourn. *Poire Hâtiveau, i. e. the Haſting Pear; Poire Madeline, ou Citron des Carmes, called commonly the green Chiſel.* This is a larger Pear than either of the former, and is produced more toward the pedicel. The ſkin is thin, and of a whitiſh green colour when ripe; the fleſh is melting, and, if not too ripe, of a ſugary flavour, but is apt to be meally. This ripens in the end of july.
4. Pyrus (*Muſcadelle*) ſativa, fructu æſtivo partim ſaturatè rubente, partim flaveſcente. Tourn. *Muſcadelle Rouge; the red Muſcadelle.* It is alſo called La Belliſſime, i. e. the Faireſt or Supreme, Belliſſime d'été, or Supreme, Duh. n. 80. t. 42. This is a large early Pear, of great beauty; the ſkin is of a fine yellow colour, when ripe, beautifully ſtriped with red; the fleſh is half melting, and has a rich flavour,

if

if gathered before it be too ripe, but it is apt to be mealy. This generally produces two crops of fruit in a year; the firſt is commonly ripe about the end of july, and the ſecond ripens in ſeptember, but this late crop is ſeldom well taſted.

5. PYRUS (*Muſcat*) ſativa, fructu æſtivo parvo flaveſcente moſchato. Tourn. Petit Muſcat, i. e. *the Little Muſcat*. This is a ſmall Pear, rather round than long; the ſkin is very thin, and, when ripe, of a yelloviſh colour; the fleſh is melting, and of a rich muſky flavour, but will not keep long when ripe. This comes the end of july.

6. PYRUS (*Cuiſſe Madame*) ſativa, fructu æſtivo oblongo ferrugineo, carne tenerâ moſchatâ. Tourn. *Cuiſſe Madame*, Duh. n. 11. t. 5. *Lady's Thigh, in England commonly called Jargonelle*. This is a very long Pear, of a pyramidal ſhape, having a long foot-ſtalk; the ſkin is pretty thick, of a ruſſet green colour from the ſun, but towards the ſun it is inclined to an iron colour; the fleſh is breaking, and has a rich muſky flavour; ripe the beginning of auguſt. This is one of the beſt early ſummer Pears yet known, and is certainly what all the French gardeners call the Cuiſſe Madame, as may be eaſily obſerved by their deſcription of this Pear; but I ſuppoſe the titles of this and the Jargonelle were changed in coming to England, and they have been continued by the ſame names.

7. PYRUS (*Windſor*) ſativa, fructu oblongo, è viridi flaveſcente. *The Windſor Pear*. This is an oblong fruit, which ſwells toward the crown, but near the ſtalk is drawn toward a point; the ſkin is ſmooth, and, when ripe, of a yelloviſh green colour; the fleſh is very ſoft, and, if permitted to hang but two or three days after it is ripe, grows meally, and is good for nothing.

8. PYRUS (*Jargonelle*) ſativa, fructu æſtivo oblongo, è viridi albo. *The Jargonelle*, Duh. n. 6. *now commonly called Cuiſſe Madame*. This is certainly what the French gardeners call the Jargonelle, which, as I have before obſerved, is now in England given to another fruit much preferable to this, ſo that the two names are changed; for the Jargonelle is always placed amongſt thoſe which the French call bad fruit, and the Cuiſſe Madame is ſet down amongſt their beſt fruit, which is certainly the reverſe with us, as they are now named. This Pear is ſomewhat like the Windſor, but is not ſo ſwelling toward the crown, and is ſmaller toward the ſtalk; the ſkin is ſmooth, of a pale green colour; the fleſh is apt to be mealy if it ſtands to be ripe, but, being a plentiful bearer, is much propagated for the London markets.

9. PYRUS (*Orange Muſk*) ſativa, fructu æſtivo globoſo ſeſſili moſchato, maculis nigris conſperſo. Tourn. *Orange Muſquée*, Duh. n. 25. t. 10. *i. e. the Orange Muſk*. This is a middle-ſized Pear, of a ſhort globular form; the ſkin is of a yelloviſh colour, ſpotted with black; the fleſh is muſky, but is very apt to be a little dry and choaky. It ripens in auguſt.

10. PYRUS (*Blanquet*) ſativa, fructu æſtivo albido majori. Tourn. *Gros Blanquet*, Duh. n. 13. *i. e. Great Blanket*. This is alſo called La Muſſette d'Anjou, i. e. the Bagpipe of Anjou. It is a large Pear approaching to a round form; the ſkin is ſmooth, and of a pale green colour; the fleſh is ſoft, and full of juice, which has a rich flavour; the ſtalk is ſhort, thick, and ſpotted; the wood is ſlender, and the leaf is very much like that of the tree called the Jargonelle. This ripens the beginning of auguſt.

11. PYRUS (*Muſk Blanquet*) ſativa, fructu æſtivo albido ſaccharato odoratiſſimo. Tourn. *The Blanquette, or Muſk Blanquette*, Duh. n. 16. t. 6. *the little Blanket Pear*. This Pear is much leſs than the former, and more pinched in near the ſtalk, which is alſo ſhort, but ſlenderer than that of the former; the ſkin is ſoft, and of a pale green colour; the fleſh is tender, and full of a rich muſky juice; the wood of this tree is much ſtronger than that of the former, and the ſhoots are commonly ſhorter. This ripens the middle of auguſt.

12. PYRUS (*Long-ſtalk Blanquet*) ſativa, fructu æſtivo albido, pediculo longo donato. Tourn. *Blanquette à longue queue*, Duh. n. 15. *Long-ſtalked Blanket Pear*. This Pear is in ſhape ſomewhat like the former, but the eye is larger, and more hollow at the crown; toward the ſtalk it is ſomewhat plumper, and a little crooked; the ſkin is very ſmooth, white, and ſometimes toward the ſun is a little coloured; the fleſh is between melting and breaking, and is full of a rich ſugary juice. This ripens the middle of auguſt.

13. PYRUS (*Skinleſs*) ſativa, fructu æſtivo oblongo ruſeſcente ſaccharato. Tourn. *Poire ſans Peau*, Duh. n. 35. t. 13. *the Skinleſs Pear*. It is alſo called Fleur de Guigne, i. e. Flower of Guigne; and by ſome, Rouſſelet hâtif, i. e. the early Ruſſelet. This is a middle-ſized fruit, of a long ſhape, and a reddiſh colour, ſomewhat like the Ruſſelet; the ſkin is extremely thin; the fleſh is melting, and full of a rich ſugary juice; the ſhoots are long and ſtraight. This ripens the middle of auguſt.

14. PYRUS (*Robine*) ſativa, fructu æſtivo turbinato, carne tenera ſaccharata. *Muſcat Robine, i. e. the Muſk Robine Pear*. This is alſo called Poire à la Reine, i. e. the Queen's Pear; Poire d'Ambre, i. e. the Amber Pear; and Pucelle de Xaintonge, i. e. the Virgin of Xaintonge, *Duh. n. 3. t. 2*. This is a ſmall round Pear, of a yelloviſh colour when ripe; the fleſh is between melting and breaking. It has a rich muſky flavour, and is a great bearer; it ripens the middle of auguſt.

15. PYRUS (*Drone*) ſativa, fructu æſtivo turbinato moſchato. *Le Bourdon Muſqué*, Duh. n. 27. *the Muſk Drone Pear*. This is a middle-ſized round fruit, whoſe ſkin is of a yelloviſh colour when ripe; the fleſh is melting, and has a high muſky juice, but it muſt not hang too long on the tree, for it is ſubject to grow mealy in a ſhort time. This ripens the end of auguſt.

16. PYRUS (*Orange*) ſativa, fructu æſtivo globoſo ſeſſili, è viridi purpuraſcente ſaccharato odorato. Tourn. *Orange Rouge*, Duh. n. 26. *the red Orange Pear*. This Pear has been the moſt common of all the ſorts in France, which was occaſioned by the general eſteem it was in ſome years ſince. This is a middle-ſized round fruit, of a greeniſh colour, but the ſide next the ſun changes to a purple colour when ripe; the fleſh is melting, and the juice is ſugared with a little perfume; the eye is very hollow, and the ſtalk is ſhort. This ripens the end of auguſt.

17. PYRUS (*Caſſolette*) ſativa, fructu æſtivo oblongo minori cinereo odorato. Tourn. *Caſſolette. Friolet. Muſcat-Vert. Lechefrion*. Duh. n. 44. t. 18. This is ſo called from its being ſhaped like a perfuming-pot. It is a long fruit, in ſhape like the Cuiſſe Madame, of an Aſh colour; its fleſh is melting, and full of a perfumed juice, but it is very apt to rot in the middle as ſoon as ripe, otherwiſe it would be eſteemed an excellent Pear. It is ripe the end of auguſt.

18. PYRUS (*Orange Muſk*) ſativa, fructu æſtivo turbinato è viridi albido. *Orange Muſquée*, Duh. n. 25. t. 10. *the Muſk Orange Peer*. This is a large round Pear, in ſhape like a Bergamot; the ſkin is green, and the fleſh is melting, but it is very ſubject to rot upon the tree, which renders it not near ſo valuable as ſome others. It ripens the end of auguſt.

19. PYRUS (*Ognonet*) ſativa, fructu æſtivo globoſo è viridi purpuraſcente. Tourn. *Gros Ognonet*, Duh. n. 19. t. 8. *the Great Onion Pear*. It is alſo called Amiréroux, i. e. Brown Admired; and Roy d'Eté, i. e. King of Summer; Archiduc d'Eté, i. e. the Summer Archduke. This is a middle-ſized round Pear, of a browniſh colour next the ſun; the fleſh is melting, and the juice is paſſably good. This ripens the end of auguſt.

20. PYRUS (*Avorat*) ſativa, fructu æſtivo globoſo ſeſſili ex albido flaveſcente ſaccharato odorato. Tourn. *Robine*, Duh. n. 56. t. 27. It is alſo called Muſcat d'Aouſt, i. e. the Auguſt Muſcat; Poire d'Averat, i. e. the Averat Pear; and Poire Royale, i. e. the Royal Pear. This is a roundiſh flat Pear, in ſhape very like a Bergamot; the ſtalk is long, ſtraight, and a little ſpotted, and the eye is a little hollowed; the ſkin is ſmooth, and of a whitiſh yellow colour; the fleſh is breaking, but not hard, and its juice is richly

ſugared and perfumed. It is a great bearer, and is eſteemed one of the beſt ſummer Pears yet known; it ripens the end of auguſt.

21. Pyrus (*Roſe*) ſativa, fructu æſtivo globoſo ſeſſili odorato. Tourn. *Poire de roſe*, Duh. n. 57. *the Roſe-Pear*; *and Epine-roſe, i. e. the Thorny Roſe.* This is a ſhort round fruit, ſhaped like the great Onion Pear, but much larger; of a yelloviſh green colour; but a little inclining to red on the ſide next the ſun; the ſtalk is very long and ſlender; the fleſh is breaking, and the juice is muſky: this ripens the end of auguſt. The ſhoots and the leaves of this tree are large.

22. Pyrus (*Pouchet*) ſativa, fructu æſtivo globoſo albido ſaccharato. Tourn. *Poire du Pouchet.* This is a large, round, whitiſh Pear, ſhaped ſomewhat like the Beſideri; the fleſh is ſoft and tender, and the juice is ſugary; this ripens the end of auguſt.

23. Pyrus (*Parfumé*) ſativa, fructu æſtivo turbinato ſeſſile ſaturatiùs rubente punctato. Tourn. *Poire Parfumé, i. e. the perfumed Pear.* This is a middle-ſized round fruit, whoſe ſkin is ſomewhat thick and tough, and of a deep red colour, ſpotted with brown; the fleſh is melting, but dry, and has a perfumed flavour. This ripens the end of auguſt.

24. Pyrus (*Boncrétien*) ſativa, fructu æſtivo oblongo magno, partim rubro, partim albido odorato. Tourn. *Boncrétien d'Eté*, Duh. n. 40. t. 47. f. 4. *the Summer Boncrétien.* This is a large oblong fruit, whoſe ſkin is ſmooth and thin; the ſide next the ſun is of a beautiful red colour, but the other ſide is of a whitiſh green; the fleſh is between breaking and tender, and is very full of juice, which is of a rich perfumed flavour. It ripens the beginning of ſeptember.

25. Pyrus (*Salviati*) ſativa, fructu æſtivo globoſo, ex rubro albidoque flaveſcente ſaccharato odorato. Tourn. *Salviati*, Duh. n. 21. t. 9. This Pear is pretty large, round, and flat, very much like the Beſideri in ſhape, but not in colour; the ſtalk is very long and ſlender, and the fruit is a little hollowed both at the eye and ſtalk; the colour is red and yellow next the ſun, but on the other ſide is whiriſh; the ſkin is rough, the fleſh is tender, but a little ſoft, and has no core; the juice is ſugary and perfumed, ſomewhat like the Robine, but is not near ſo moiſt. This ripens the beginning of ſeptember.

26. Pyrus (*Caillet-roſat*) ſativa, fructu æſtivo globoſo ſeſſili ruſeſcente odorato. Tourn. *Caillot-roſat*, Duh. p. 177. *the Roſe-water Pear.* This is a large round Pear, ſomewhat like the Meſſire Jean, but rounder; the ſtalk is very ſhort, and the fruit is hollowed like an Apple, where the ſtalk is produced; the ſkin is rough, and of a brown colour; the fleſh is breaking, and the juice is very ſweet. This ripens the middle of ſeptember.

27. Pyrus (*Choak-Pear*) ſativa, fructu æſtivo longo, acerbitate ſtrangulationem minitante. Tourn. *Poire d'Etrangillon, the choaky Pear.* The fleſh is red. This is ſeldom preſerved in gardens, ſo there needs no deſcription of it.

28. Pyrus (*Rouſſelet*) ſativa, fructu æſtivo oblongo è ferrugineo rubente, nonnunquam maculato. *Poire du Rouſſelet, the Ruſſelet Pear.* Gros Rouſſelet. Roy d'eté. Duh. n. 34. t. 12. This is a large oblong Pear; the ſkin is brown, and of a dark red colour next the ſun; the fleſh is ſoft and tender, without much core; the juice is agreeably perfumed, if gathered before it be too ripe. This produces larger fruit on an eſpalier than on ſtandard trees: it ripens the middle of ſeptember.

29. Pyrus (*Prince's Pear*) ſativa, fructu æſtivo ſubrotundo, partim rubro, partim flaveſcente, odorato. *Poire de Prince, the Prince's Pear.* This is a ſmall roundiſh Pear, of a bright red colour next the ſun, but a yelloviſh colour on the oppoſite ſide; the fleſh is between breaking and melting; the juice is very high-flavoured: it is a great bearer. This ripens the middle of ſeptember, but will keep a fortnight good, which is what few ſummer-fruits will do.

30. Pyrus (*Moüille-bouche*) ſativa, fructu æſtivo globoſo viridi, in ore liqueſcente. *Gros Moüille-bouche, i. e. the great Mouthwater Pear.* This is a large round Pear with a ſmooth green ſkin; the ſtalk is ſhort and thick; the fleſh is melting, and full of juice, if gathered before it be too ripe, otherwiſe it is apt to grow mealy. This ripens the middle of ſeptember.

31. Pyrus (*Bergamotte d'Eté*) ſativa, fructu æſtivo rotundo ſeſſili ſaccharato, è viridi flaveſcente. *Bergamotte d'Eté*, Duh. n. 45. *Summer Bergamot.* This is by ſome called the Hamden's Bergamot. It is a pretty large, round, flat Pear, of a greeniſh yellow colour, and hollowed a little at both ends like an Apple; the fleſh is melting, and the juice is highly perfumed. This ripens the middle of ſeptember.

32. Pyrus (*Bergamot Autumn*) ſativa, fructu autumnali ſeſſili ſaccharato odorato è viridi flaveſcente, in ore liqueſcente. Tourn. *Bergamotte d'Automne*, Duh. n. 48. t. 21. *the Autumn Bergamot.* This is a ſmaller Pear than the former, but is nearly of the ſame ſhape; the ſkin is of a yelloviſh green, but changes to a faint red on the ſide next the ſun; the fleſh is melting, and its juice is richly perfumed. It is a great bearer, ripens the end of ſeptember, and is one of the beſt Pears of the ſeaſon.

33. Pyrus (*Swiſs Bergamot*) ſativa, fructu autumnali turbinato viridi, ſtriis ſanguineis diſtincta. Tourn. *Bergamotte Suiſſe*, Duh. n. 47. t. 20. *the Swiſs Bergamot.* This Pear is ſomewhat rounder than either of the former; the ſkin is tough, and of a greeniſh colour, ſtriped with red: the fleſh is melting, and full of juice, but is not ſo richly perfumed as either of the former. This ripens the end of ſeptember.

34. Pyrus (*Beurré Rouge*) ſativa, fructu autumnali ſuaviſſimo, in ore liqueſcente. Tourn. *Beurré Rouge*, Duh. n. 75, 76. t. 38, 39. *the red Butter Pear.* It is called l'Amboiſe, and in Normandy Iſambert; as alſo Beurré gris, i. e. the gray Butter; and Beurré vert, i. e. the green Butter Pear. All theſe different names of Beurrés have been occaſioned by the difference of the colours of the ſame ſort of Pear, which is either owing to the different expoſure where they grew, or from the ſtock, thoſe upon the free ſtocks being commonly of a browner colour than thoſe which are upon Quince ſtocks, whence ſome perſons have ſuppoſed them to be different fruits, though in reality they are the ſame. This is a large long fruit, for the moſt part of a brown colour. The fleſh is very melting, and full of a rich ſugary juice. It ripens the beginning of october, and, when gathered from the tree, is one of the very beſt ſort of Pears we have.

35. Pyrus (*Doyenne*) ſativa, fructu autumnali turbinato ſeſſili flaveſcente, et in ore liqueſcente. Tourn. *Doyenné*, Duh. n. 81. t. 43. *the Dean's Pear.* It is alſo called by all the following names; Saint Michel, i. e. Saint Michael; Beurré blanc d'Automne, i. e. the white Autumn Butter Pear; Poire de Neige, i. e. the Snow Pear; Bonne Ente, i. e. a good Graft; the Carliſle, and Valentia. This is a large fruit, in ſhape ſomewhat like the gray Beurré, but ſhorter and rounder; the ſkin is ſmooth, and, when ripe, changes to a yelloviſh colour; the fleſh is melting, and full of juice, which is very cold, but it will not keep good much more than a week after it is gathered, being very ſubject to grow mealy; it is a very indifferent fruit. This is a great bearer, and ripens the beginning of october.

36. Pyrus (*Verte-longue*) ſativa, fructu autumnali longo viridique odorato, in ore liqueſcente. Tourn. *La Verte-longue*, Duh. n. 74. t. 73. *the long green Pear.* It is alſo called Moüille bouche d'Automne, i. e. the Autumn Mouthwater Pear. This is a long fruit, which is very green when ripe; the fleſh is melting, and very full of juice, which, if it grows upon a dry warm ſoil, and a free ſtock, is very ſugary, otherwiſe it is but a very indifferent Pear. It ripens the middle of october, but in ſome years will keep till december.

37. Pyrus (*Meſſire Jean*) ſativa, fructu autumnali tuberoſo ſeſſili ſaccharato, carne durâ. Tourn. *Meſſire Jean blanc & gris*, Duh. n. 55. t. 26. *the white and gray Monſieur John.* Theſe, although made two ſorts of fruit by many perſons, are indubitably the ſame; the difference of their colour proceeding from the different ſoils and ſituations where they grow, or the ſtocks on which they are grafted. This Pear, when

grafted

grafted on a free ſtock, and planted on a middling ſoil, neither too wet nor over dry, is an excellent autumn Pear; but when it is grafted on a Quince ſtock, it is very apt to be ſtony; or if planted on a very dry ſoil, is very apt to be ſmall and good for little, unleſs the trees are watered in dry ſeaſons, which has rendered it leſs eſteemed by ſome perſons, who have not conſidered the cauſe of their hardneſs; for when it is rightly managed, there are not many Pears in the ſame ſeaſon to be compared with it. This is a large roundiſh fruit, the ſkin is rough, and commonly of a brown colour; the fleſh is breaking, and full of a rich ſugared juice. It ripens the end of october, and will continue good near a month.

38. Pyrus (*Muſcat fleuri*) ſativa, fructu autumnali globoſo ferrugineo, carne tenerâ ſapidiſſimâ. Tourn. *Muſcat fleuri*, Duh. n. 4. *the flowered Muſcat*. It is alſo called Muſcat à longue queüe d'Automne, i. e. the long-ſtalked Muſcat of the Autumn. This is an excellent Pear, of a middling ſize, and round; the ſkin is of a dark red colour; the fleſh is very tender, and of a delicate flavour. It ripens the end of october.

39. Pyrus (*Poire de Vigne*) ſativa, fructu autumnali globoſo ferrugineo, carne viſcidâ. Tourn. *Poir de Vigne*, Vigne. Demoiſelle. Duh. n. 110. t. 58. f. 2. *the Vine Pear*. This is a round fruit, of a middling ſize; the ſkin of a dark red colour; the fleſh is very melting, and full of a clammy juice; the ſtalk is very long and ſlender. The fruit ſhould be gathered before it be full ripe, otherwiſe it grows meally and ſoon rots. It ripens the end of october.

40. Pyrus (*Rouſſeline*) ſativa, fructu autumnali oblongo, dilutè ruſeſcente, ſaccharato, odoratiſſimo. Tourn. *Poire Rouſſeline*, Duh. n. 37. t. 15. *the Rouſſeline Pear*. It is alſo called in Touraine, Le Muſcat à longue queüe de la fin d'automne, i. e. the long-ſtalked Muſcat of the end of autumn. This is by ſome Engliſh gardeners called the Brute-bonne, but that is a very different fruit from this. It is ſhaped ſomewhat like the Rouſſelet, but the ſkin of this is ſmooth, and of a greeniſh yellow from the ſun, but the ſide next the ſun is of a deep red colour, with ſome ſpots of gray; the fleſh is very tender and delicate; the juice is very ſweet, with an agreeable perfume. It ripens the middle of october, but muſt not be long kept, leſt it rot in the middle.

41. Pyrus (*Pendar*) ſativa, fructu autumnali oblongo majori cinereo. Tourn. *Poire Pendar, i. e. the Knave's Pear*. This is very like the Caſſolette Pear, but is ſomewhat larger; the fleſh is fine and tender; the juice is very much ſugared. It ripens the end of october.

42. Pyrus (*Sucré vert*) ſativa, fructu autumnali turbinato tuberoſo viridi ſaccharato, in ore liqueſcente. Tourn. *Sucré vert*, Duh. n. 68. t. 34. *the green Sugar Pear*. This Pear is ſhaped like the Winter Thorn, but is ſmaller; the ſkin is very ſmooth and green; the fleſh is very buttery; the juice is ſugared, and of an agreeable flavour; but it is ſometimes ſubject to be ſtony in the middle, eſpecially if grafted on a Quince ſtock.

43. Pyrus (*Marquiſe*) ſativa, fructu autumnali tuberoſo ſeſſili, è viridi flaveſcente, maculis nigris conſperſo, carne tenerâ ſaccharatâ. Tourn. *La Marquiſe*, Duh. n. 93. t. 49. *the Marchioneſs's Pear*. This is often of two different ſhapes, according to the nature of the ſoil where they are planted; for when the ſoil is dry, the fruit very much reſembles a fine Blanquet; but when the ſoil is very rich and moiſt, it grows much larger. It is a well-ſhaped Pear, flat at the top; the eye is ſmall and hollowed; the ſkin is of a greeniſh yellow, a little inclining to red on the ſide next the ſun. If this Pear does not change yellow in ripening it is ſeldom good; but if it does, the fleſh will be tender and delicate, very full of juice, which is ſugared. It ripens the beginning of november.

44. Pyrus (*Chat-brulé*) ſativa, fructu autumnali, oblongo, partim albido, partim ruſeſcente. *The Chat-brulé*, Duh. n. 116. *the Burnt Cat*. It is alſo called Pucelle de Xaintogne, i. e. the Virgin of Xaintogne. This is a ſmall oblong Pear, ſhaped much like the Martin Sec, but differs from it in colour, this being of a pale colour on one ſide, but of a dark brown on the other; the ſkin is ſmooth; the fleſh is tender, but dry, and, if kept a ſhort time, is apt to grow meally. It is in eating the beginning of november.

45. Pyrus (*Beſidéri*) ſativa, fructu autumnali globoſo ſeſſili, ex albido flaveſcente. *Le Bezi d'Hery*, Duh. n. 23. It is ſo called from Heri, which is a foreſt in Bretagne, between Rennes and Nantes, where this Pear was found. This is a middle-ſized round Pear, of a pale green, inclining to a yelloviſh colour; the ſtalk is very long and ſlender; the fleſh is dry, and but very indifferent for eating, but it bakes well. It ripens the middle of november.

46. Pyrus (*Craſane*) ſativa, fructu brumali ſeſſili, è viridi flaveſcente, maculato, utrinque umbilicato, in ore liqueſcente. Tourn. *The Craſanne, or Bergamotte Craſanne*, Duh. n. 49. t. 22. It is alſo called Buerré Plat, i. e. the flat Butter Pear. This is a middle-ſized Pear, hollowed at the crown like an Apple; the ſtalk is very long and crooked; the ſkin is rough, of a greeniſh yellow colour when ripe, covered over with a ruſſet coat; the fleſh is extremely tender and buttery, and is full of a rich ſugary juice, and is the very beſt Pear of the ſeaſon. This is in eating the middle of november.

47. Pyrus (*Dauphine*) ſativa, fructu brumali turbinato ſeſſili flaveſcente ſaccharato odorato, in ore liqueſcente. Tourn. *Lanſac ou la Dauphine*, Duh. n. 109. t. 57. *the Lanſac or Dauphine Pear*. This Pear is commonly about the ſize of a Bergamot, of a roundiſh figure, flat towards the head, but a little produced towards the ſtalk; the ſkin is ſmooth, and of a yelloviſh green colour; the fleſh is yellow, tender, and melting; the juice is ſugared, and a little perfumed; the eye is very large, as is alſo the flower, and the ſtalk is long and ſtraight. When this Pear is upon a free ſtock, and planted on a good ſoil, it is one of the beſt fruits of the ſeaſon; but when it is on a Quince ſtock, or upon a very dry ſoil, the fruit will be ſmall, ſtony, and worth little. It ripens the end of november.

48. Pyrus (*Martin Sec*) ſativa, fructu brumali oblongo, partim intenſè, partim dilute ferrugineo, ſaccharato, odorato. Tourn. *Martin Sec*, Duh. n. 36. t. 14. *the Dry Martin*. This is ſometimes called the Dry Martin of Champagne, to diſtinguiſh it from another Dry Martin of Burgundy. This Pear is almoſt like the Rouſſelet in ſhape and colour, which has occaſioned ſome perſons to give it the name of Winter Ruſſelet. It is an oblong Pear, whoſe ſkin is of a deep ruſſet colour on one ſide, but the other ſide is inclining to a red; the fleſh is breaking and fine; the juice is ſugared, with a little perfume, and if grafted on a free ſtock, is an excellent Pear, but if it be on a Quince ſtock, it is very apt to be ſtony. It is in eating the end of november, but if permitted to hang the full time on the tree, will keep good two months.

49. Pyrus (*Bigarrade*) ſativa, fructu brumali magno ſeſſili, è cinereo flaveſcente. Tourn. *La Villaine d'Anjou*. It is alſo called Poire Tulipée, i. e. the Tulip Pear, and Bigarrade, i. e. the Great Orange. This is a large round Pear, with a very long ſlender ſtalk; the ſkin is of a pale yellow colour; the fleſh is breaking, but not very full of juice. This is in eating the end of november.

50. Pyrus (*Poire de gros queüe*) ſativa, fructu brumali flaveſcente odoratiſſimo, pediculo craſſiori. Tourn. *Poire de gros queüe, i. e. the large ſtalked Pear*. This is a large roundiſh Pear, with a yellow ſkin; the ſtalk is very thick, from whence it had the name; the fleſh is breaking and dry, and has a very muſky flavour; but it is apt to be ſtony, eſpecially if it be planted in a dry ſoil, or grafted on a Quince-ſtock, as are moſt of the perfumed Pears.

51. Pyrus (*Amadate*) ſativa, fructu brumali turbinato ruſeſcente odorato. *L'Amadote, i. e. the Amadot Pear*. This is a middle-ſized Pear, ſomewhat long, but flat at the top; the ſkin is generally rough, and of a ruſſet colour; the fleſh is dry and high-flavoured, if grafted on a free ſtock. The wood of this tree is

generally thorny, and is eſteemed the beſt ſort of Pear for ſtocks to graft the melting Pears upon, becauſe it gives them ſome of their fine muſky flavour. It is in eating the beginning of december, but will keep good ſix weeks.

52. Pyrus (*Bouvar*) ſativa, fructu brumali, globoſo, dilutè virente, tuberoſo, punctato, in ore liqueſcente. Tourn. *Petit Oin, i. e. Little Lard Pear.* It is alſo called Bouvar and Rouſette d'Anjou, i. e. the Ruſſet of Anjou; and Amadont, and Merveille d'Hyver, i. e. the Wonder of the Winter. This Pear is of the ſize and ſhape of the Ambret or Leſchaſſerie, but the ſkin is of a clear green colour, and a little ſpotted; the ſtalk is pretty long and ſlender; the eye is large, and deeply hollowed; the fleſh is extremely fine, and melting; the juice is much ſugared, and has an agreeable muſky flavour. It is in eating the middle of December, and is eſteemed one of the beſt fruits in that ſeaſon. This is better on a free ſtock than upon the Quince.

53. Pyrus (*Louiſebonne*) ſativa, fructu brumali, longo, è viridi albicante, in ore liqueſcente. Tourn. *Louiſebonne*, Duh. 97. t. 53. This Pear is ſhaped ſomewhat like the St. Germain, or the Autumn Vertelongue, but is not quite ſo much pointed; the ſtalk is very ſhort, fleſhy, and ſomewhat bent; the eye and the flower are ſmall; the ſkin is very ſmooth; the colour is green, inclining to a pale colour when ripe; the fleſh is extremely tender and full of juice, which is very ſweet, eſpecially when it grows upon a dry ſoil, otherwiſe it is apt to be very large and ill taſted. It is in eating the beginning of december.

54. Pyrus (*Colmar*) ſativa, fructu brumali, tuberoſo, è viridi flaveſcente, punctato, ſaccharato. Tourn. *Poire de Colmar, i. e. the Colmar Pear.* It is alſo called Poire Manne, the Manna Pear, and Bergamotte tardive, the late Bergamot. Colmart Poire Manne. Duh. n. 94. t. 50. This Pear is ſomewhat like a Boncrêtien in ſhape, but the head is flat; the eye is large, and deeply hollowed; the middle is larger than the head, and is ſloped toward the ſtalk, which is ſhort, large, and a little bent; the ſkin is green, with a few yellowiſh ſpots, but is ſometimes a little coloured on the ſide next the ſun; the fleſh is very tender, and the juice is greatly ſugared. It is in eating the latter end of december, but will often keep good till the end of january, and is eſteemed one of the beſt fruits of that ſeaſon.

55. Pyrus (*L'Eſchaſſerie*) ſativa, fructu brumali, globoſo, citriformi, flaveſcente, punctato, in ore liqueſcente, ſaccharato, odoratiſſimo. Tourn. *L'Eſchaſſerie.* It is alſo called Vertelongue d'Hyver, i. e. the Winter long green Pear, and Beſidéri Landri, i. e. the Landry Wilding. Echaſſery. Bezi de Chaſſery, Duh. n. 66. t. 32. This Pear is ſhaped like a Citron; the ſkin is ſmooth, and of a green colour, with ſome ſpots while it hangs on the tree, but as it ripens it becomes of a yellowiſh colour; the ſtalk is ſtraight and long; the eye is ſmall, and not hollowed; the fleſh is melting, and buttery; the juice is ſugared, with a little perfume. It is in eating the latter end of december.

56. Pyrus (*Virgoulouſe*) ſativa, fructu brumali longo, è viridi flaveſcente, in ore liqueſcente, ſaccharato. Tourn. *Le Virgoulé, or La Virgouleuſe*, Duh. n. 95. t. 51. It is alſo called Bujaleuf, and Chambrette; and Poire de Glace, i. e. the Ice Pear in Gaſcoigne; but it is called Virgoule, from a village of that name in the neighbourhood of St. Leonard in Limouſin, where it was raiſed and ſent to Paris by the Marquis of Chambret. This Pear is large, long, and of a green colour, inclining to yellow as it ripens; the ſtalk is ſhort, fleſhy, and a little bent; the eye is of a middling ſize, and a little hollowed; the ſkin is very ſmooth, and ſometimes a little coloured towards the ſun; the fleſh is melting, and full of a rich juice. It is in eating the latter end of december, and will continue good till the end of january, and is eſteemed one of the beſt fruits of the ſeaſon; but the tree is very apt to produce vigorous ſhoots, and the bloſſoms being generally produced at the extreme part of the ſhoot, when they are ſhortened, the fruit will be entirely cut away, which is the reaſon it is condemned as a bad bearer; but when it is grafted on a free ſtock, it ought to be allowed at leaſt forty feet to ſpread; and if upon a Quince ſtock, it ſhould be allowed upwards of thirty feet, and the branches trained in againſt the eſpalier or wall, at full length, in a horizontal poſition, as they are produced. Where this tree is thus treated, it will bear very plentifully, and the fruit will be good.

57. Pyrus (*Ambrette*) ſativa ſpinoſa, fructu globoſo, ſeſſili, ferrugineo, in ore liqueſcente, ſaccharato, odoratiſſimo. Tourn. *Ambrette*, Duh. n. 65. t. 31. This is ſo called from its muſky flavour, which reſembles the ſmell of the Sweet Sultan Flower, which is called Ambrette in France. This Pear is like the Leſchaſſerie in ſhape, but is of a ruſſet colour; the eye is larger, and more hollowed; the fleſh is melting, and the juice is richly ſugared and perfumed; the ſeeds are large and black, and the cells in which they are lodged are very large; the wood is very thorny, eſpecially when grafted on free ſtocks. The fruit is in eating the latter end of december, and continues good till the latter end of january, and is eſteemed a very good fruit by moſt people.

58. Pyrus (*Epine d'Hyver*) ſativa, fructu brumali, magno, pyramidato, albido, in ore liqueſcente, ſaccharato, odorato. Tourn. *Epine d'Hiver*, Duh. n. 64. t. 44. f. 3. *Winter-thorn Pear.* This is a large fine Pear, nearly of a pyramidal figure; the ſkin is ſmooth, and of a pale green colour, inclining to yellow as it ripens; the ſtalk is ſhort and ſlender; the fleſh is melting and buttery; the juice is very ſweet, and in a dry ſeaſon, is highly perfumed; but when it is planted on a moiſt ſoil, or the ſeaſon proves wet, it is very inſipid, ſo that it ſhould never be planted on a ſtrong ſoil. It ripens the end of december, and will continue good two months.

59. Pyrus (*Saint Germain*) ſativa, fructu brumali longo, è viridi flaveſcente, in ore liqueſcente. Tourn. *Saint Germain*, Duh. n. 96. t. 52. *the St. Germain Pear.* It is alſo called Inconnue la Fare, i. e. the Unknown of La Fare; it being firſt diſcovered upon the banks of a river which is called by that name, in the pariſh of St. Germain. This is a large long Pear, of a yellowiſh green colour when ripe; the fleſh is melting, and very full of juice, which in a dry ſeaſon, or if planted on a warm dry ſoil, is very ſweet; but when it is planted on a moiſt ſoil, the juice is very apt to be harſh and auſtere, which renders it leſs eſteemed by ſome perſons, though in general it is greatly valued. This is in eating from the end of december till february.

60. Pyrus (*Saint Auſtin*) ſativa, fructu brumali tuberoſo ſubacido flaveſcente punctato. Tourn. Saint Auguſtin, Duh. n. 99. t. 58. f. 3. This is about the ſize of a middling Virgoulé Pear, but is ſomewhat ſhorter and ſlenderer near the ſtalk; the ſkin is of a fine Citron colour, ſpotted with red on the ſide next the ſun; the fleſh is tender, but not buttery, and is pretty full of juice, which is often a little ſharp, and to ſome perſons is diſagreeable, but others value it on that account. This is in eating in december, and will continue good two months.

61. Pyrus (*Boncrêtien d'Eſpagne*) ſativa, fructu brumali pyramidato, partim purpureo, punctis nigris conſperſo, flaveſcente. Tourn. *Boncrêtien d'Eſpagne*, Duh. n. 89. t. 46. *the Spaniſh Boncrêtien.* This is a large Pear, of a pyramidal form, of a fine red or purple colour on the ſide next the ſun, and full of ſmall black ſpots; the other ſide is of a pale yellow colour, the fleſh is breaking, and when it is on a light rich ſoil, and grafted on a free ſtock, its juice is very ſweet. It ripens in the end of december, and will continue good a month or ſix weeks. If this be grafted on a Quince ſtock, it is very apt to be dry and ſtony. This is a very good fruit for baking.

62. Pyrus (*Poire de Livre*) ſativa, fructu brumali, magno, oblongo, turbinato, ferrugineo, utrinque umbilicato. Tourn. *Poire de Livre*, Duh. n. 104. *the Pound Pear.* It is alſo called Gros Ratteau Gris, the gray rake Pear; and Poire d'Amour. In England

this

this is called Parkinſon's Warden, or the black Pear of Worceſter. This is a very large Pear, and commonly weighs a pound or more; the ſkin is rough, and of an obſcure red colour on the ſide next the ſun, but ſomewhat paler on the other ſide; the ſtalk is very ſhort, and the eye is greatly hollowed. This is not fit for eating, but bakes or ſtews exceeding well, and is in ſeaſon from December to march.

63. PYRUS (*Beſi de Caſſoy*) ſativa, fructu brumali parvo flaveſcente, maculis rubris conſperſo. Tourn. *Beſi de Caſſoy, i. e. the Wilding of Caſſoy*, a foreſt in Bretagne, where it was diſcovered, and paſſes under the name of Rouſſet d'Anjou. It is alſo called Petit Beurré d'Hyver, i. e. Small Winter Butter Pear. Bezy de Caiſſoy; or, Rouſſette d'Anjou, Duh. n. 59. t. 29. This is a ſmall oblong Pear, of a yelloviſh colour, ſpotted with red; the fleſh is melting, and the juice is very rich. It is in eating in december and january. This is a prodigious bearer, and commonly produces its fruit in large cluſters, provided it be not too much pruned; for it generally produces its bloſſom-buds at the extremity of its ſhoots, which if ſhortened, the fruit would be cut away. There was a tree of this kind in the gardens of Camden-houſe near Kenſington, which generally produced a great quantity of fruit.

64. PYRUS (*Martin-ſire*) ſativa, fructu brumali turbinato inæquali, ventre tumido, partim purpureo, partim flaveſcente. Tourn. *Ronville*. It is alſo called Hocrenaille and Martin-ſire, i. e. the Lord Martin Pear. Martin-ſire Ronville, Duh. n. 30. t. 19. f. 5. This Pear is about the ſize and ſhape of a large Rouſſelet; the eye is of a middling ſize, and hollowed a little; the middle of the Pear is generally ſwelled more on one ſide than on the other, but is equally extended towards the ſtalk; the ſkin is very ſmooth and ſoft, and is of a lively red colour next the ſun, but on the other ſide it changes yellow as it ripens. The fleſh is breaking and full of juice, which is very ſweet and a little perfumed; but if grafted on a Quince ſtock, is very apt to be ſmall and ſtony.

65. PYRUS (*Citron d'Hyver*) ſativa, fructu brumali citriformi flaveſcente duro moſchato odoratiſſimo. Tourn. *Citron d'Hyver, i. e. the Winter Citron Pear*. It is alſo called the Muſk Orange Pear, in ſome places. This is a pretty large Pear, in ſhape and colour very like an Orange or Citron, from whence it had its name. The fleſh is hard and dry, and very ſubject to be ſtony, for which reaſons it is not valued as an eating Pear, but will bake very well. It is in ſeaſon from december to march.

66. PYRUS (*Rouſſelet d'Hiver*) ſativa, fructu brumali oblongo, è viridi flaveſcente, ſaccharato, ſaporis auſteri. Tourn. *Rouſſelet d'Hiver*, Duh. n. 31. t. 19. f. 2. *the Winter Ruſſelet*. This is by ſome ſuppoſed to be the ſame Pear as is called the Dry Martin, but it is very different from that in ſeveral particulars. The colour of this is a greeniſh yellow, inclining to brown; the ſtalk is long and ſlender, and the fleſh is buttery and melting, and generally full of juice, which is very ſweet, but the ſkin is apt to contain an auſtere juice, ſo that if it be not pared, it is apt to be diſagreeable to many perſons palates. It is in eating in january and february.

67. PYRUS (*Portail*) ſativa Pictavienſis, fructu brumali globoſo ſeſſili ſaccharato odorato. Tourn. *Poir Portail*. This Pear was diſcovered in the province of Poictou, where it was ſo much eſteemed, that they preferred it to moſt other fruit, though in the opinion of the moſt curious judges, it does not deſerve the great character which is given to it; for it rarely happens that it proves good for eating, being generally dry, ſtony, and hard, unleſs in extraordinary ſeaſons, and upon a very good ſoil. This muſt always be grafted on a free ſtock, and ſhould be planted on a light rich ſoil; and in very dry ſeaſons the trees ſhould be watered, otherwiſe the fruit will be ſtony. It is in ſeaſon from january to march, and bakes well.

68. PYRUS (*France-real*) ſativa, fructu brumali magno globoſo flaveſcente, punctis rufis conſperſo. Tourn. *France real*, Duh. n. 6. It is alſo called Fin-or d'Hyver, i. e. the Golden End of Winter. This is a very large Pear, almoſt of a globular figure; the ſkin is yellow, ſpotted with red; and the ſtalk is ſhort. The fleſh of this Pear is dry, and very apt to be ſtony, but it bakes exceeding well, and continues good from january till march.

69. PYRUS (*Eaſter Bergamot*) ſativa fructu, brumali turbinato ſeſſili ſubacido flaveſcente, punctis aſperioribus conſperſo. Tourn. *Bergamotte Bugi*. It is alſo called Bergamotte de Pâque, the Eaſter Bergamot. Duh. n. 52. t. 24. It is a large Pear, almoſt round, but is a little produced in length towards the ſtalk; the eye is flat and the ſkin is green, having many rough protuberances like ſpots diſperſed all over, but, as it ripens, becomes yelloviſh; the fleſh is breaking, and in a good ſeaſon the juice is ſweet; but it muſt have a free ſtock, a ſouth-eaſt wall, and a good ſoil, otherwiſe it is apt to be ſtony and auſtere. It is in eating from february till april.

70. PYRUS (*Muſcat of Germany*) Muſcat d'Alleman, Duh. n. 72. t. 36. This is an excellent Pear, more long than round, of the ſhape of the Winter-royal, but is leſs toward the eye, and is more ruſſet, and of a red colour next the ſun; it is buttery, melting, and a little muſky. This is in eating in march, april, and ſometimes in may, if it is well preſerved.

71. PYRUS *Bergamotte de Hollande*, or *d'Aiençon*. Amoſelle. Duh. n. 53. t. 25. It is large and round, of the ſhape of the ordinary Bergamot. The colour is greeniſh, the fleſh is half buttery and tender, the juice is highly flavoured. This is a very good Pear, and will keep till april.

72. PYRUS (*Naples*) Duh. n. 107. t. 56. This is a pretty large, long, greeniſh Pear; the fleſh is half breaking; the juice is ſweet, and a little vinous. It is in eating in march. I am in doubt whether this Pear is not in ſome places taken for a Saint Germain, for there is a Pear in ſome gardens, very like the Saint Germain, which will keep till april, and this Pear agrees with the characters of that. It is called in England the Eaſter-St. Germain.

73. PYRUS (*Boncrêtien d'Hiver*) ſativa, fructu brumali magno pyramidato, è flavo nonnihil rubente. Tourn. *Boncrêtien d'Hyver*, Duh. n. 87. t. 45. *the Winter Boncrêtien Pear*. This Pear is very large and long, of a pyramidal figure; the ſkin is of a yelloviſh colour, but the ſide next the ſun inclines to a ſoft red; the fleſh is tender and breaking, and is very full of rich ſugared juice. This is eſteemed in France one of the beſt winter Pears, but in England it is ſeldom ſo good; though I am fully ſatisfied, if it were grafted on a free ſtock, and planted in a good ſoil, againſt a wall expoſed to the ſouth-eaſt, and the branches trained at full length, it might be rendered more acceptable than it is at preſent in England.

74. PYRUS (*Catillac*) ſativa, fructu brumali magno, cydoniæ facie, partim flavo, partim purpureo. Tourn. *Catillac*, Duh. n. 102. t. 58. f. 4. This is a large Pear, ſhaped ſomewhat like a Quince; the ſkin is for the moſt part of a yellow colour, but changes to a deep red on the ſide next the ſun; the fleſh is hard, and the juice auſtere, but it is a very good fruit for baking, and being a plentiful bearer, deſerves a place in every good collection of fruit. It will be good from Chriſtmas to april, or longer.

75. PYRUS (*Paſtorale*) ſativa, fructu brumali oblongo flaveſcente, punctis rubris conſperſo. *La Paſtorale, Muſette d'automne*. Duh. n. 100. t. 55. This Pear is of the ſize and ſhape of a fine Rouſſelet; the ſtalk is ſhort and crooked; the ſkin is ſomewhat rough, of a yelloviſh colour, ſpotted with red; the fleſh is tender and buttery, and when it grows on a dry ſoil, the juice is very ſweet; but on a wet ſoil, or in moiſt years, it is ſubject to have an auſtere taſte. This Pear is in eating in february and march.

76. PYRUS (*Double Fleur*) ſativa, fructu brumali ſeſſili, partim flaveſcente, partim purpuraſcente. Tourn. *La Double Fleur*, Duh. n. 58. t. 28. *the double-flowering Pear*. This is ſo called, becauſe the flowers have a double range of petals or leaves. It is a large ſhort Pear; the ſtalk is long and ſtraight; the ſkin

is very ſmooth, and of a yelloviſh colour, but the ſide next the ſun is commonly of a fine red or purple colour. This is by ſome eſteemed for eating, but it is generally too auſtere in this country for that purpoſe. It is the beſt Pear in the world for baking or compoſts. It is good from February to may.

77. Pyrus (*Saint Martial*) ſativa, fructu brumali oblongo, partim flaveſcente, partim purpuraſcente. *Saint Martial.* It is alſo called in ſome places Poire Angelique, i. e. the Angelic Pear; and in the ſouth of France, Poire douce. Angelique de Rome. Duh. n. 108. This Pear is oblong, in ſhape like the Boncrétien, but not ſo large, and a little flatter at the crown; it has a very long ſtalk; the ſkin is ſmooth and yelloviſh, but on the ſide next the ſun it turns to a purpliſh colour; the fleſh is tender and buttery, and the juice is very ſweet. This is in eating in february and march.

78. Pyrus (*Beſi Chaumontelle*) ſativa, fructu brumali oblongo, partim albido, partim purpureo odorato, ſaccharato. *La Poire de Chaumontelle, or Bezi de Chaumontelle, or Beurre d'hiver.* Duh. n. 78. t. 40. This Pear is in ſhape ſomewhat like the Autumn Beurré, but is flatter at the crown; the ſkin is a little rough, of a pale green colour, but turns to a purpliſh colour next the ſun; the fleſh is melting; the juice is very rich, and a little perfumed. It is in eating from november to january, and is eſteemed by ſome as the beſt late Pear yet known.

79. Pyrus (*Carmelite*) ſativa, fructu brumali globoſo ſeſſili cinereo maculis amplis obſcurioribus conſperſo. Tourn. *Carmelite.* This is a middle-ſized Pear, of a roundiſh form; the ſkin is of a gray colour on one ſide, but is inclining to a red on the other, having ſome broad ſpots of a dark colour all over; the fleſh is commonly hard and dry, ſo that it is not very much eſteemed. It is in ſeaſon in march.

80. Pyrus (*Union*) ſativa, fructu brumali maximo pyramidato, dilutè virente. *The Union Pear, otherwiſe called Dr. Uvedale's St. Germain.* This is a very large long Pear, of a deep green colour, but the ſide next the ſun ſometimes changes to a red as it ripens. This is not fit for eating, but bakes very well; and being a great bearer, and a very large fruit, deſerves a place in every good collection. It is in ſeaſon from Chriſtmas to april.

There are many other ſorts of Pears, which are ſtill continued in ſome old gardens; but as thoſe here mentioned are the beſt ſorts known at preſent, it would be needleſs to enumerate a great quantity of ordinary fruit; ſince every one who intends to plant fruit-trees, would rather chuſe thoſe which are the moſt valued, the expence and trouble being the ſame for a bad ſort of fruit as a good one. Indeed I have inſerted many more than are really worth planting, in order to pleaſe ſuch who are fond of great variety; but whoever has a mind to make choice of ſuch only as are good, may eaſily diſtinguiſh them, by attending to the account given of each ſort, and hereby every perſon is at liberty to pleaſe himſelf; for it is not every one who prefers a Beurré Pear, though that is generally eſteemed the very beſt in its proper ſeaſon; there are ſome who admire the Meſſire Jean, for the firmneſs of its fleſh, which to others is a great objection againſt it; and as ſome eſteem the breaking, and others the melting Pears, I have diſtinguiſhed them by their deſcriptions in ſuch a manner, that every one may make choice of the kinds of fruit which are agreeable to their palate; and the different ſeaſons in which each kind is in eating, being exhibited (allowing a little for the difference of ſeaſons, which are earlier ſome years than others) it is not very difficult for a perſon to make a collection of good Pears to ſucceed each other throughout the ſeaſon of theſe fruits, both for eating and baking.

The time of each fruit ripening, as here ſet down, is taken at a mediüm for ſeven years, and in the neighbourhood of London, where all ſorts of fruit generally ripen a fortnight or three weeks earlier than in almoſt any part of England; and it is very obvious to every perſon who will attend to the culture of fruit-trees, that their time of ripening is accelerated by long cultivation; for many of the ſorts of Pears, which ſome years paſt rarely became ripe in England, unleſs they grew againſt the beſt aſpected walls, are now found to ripen extremely well on eſpaliers and dwarfs; and thoſe Pears which ſeldom were in eating till january, are ripe two months earlier.* There is alſo a very great difference in their time of ripening in different ſeaſons, for I have known the fruit of a Pear-tree in one year all ripe and gone by the middle of october, and the very next year the fruit of the ſame tree has not been fit to eat till the end of december, ſo that allowance ſhould be made for theſe accidents. The Beſi de Chaumontelle Pear, about forty years paſt, was ſeldom fit to eat before february, and has continued good till the middle of april, but now this Pear is commonly ripe in november; and when it is planted on a warm ſoil, and againſt a good aſpected wall, it is in eating the middle or end of october. This forwarding of the ſeveral kinds of Pears, may be in ſome meaſure owing to the ſtocks upon which they are graſted; for if they are graſted upon early ſummer Pear ſtocks, they will ripen much earlier than when they are upon hard winter Pear ſtocks; and if ſome of the very ſoft melting Pears were graſted upon ſuch ſtocks as are raiſed from the moſt auſtere fruit, ſuch as are never fit to eat, and of which the beſt Perry is made, it would improve thoſe fruits, and continue them much longer good; or if the common free ſtocks were firſt graſted with any of theſe hard winter Pears, and when they have grown a year, then to graft or bud theſe ſoft melting Pears upon them, it would have the ſame effect; but the Pears ſo raiſed will require a year's more growth in the nurſery, and conſequently cannot be ſold at the ſame price as thoſe which are raiſed in the common method, theſe requiring to be twice budded or graſted, ſo that there is double labour, beſide ſtanding a full year longer; but this difference in the firſt expence of the trees, is not worth regarding by any perſon who is deſirous to have good fruit; for the ſetting out in a right way is that which every one ſhould be the moſt careful of, ſince by miſtaking at firſt, much time is loſt, and an after expence of new trees often attends it.

Another cauſe of fruits ripening earlier now than they formerly did, may be from the length of time they have been cultivated; for it is very certain, that moſt ſorts of plants have been greatly forwarded and improved by culture, within the ſpace of thirty or forty years, as may be known from the ſeveral ſorts of eſculent plants, which are cultivated in the kitchen-gardens, and of which ſorts there are many which are annually improving: and if we look back to the beſt French authors who have written on the ſubject of fruit-trees, we ſhall find, that the times of ripening of many ſorts of Pears are put down a month or ſix weeks later about fifty or ſixty years ago, than they are now found to ripen about Paris; and here about London it is much the ſame, for I cannot find they are the leaſt forwarder in the times of their ripening at Paris than at London.

[2. Leaves ovate, pubeſcent even on the upper ſurface, eſpecially along the midrib. Peduncles tomentoſe. Corymb elongated, tomentoſe. Flowers very numerous, much ſmaller than in the common Pear*.

Native of Germany. Introduced in 1786, by Mr. John Græfer[b].

3. Branchlets or twigs thickiſh. Leaves elliptic or oval, petioled, ſilky and whitiſh underneath. Flowers in terminating corymbs. Fruit globular, extremely acerb, but when ripe melting and very ſweet.—Native of the mountains of Auſtria[c].

4. The Apple is a ſpreading tree, with the branches and twigs irregular and twiſting, more horizontal than in the Pear. Leaves ovate, ſerrate, the younger ones pubeſcent underneath. Stipules linear. Flowers in terminating, ſeſſile, villoſe umbels. Corollas white, but finely tinged with red on the outſide. Fruit roundiſh, umbilicate at the baſe, acid[d].

[a] Linn. mant. [b] Hort. kew. [c] Jacquin. [d] Smith.

The

The Apple in its wild ſtate, then called the Crab or Wilding, is armed with thorns, as well as the wild Pear. The peduncles are rarely ſubdivided, and are moſtly covered with ſoft down; as is the inſide, and ſometimes the outſide of the calyx*. According to Scopoli, the calyx is ſmooth on the outſide, but lanuginoſe within, and wrinkled at the baſe. Probably theſe circumſtances vary. Linnæus diſtinguiſhes two varieties of the wild Apple: the common one, with a very acid fruit, and another with a bitter fruit, which becomes ſweetiſh when ripe. This is more rare, and is found chiefly in Smoland. Perhaps it may be the ſame with the *nivalis* of Jacquin.]

Mr. Miller mentions two varieties in the fruit of the Crab, one white, the other purple towards the ſun: [it is commonly yelloviſh green with a tinge of red.] He alſo ſpeaks of a variety with variegated leaves; but when the trees grow vigorous, the leaves ſoon become plain.

[Haller thus diſcriminates the Apple tree. It has many things in common with the Pear tree, but the leaf is more ſhortly mucronate, leſs manifeſtly ſerrate, ſubhirſute underneath. The flowers tinged with red, and ſmelling very ſweet. The peduncle ſhorter. The ſtamens uſually from nineteen to twenty-five: (in the Pear twenty-two. Pollich aſſigns nineteen as the limit in the Apple, twenty-one in the Pear.) The fruit round, hollowed at the peduncle, depreſſed at top, leſs aſtringent but more acid than the Pear, of a ſofter texture. The Apple has woody threads paſſing through it from the peduncle, ten of which are regularly diſpoſed round the capſules, and tend to the calyx. It is ſaid that the fruit rots, when theſe are broken. The Pear alſo has them, but they are not ſo diſtinct, on account of the calculary or ſtony congeries—In the Apple they are placed very regularly, one at the point of each cell of the capſule, and one in the middle between the other five. They are very apparent on a tranſverſe ſection of the fruit. The cells are differently ſhaped in the two fruits: in the Apple they are narrow and pointed at both ends; in the Pear they are obovate, broad exteriorly, and drawing to a point at the end next the centre of the fruit. The Pear, however it may vary in ſhape, ſize, colour, taſte, &c. by cultivation, is generally convex and lengthened out at the baſe: whereas in the Apple it is always concave there. Beſides this, the leaves of the Apple are commonly wider in proportion to their length, of a yellower green above, and whitiſh underneath; whereas in the Pear, they are dark green above, and quite ſmooth on both ſides: their vaſcular ſyſtem is very different, being looſe in the Apple, and very cloſe in the Pear; hence the leaves of the latter are much ſtouter, and more permanent. Laſtly the growth of theſe trees is quite different; the Pear being lofty and upright, the Apple low and ſpreading.

The wood of the wild Apple is tolerably hard: it turns very clean; and when made into cogs for wheels, acquires a poliſh, and laſts a long time. The bark affords a yellow dye. The acid juice of the fruit is called Verjuice, and is much uſed in recent ſprains, and in other caſes, as an aſtringent or repellent. With a proper addition of ſugar, it is probable that a very grateful liquor might be made with the juice, little inferior to Rheniſh wine†. Lightfoot affirms, that the Crab mixed with cultivated Apples, or even alone, if thoroughly ripe, will make a ſound maſculine Syder. Every body knows that Syder is made from the juice of a variety of cultivated Apples preſſed, and fermented. Pomatum is ſo called becauſe the lard is or ought to be beat up with the pulp of Apples. This fruit, when ripe is laxative; the juice is excellent in the dyſentery; boiled or roaſted Apples fortify a weak ſtomach; Scopoli recovered from a weakneſs of the ſtomach and indigeſtion by uſing them; and they are equally efficacious in putrid and malignant fevers with juice of Lemons or Currants.

The Apple is a native of Europe; but whence and how we acquired the numerous cultivated varieties of this fruit is not known.

* Engl. bot. † Withering.

Parkinſon has fifty-ſeven varieties, beſides Sweetings and Crabs. Ray has ſeventy-eight: he has ſelected the beſt of his time, (1688) and has diſtributed them into four ſections.

First. *Early or Summer Apples.*

1. The Ginetting or Juneting.
2. The Margaret or Magdalene.
3. The King Apple.
4. The Aromatick or Golden Ruſſetting.
5. The Flax Apple.
6. The Spire Apple.
7. The Summer Queening.
8. The Go-no-further, or Cat's-head.
9. The Golden Pippin.
10. The good Houſewife or Bontradue.
11. The Giant Apple.
12. The Pomewater.
13. The Summer Pearmain.
14. The Kirton or Holland Pippin. In Suſſex, Broad-eye.
15. The Orange Apple.
16. Summer Belleboon (Belle & Bonne.)
17. The Paradiſe Apple.
18. The Famagusta.
19. The Codling.
20. The Coſtard Apple. So much eſteemed formerly that dealers in Apples were called Coſtar-mongers.
21. The Sops in Wine.

Secondly. *Provincial Apples.*

1. The Stokin or Stoken Apple. Probably from Stoke in Hereſordſhire.
2. The Golden Renet. Peculiar to Hertford.
3. The Darling. A nice fruit of Cheſhire.
4. The Angel's-bit. Famous chiefly in Worceſterſhire.
5. The Harvey Apple. From the famous Dr. Gabriel Harvey. Eſteemed at Cambridge. Large, of a whitiſh green colour, for the moſt part with black ſpots, ſcarcely laſting beyond Chriſtmas.
6. The Quarrington of Devonſhire.

Thirdly. *Winter or keeping Apples.*

1. The winter Queening.
2. The Quince Apple.
3. The winter Pearmain.
4. The Nonefuch.
5. The Pealing.
6. The Leather-coat, or winter John.
7. The Pome-roy, i. e. King of Apples.
8. The Lording.
9. The July-flower (Gilliflower) Apple.
10. The Pear Apple.
11. The Greening.
12. Lone's Pearmain.
13. The green Ruſſetting.
14. The red Ruſſetting.
15. The winter Fillet or Violet.
16. The winter Belle and Bonne.
17. The Oaken Pin.
18. The John Apple, or Deux Ans.
19. The Weſtbury.
20. The winter Reed.
21. The Flower of Kent.
22. The winter Cheſtnut.
23. The Maligar Apple.
24. The ſhort Tart.
25. The Pelmell.
26. Thrift.
27. Winter Clary.
28. Fig Apple.
29. White Pippin; in Eſſex the Renet.
30. Kentiſh Pippin.
31. French Pippin.

Fourthly, *Syder Apples.*

1. The Red-ſtreak.
2. The Bromſberry Crab.
3. The Golden Pippin.
4. The Gennet-moil.
5. The Weſtbury Apple.
6. The white and red Maſt Apples.
7. The John Apple.
8. The Underleaf.
9. The winter Fillet.
10. Elliott's.

11. Stocken Apple.
12. Bitter Scale.
13. Claret-wine Apple.
14. Arrier Apple.
15. Richard's or Orange Apple.
16. Coling Apple.
17. Olive Apple.
18. Fox-whelp.
19. Pippins and Pearmains mixt.
20. The Gilliflower Apple.

The above liſt of Mr. Ray's, was furniſhed by his friend Tancred Robinſon, from the information of the moſt ſkilful gardeners then about London. We cannot avoid obſerving how many of them have fallen into utter diſuſe within a century.

Rea enumerates only twenty choice fruits, grafted on the Paradiſe Apple, for walls, or dwarf hedge-trees in large gardens.

1. Juniting.
2. King Apple.
3. Margaret or Magdalen.
4. Famagusta.
5. Grar.
6. Good Houſwife.
7. Rome de Rambures.
8. Winter Queening.
9. Quince Apple.
10. Red Ruſſet.
11. Round Ruſſet Harvy.
12. Carliſle Pippin.
13. Bridgewater Pippin.
14. Lincoln Rennet.
15. Nonſuch.
16. Royal Pearmain.
17. Kirton Pippin.
18. Go-no-further.
19. Darling.
20. Angel's Bit.

He gives a liſt of ſixty-two ſorts proper for Orchards: and for Syder Apples refers to Mr. Evelyn's Pomona. This treatiſe gives no particular liſt, but they may be found among Mr. Ray's.

Mr. Hartlib ſpeaks of one who had 200 ſorts, and verily believes there are near 500 in this iſland.

Phillips, in his poem entitled Cyder, thus enumerates the moſt eſteemed Apples—

" The *Pippin* burniſht o'er with gold, the *Moile*
" Of ſweeteſt hony'd taſte, the fair *Permain*,
" Temper'd, like comlieſt nymph, with red and white,
" Salopian acres flouriſh with a growth
" Peculiar, ſtyl'd the *Ottley*: be thou firſt
" This Apple to tranſplant; if to the name
" Its merit anſwers, no where ſhalt thou find
" A wine more priz'd, or laudable of taſte.
" Nor does the *Eliot* leaſt deſerve thy care,
" Nor *John-Apple*, whoſe wither'd rind, entrench
" With many a furrow, aptly repreſents
" Decrepid age; nor that from *Harvey* nam'd,
" Quick-reliſhing: Why ſhould we ſing the *Thrift*,
" *Codling*, or *Pomroy*, or of pimpled coat
" The *Ruſſet*, or the *Cat's-head*'s weighty orb,
" Enormous in its growth———
" But how with equal numbers ſhall we match
" The *Muſk*'s ſurpaſſing worth! that earlieſt gives
" Sure hopes of racy wine, and in its youth,
" Its tender nonage, loads the ſpreading boughs
" With large and juicy offspring, that defies
" The vernal nippings, and cold ſyderal blaſts!
" Yet let her to the *Red-ſtreak* yield, that once
" Was of the ſylvan kind, unciviliz'd,
" Of no regard, till Scudamore's ſkilful hand
" Improv'd her, and by courtly diſcipline
" Taught her the ſavage nature to forget:
" Hence ſtyl'd the *Scudamorean* plant; whoſe wine
" Whoever taſtes, let him with grateful heart
" Reſpect that ancient loyal houſe———"

Mr. Knight affirms of theſe famous fruits, that the Moil and Redſtreak, with the Muſts and Golden Pippin, are in the laſt ſtage of decay; and the Stire and Fox-whelp are haſtening rapidly after them. The Red-ſtreak, ſo much celebrated by the writers of the laſt century, appears almoſt to have ſurvived its fame as a Cider-fruit; and indeed if it never poſſeſſed greater excellence than it does at preſent, it has certainly been much over-rated. But Mr. Knight ſuſpects that each kind of Apple is beſt calculated for Cider, when the tree has attained its maturity, and before it decays. Not that he thinks the flavour of the fruit is neceſſarily debaſed by the age of the variety; but merely that the crop in the aggregate ripens leſs perfectly, owing to the weak ſtate of ſome of the diſeaſed branches[a].]

Mr. Miller gives the following account of the varieties of Apples.

I ſhall firſt mention a few of thoſe ſorts of Apples which have been introduced from France, (Duham. 1. 322. t. 1—14.) which were moſt of them grafted on Paradiſe ſtocks, and were for ſome time much eſteemed, and ſhall mention thoſe of our own growth afterwards.

Pomme de Rambour, Duham. t. 10. The Rambour is a very large fruit, of a fine red next the ſun, and ſtriped with a paſe or yelloviſh green. This ripens very early, commonly about the end of auguſt, and ſoon grows mealy, therefore is not eſteemed in England.

Pomme de Courpendu, Duham. t. 6. the hanging body. This is a very large Apple, of an oblong figure, having ſome irregular riſings or angles, which run from the baſe to the crown; it is of a red caſt on the ſide towards the ſun, but pale on the other ſide; the foot-ſtalk is long and ſlender, ſo that the fruit is always hanging downward, which occaſioned the French gardeners to give it this name.

The Rennette-blanche, or White Renette, or French Rennette, Duham. n. 17. This is a large fine fruit, of a roundiſh figure, and of a pale green, changing a little yelloviſh when ripe, having ſome ſmall gray ſpots; the juice is ſugary, and it is good for eating or baking; it will keep till after Chriſtmas ſound.

The Rennette-griſe, Duham. t. 9. This is a middle-ſized fruit, ſhaped like the Golden Rennette, but is of a deep gray colour on the ſide next the ſun, but on the other ſide intermixed with yellow; it is a very juicy good Apple, of a quick flavour. It ripens in october, and will not keep long.

Pomme d'Api, Duham. t. 11. This is a ſmall hard fruit, of a bright purple colour on the ſide next the ſun, and of a yelloviſh green on the other ſide; it is a very firm fruit, but has not much flavour, ſo it is only preſerved by ſome perſons by way of curioſity. It keeps a long time ſound, and makes a variety in a diſh of fruit.

Le Calville d'Automne, the Autumn Calville. This is a large fruit of an oblong figure, of a fine red colour towards the ſun. The juice is vinous, and much eſteemed by the French.

Fenouillat ou Pomme d'Anis, Duham. t. 5. the Fennel, or Aniſe Apple. This is a middle-ſized fruit, a little longer than a Golden Pippin, of a grayiſh colour. The pulp is tender, and has a ſpicy taſte like Aniſe-ſeed; the wood and the leaves are whitiſh.

Pomme Violette, Duham. n. 7. the Violet Apple. This is a pretty large fruit, of a pale green, ſtriped with deep red to the ſun. The juice is ſugary, and has a flavour of Violets, which occaſioned the name.

There are not above two or three of theſe which are much eſteemed in England, viz. the French Rennette, the Rennette-griſe, and the Violet Apple; the others being early fruit, which do not keep long, and their fleſh generally mealy, do not deſerve to be propagated, as we have many better fruits in England.

I ſhall next put down thoſe ſorts of Apples which are beſt eſteemed in England, placing them in the order according to their time of ripening.

The firſt Apple which is brought to the markets, is the Codlin. This fruit is ſo well known in England, that it is needleſs to deſcribe it.

The next is the Margaret Apple: this fruit is not ſo long as the Codlin, of a middling ſize; the ſize next the ſun changes to a faint red, when ripe; the other ſide is of a pale green; the fruit is firm, of a quick pleaſant taſte, but does not keep long.

The Summer Pearmain is an oblong fruit, ſtriped

[a] Treatiſe on the Culture of the Apple and Pear, 1797.

with

with red next the ſun; the fleſh is ſoft, and in a ſhort time is meally, ſo that it is not greatly eſteemed.

The Kentiſh Fill-Baſket is a ſpecies of Codlin, of a large ſize, and ſomewhat longer ſhaped than the Codlin; this ripens a little later in the ſeaſon, and is generally uſed for baking, &c.

The Tranſparent Apple: this was brought to England a few years ſince, and was eſteemed a curioſity; it came from Peterſburgh, where it is affirmed to be ſo tranſparent, as that the kernels may be perfectly ſeen, when the Apple is held to the light; but, in this country, it is a meally inſipid fruit, not worth propagating.

Loan's Pearmain: this is a beautiful fruit, being of a middling ſize; the ſide next the ſun is of a beautiful red, and ſtriped with the ſame colour on the other; the fleſh is vinous, but as it ſoon grows meally, it is not greatly eſteemed.

The Quince Apple: this is a ſmall fruit, ſeldom larger than the Golden Pippin, but is in ſhape like the Quince, eſpecially towards the ſtalk; the ſide next the ſun is of a ruſſet colour, on the other ſide inclining to yellow: this is an excellent Apple for about three weeks in ſeptember, but will not keep much longer.

The Golden Renette is a fruit ſo well known in England, as to need no deſcription; this ripens about michaelmas, and for about a month is a very good fruit, either for eating raw or baking.

The Aromatic Pippin is alſo a very good Apple: it is about the ſize of a Nonpareil, but not ſo flat, it is a little longer; the ſide next the ſun is of a bright ruſſet colour; the fleſh is breaking, and has an aromatic flavour. It ripens in october.

The Hertfordſhire Pearmain, by ſome called the Winter Pearmain: this is a good ſized fruit, rather long than round, of a fine red next the ſun, and ſtriped with the ſame colour on the other ſide; the fleſh is juicy, and ſtews well, but is not eſteemed for eating by any nice palates. This is fit for uſe in november and december.

The Kentiſh Pippin is a large handſome fruit, of an oblong figure; the ſkin is of a pale green colour; the fleſh is breaking, and full of juice, which is of a quick acid flavour. This is a very good kitchen fruit, and will keep till february.

The Holland Pippin is larger than the former; the fruit is ſomewhat longer, the ſkin of a darker green, and the fleſh firm and juicy. This is a very good kitchen fruit, and will keep late in the ſeaſon.

The Monſtrous Renette is a very large Apple, of an oblong ſhape, turning red toward the ſun, but of a dark green on the other ſide; the fleſh is apt to be meally, ſo it is not much valued by thoſe who are curious, and only preſerved for the magnitude of the fruit.

The Embroidered Apple is a pretty large fruit, ſomewhat ſhaped like the Pearmain, but the ſtripes of red are very broad, from whence the gardeners have given it this title: it is a middling fruit, and is commonly uſed as a kitchen Apple, though there are many better.

The Royal Ruſſet, by ſome called the Leather Coat Ruſſet, on account of the deep ruſſet colour of the ſkin; this is a large fair fruit, of an oblong figure, broad towards the baſe; the fleſh is inclinable to yellow. This is one of the beſt kitchen Apples we have, and is a very great bearer: the trees grow large and handſome, and the fruit is in uſe from october till april, and is alſo a pleaſant fruit to eat.

Wheeler's Ruſſet is an Apple of a middling ſize, flat, and round; the ſtalk is ſlender, the ſide next the ſun of a light ruſſet colour, and the other ſide inclining to a pale yellow, when ripe; the fleſh is firm, and the juice has a very quick acid flavour, but is an excellent kitchen fruit, and will keep a long time.

Pile's Ruſſet is not quite ſo large as the former, but is of an oval figure, of a ruſſet colour to the ſun, and of a dark green on the other ſide; it is a very firm fruit, of a ſharp acid flavour, but is much eſteemed for baking, and will keep ſound till april, or later, if they are well preſerved.

The Nonpareil is a fruit pretty generally known in England, though there is another Apple which is frequently ſold in the markets for it, which is what the French call Haute-bonne; this is a larger fairer fruit than the Nonpareil, more inclining to yellow; the ruſſet colour brighter, and it is earlier ripe, and ſooner gone; this is not ſo flat as the true Nonpareil, nor is the juice ſo ſharp, though it is a good Apple in its ſeaſon; but the Nonpareil is ſeldom ripe before Chriſtmas; and where they are well preſerved they will keep till may perfectly ſound; this is juſtly eſteemed one of the beſt Apples that have been yet known.

The Golden Pippin is a fruit almoſt peculiar to England; there are few countries abroad where this ſucceeds well, nor do they produce ſo good fruit in many parts of England as in ſome meaſure, were to be wiſhed; which, in free ſtocks, which enlarges their being grafted on valuable, becauſe the fleſh is fruit, but renders it leſs your ſo quick, ſo is apt to be dry ſo firm, nor the flafore this ſhould always be grafted meally; thereſtock, which will not canker like the on the Crab the fruit will not be ſo fair to the ſight, and though better flavoured and keep longer. it will be

There are yet a great variety of Apples, wing inferior to thoſe here mentioned, I have on- as thoſe which are here enumerated will be ſufficient furniſh the table and the kitchen, during the whole ſeaſon of theſe fruits; ſo that where theſe ſorts can be had, no perſon of taſte will eat the other.

I ſhall here mention ſome of the Apples which are chiefly preferred for the making of Cyder, though there are in every Cyder country, new ſorts frequently obtained from the kernels; but theſe have, for ſome years, been in the greateſt eſteem.

The Red-ſtreak.
Devonſhire Royal Wilding.
The Whitſour.
Herefordſhire Under Leaf.
John Apple, or Deux-annes.
Everlaſting Hanger.
Gennet Moyle.

[In Herefordſhire, according to Mr. Marſhall[b], the *Stire* ſtands firſt in eſtimation as a Cider fruit. It is ſomewhat below the middle ſize; the form rather flat; the colour pale yellowiſh white, with ſometimes a faint bluſh on one ſide; the fleſh tolerably firm; the flavour, when fully ripe, fine. This celebrated fruit is going off.

The *Hagloe Crab* is at preſent next in eſteem. It was produced about ſeventy years ago, (1719) in a nurſery, among other ſtocks raiſed from the ſeed, by Mr. Bellamy, of Hagloe, in Glocesterſhire, grandfather of the preſent Mr. Bellamy, near Roſs in Herefordſhire, who draws from trees grafted with ſcions from this ſtock a liquor, which for richneſs, flavour, and price on the ſpot, exceeds every other. The fruit is nearly white, with a yellowiſh caſt when fully ripe, ſometimes freckled with red on one ſide: more oblong than the Stire Apple; ſoft and woolly, but not dry; with a ſheer, but when fully ripe, ſweet juice; flavour like that of the Caſhew Apple.

The *Golden Pippin* is in high eſtimation.

The old *Redſtreak* is yet in being. Fruit ſmall, roundiſh, pale-yellow with numerous faint-red ſtreaks; fleſh firm, full of juice, and when ripe finely flavoured. Little, if any genuine Red-ſtreak Cider is now made; and it probably never was equal to that from either of the preceding. The tree is of a ſingularly aukward growth; crooked, reclining, ragged and unſightly.

The *Woodcock*, another old favourite, is now going off. Fruit above the middle ſize: form ſomewhat oblong, ſet on a long footſtalk: colour of the Redſtreak, with ſome dark blood-red ſtreaks on one ſide: fleſh remarkably fine. Tree large and ſtrongly featured, forming large boughs in the Pear-tree manner.

Other favourite Cider Apples are—the *Muſt*, of which there are three varieties.

The *Pauſon*: middle-ſized and green.
The *Royal Wilding*: large and white.

[b] Gloeſterſh. 2. 251.

The

The *Dymmock Red*: middle-ſized and red.

The *Cocagee*: above the middle ſize; greeniſh white with an orange bluſh; well fleſhed and highly flavoured.

Ruſſets of various kinds, particularly the *Longney*.

Bromley, *Foxwhelp*, *Red Crab*, *Queening*, all large red fruit.

Theſe will yield in their turn to other varieties, and it is now a general opinion, that Apples whilſt are the creatures of art and cultivation, cannot be preſerved beyond a certain period.

Mr. Grimwood, a nurſeryman of eminence at Kenſington, is of opinion that it is not a decline in the quality of the fruit, but in the tree, owing either to want of health, the ſeaſon, the ſoil, the mode of planting, or to the ſtock which they are grafted on, being too often raiſed from the ſeed of Apples in the ſame place or county. It appears, he ſays, from the ableſt men in his profeſſion, that they never found a real decline in any one kind of fruit, but from the above cauſes[t].

The law of nature, Mr. Marſhall obſerves, though it ſuffer man to improve the fruits which are given us, appears to have ſet bounds to his art, and to have numbered the years of his creations. Artificial propagation cannot preſerve the varieties in perpetuity. A time arrives, when they can be no longer propagated with ſucceſs. All the old Cider-fruits are now loſt, or elſe ſo far on the decline, as to be deemed irrecoverable.

The popular idea among orchard-men (in Herefordſhire) is, that the decline of the old fruits is owing to a want of freſh grafts from abroad; under a notion that the higheſt-flavoured Apples grow there, in a ſtate of nature, as the Crab does in this iſland. It ſcarcely needs to be obſerved that this is a groſs error.

That the firſt improved fruits of our anceſtors were fetched from the continent is highly probable[u]. Mr. Lightfoot informs us that the Apple is remarkable for its longevity; and that it is ſaid ſome trees in Herefordſhire have lived a thouſand years. This report is tranſcribed from Haller, without acknowledgment, as is uſual with Mr. Lightfoot. Haller quotes *Hereford orchards*, a book or pamphlet, which I do not recollect having ſeen. But no one, I preſume, will be diſpoſed to admit ſuch a report, unleſs we could have better evidence than mere tradition.

According to Stow, Carps and Pippins were brought into England by Mafcall. It was the plain induſtry, ſays Mr. Evelyn[x], of one (Richard) Harris, a fruiterer to King Henry the Eighth, that the fields and environs of about thirty towns in Kent only, were planted with fruit, (from Flanders) to the univerſal benefit, and general improvement of that county to this day; as by the noble example of my Lord Scudamor, and of ſome other publick-ſpirited gentlemen in thoſe parts, all Herefordſhire is become, in a manner, but one intire orchard.

Lord Scudamor was ambaſſador to the court of France in the time of King Charles the Firſt; and having collected in Normandy ſcions of Cyder-Apple trees, when he returned to England, encouraged the grafting them throughout the county of Hereford[y].

But theſe and others were partial introductions. There can be no doubt but that the Apple has been cultivated in England time immemorial, for deſerts, for the kitchen, and for cyder.

It is probable that the ſorts originally imported have long ago been loſt, and though we have ſtill ſome Apples by the ſame name with thoſe in Parkinſon, (1629) yet it is by no means certain that they are the ſame fruit; and many of the numerous varieties we are at preſent poſſeſſed of, were raiſed from ſeed in this country[z].

Mr. Knight obſerves[a], that the exiſtence of every variety of Apple appears to be confined to a certain period, that no one of them now cultivated ſeems to be more than two hundred years old; and that all efforts which have been hitherto made to propagate ſcalthy trees of thoſe varieties which have been long in cultivation, have been entirely unſucceſsful: but of this more under the head of Propagation and Culture.

5. It is ſuppoſed that this may have ſprung from the common Apple. The leaves are pubeſcent underneath. Peduncles one-flowered at the axils of the leaves towards the end of the branches, forming a ſort of umbel. Petals yelloviſh green. Styles five, filiform, ſmooth; with club-ſhaped ſtigmas[b]. Willdenow did not obſerve any ſtamens.

6. The Chineſe Apple tree, when it bloſſoms in perfection, anſwers truly to the name of *ſpectabilis*; a more ſhowy tree can ſcarcely be introduced to decorate the ornamental plantation. It bloſſoms about the end of april or beginning of may. The flowers are large, of a pale red when open, and ſemi-double; the buds are of a much deeper hue. The fruit is of little account, and but ſparingly produced. Trees of this ſpecies are to be met with in ſome gardens twenty or thirty feet high[c]. Cultivated in 1780, by John Fothergill, M.D.[d]

7. This has a ſtrong woody ſtem, ſending out many ſide branches, and covered with a ſmooth brown bark. The leaves are ſhaped like thoſe of the Cherry-tree: they are of a deep green on their upper ſide, but paler on their under, ſlightly ſerrate, and on long footſtalks. The flowers come out in bunches from the ſide of the branches on long ſlender peduncles; the petals are white, and ſhaped like thoſe of the Pear-tree: they appear in april, and are ſucceeded by roundiſh fruit, about the ſize of large Duke Cherries, changing to a yelloviſh colour variegated with red, of a very auſtere taſte, decaying like the fruit of the Medlar, and then more palatable.

It is ſuppoſed to be a native of Siberia; and bore fruit in the botanic garden at Chelſea before the year 1760[e].

[8. This is a tree with even branches. Leaves like thoſe of Cornus, ovate, finely ſerrate, even on both ſides. Petioles the length of the leaf, at the baſe connecting two linear-lanceolate ſtipules. Peduncles four, filiform, even, axillary, cluſtered, quite ſimple, one-flowered, the length of the petioles. Germ inferior, globular, ſmooth, ſmall. Petals ſeſſile, oval, concave, white, biggith. Stamens twenty, ſhorter than the piſtils; which are ſhorter than the corolla. Fruit roundiſh, five-celled, red. Seeds in each cell two, callous. Calyx minute, deciduous[f].

Pallas deſcribes the roots as ſtriking deep, and throwing up abundance of ſuckers, the trunk ſcarcely three or four feet high, ſeldom thicker than the human arm, commonly twiſted, covered with a rugged, aſh-coloured bark, full of chinks; the wood whitiſh with gray ſtripes; the whole forming a ſpheroidal head, a fathom or a little more in height: the leaves ovate-acuminate, ſerrate, ſmooth, on long petioles, and ſomewhat pendulous; petioles ſubpubeſcent; ſtipules briſtle-ſhaped, ſlender. Umbels from four to eight-flowered, accompanied with leaves, on very long ſlender even peduncles. Fruit a pome, the ſize of a ſmall Cherry, on a long peduncle, globular, green but turning yellow and more or leſs tinged with red; five-celled, with two oblong ſharp ſeeds in each cell: the pulp is reddiſh with an acid juice, which is uſed for making Quas and Punch in Siberia, where it grows naturally, and is common about the lake Baikal and in the country beyond it, in Dauria, and as far as Ircut; but not in other parts of that extenſive country: it affects the banks of rivers, and low ſpots near them; flowering in may, and ripening its fruit in auguſt and ſeptember[g]. With us it flowers in april; and was introduced in 1784, by Mr. John Græfer[h].

9. Umbel on ſmooth peduncles. Calyxes ſmooth on the outſide; tomentoſe within. Leaves like thoſe of the Apple, but more ſmooth, and more finely ſerrate[i].]

[t] Bath papers, 4. 242. [u] Gloceſterſh. 2. 246.
[x] Pomona, pref.
[y] Gibſon's View of the Churches of Dore and Home-Lacy.
[z] Marſh. Gloc. 2. 248.
[a] Treatiſe on the Culture of the Apple and Pear, 1797. p. 7, 9.
[b] Willdenow. [c] Curtis. [d] Hort. kew.
[e] Miller's figures. [f] Linn. mant. [g] Fl. roſſ. p. 23.
[h] Hort. kew. [i] Linn. ſpec.

The leaves of this are longer and narrower, and are cut into acute angles on their ſides. The flowers have a fragrant odour, perfuming the North American woods in their ſeaſon. The inhabitants plant them for ſtocks to graft other Apples upon.

[Kalm ſays, that this tree is rather ſcarce in New Jerſey, but plentiful in Penſylvania.

Gronovius firſt remarked it in Virginia. They frequently plant it near their farms, on account of the fine ſmell which the flowers afford, ſomewhat like the Raſpberry. They expand in the beginning of may. The fruit is ſmall, ſour, and unfit for any thing but to make vinegar of. It lies under the trees all winter, acquires a yellow colour, and ſeldom begins to rot till ſpring comes on.

It flowers here in may; and appears by Furber's catalogue to have been cultivated here in 1724[a].

10. Native of North America. It flowers here in may; and was cultivated in 1750, by Mr. Chriſtopher Gray[b], nurſery-man at Fulham.

11. This is a ſhrub or ſmall tree, wholly ſmooth. Branches and branchlets alternate, flexuoſe, even, aſh-coloured, erect. Leaves many on the branchlets, from every other bud, ſubpetioled, ovate or wedge-ſhaped, blunt, ſometimes emarginate, ſerrate, above nerved, deep green; underneath netted, pale; ſpreading, ſmooth, unequal, an inch long. Flowers on the branchlets alternate, ſubpeduncled, in pairs. Perianth one-third of the length of the corolla, green below, purple above. Corolla fleſh-coloured. Stamens thirty and upwards. Styles about the length of the filaments; with trifid, reflex, yellow ſtigmas. Pome ſubglobular, ſmooth, the ſize of a Walnut, five-celled, with ſeveral ſeeds to each cell.—Native of Japan.

12. The Quince tree is a low crooked and diſtorted tree, covered with a brown bark, and much branched. Leaves roundiſh or ovate, entire, above duſky green, underneath whitiſh, on ſhort petioles. Flowers large. Corolla pale red or white. Calyx ſpreading, ſerrate, the length of the corolla. Fruit a pome, varying in ſhape in the different varieties—globular, oblong or pear-ſhaped.]

Mr. Miller has three varieties: 1. C. oblonga or Pear Quince, with oblong-ovate leaves, and an oblong fruit lengthened at the baſe. 2. C. maliformis or Apple Quince, with ovate leaves and a rounder fruit. 3. C. luſitanica or Portugal Quince, with obovate leaves; and an oblong fruit which is more juicy and leſs harſh than the others, and therefore the moſt valuable.

[This agrees with the ſpecies immediately preceding in having ſeveral ſeeds in each cell[b].

The Quince has its Latin name *Cydonia Malus* and the Greek Μηλέα Κυδωνία, from Cydon in Crete, whence it is ſaid to have been originally brought. It is now reputed to be a native of Auſtria, Germany, and ſome other parts of Europe. It flowers in may and june; and was cultivated here in the time of Gerarde; (1597) probably much earlier.

The Quince has a peculiar ſmell, and an auſtere taſte when raw, but prepared is much eſteemed. The expreſſed juice, repeatedly taken in ſmall quantities, is ſaid to be cooling, reſtringent and ſtomachic; uſeful in nauſea, vomitings, nidorous eructations, and ſome alvine fluxes. Formerly this juice was ordered to be made into a ſyrup; but the only preparation of the Quince now directed is a mucilage of the ſeeds, made by boiling a dram of them in eight ounces of water, till it acquires a proper conſiſtence. This has been recommended in apthous affections, and excoriations of the mouth and fauces. It may be a more pleaſant mucilage, but it is certainly a leſs efficacious one, than that of the ſimple gums[c].

13. This is a low buſhy tree, a fathom or a fathom and half in height, branched very much, and ſhooting up from the root. Trunk ſeldom more than an inch and half in diameter; with a thin browniſh aſh-coloured bark, and a white, uniform and very hard wood, poliſhing like bone. Leaves in bundles as it were on the ſhoots, but ſcattered alternately on the thorny branches, attenuated into the petiole, lanceolate, ſtiffiſh, for the moſt part quite entire, ſubſerrate towards the tip, covered with a ſmooth nap, duſky green above, glaucous-hoary underneath. Stipules none. Stamens about ſeventeen. Fruit ſolitary or two together, turbinate, ſubvilloſe, attenuated into a cylinder at the baſe, rounded above. Seeds in each of the five cells two, ovate-acute, flat on one ſide, of a yellow-teſtaceous colour. It flowers at the end of april, and perfects its fruit in june; but the fruit is ſmall and of no value.

Native of Siberia, in the ſandy deſert between the rivers Teree and Cuma, &c. on Caucaſus, and in Perſia[d]. Introduced in 1780, by Peter Simon Pallas, M. D.[e]

Some modern authors have united to this genus ſeveral ſpecies of *Meſpilus* and *Cratægus*; but I have followed Linneus, fully aware that there is no end to theſe changes in natural orders.]

PROPAGATION AND CULTURE.

The ripening of Pears may be accelerated by the method of pruning and managing theſe trees, which is greatly improved within the ſpace of a few years paſt; for if we look into the directions which are given by the beſt writers on this ſubject, we ſhall ſoon diſcover how little they knew fifty years ago, of the true method of pruning and managing moſt ſorts of fruit-trees, ſcarce one of them making any difference in the management of the different kinds of fruit.

Pears are propagated by budding or grafting them upon ſtocks of their own kind, which are commonly called free ſtocks, or upon Quince ſtocks, or White-thorn, upon all which theſe fruits will take; but the latter ſort of ſtock is now ſeldom uſed, becauſe they never keep pace in their growth with the fruit budded or grafted upon them; as alſo becauſe the fruit upon ſuch ſtocks are commonly drier, and more apt to be ſtony, than when they are upon Pear ſtocks. Quince ſtocks are greatly uſed in the nurſeries for all ſorts of Pears which are deſigned for dwarfs or walls, in order to check the luxuriancy of their growth, ſo that they may be kept within compaſs better than upon free ſtocks. But againſt the general uſe of theſe ſtocks, for all ſorts of Pears indifferently, there are very great objections: 1ſt, Becauſe ſome ſorts of Pears will not thrive upon theſe ſtocks, but in two or three years decay, or at moſt will but juſt keep alive. 2dly, Moſt of the ſorts of hard breaking Pears are rendered ſtony, and good for little; ſo that whenever any of theſe ſorts are thus injudiciouſly raiſed, the fruit, although the kind be ever ſo good, is condemned as good for nothing by ſuch as are not well acquainted with it, when the fault is entirely owing to the ſtock on which it was grafted. On the contrary, moſt melting buttery Pears are greatly improved by being upon Quince ſtocks, provided they are planted on a ſtrong ſoil; but, if the ground be very dry and gravelly, no ſort of Pear will do well upon Quince ſtocks.

Theſe general directions being given, there is no occaſion to repeat any part of the method in which theſe ſtocks are raiſed, and the fruits budded or grafted thereon, which has been already mentioned under the article of NURSERY.

The diſtance which theſe trees ſhould be planted either againſt walls or eſpaliers, muſt not be leſs than forty feet; for if they have not room to ſpread on each ſide, it will be impoſſible to preſerve them in good order, eſpecially thoſe on free ſtocks, for the more theſe trees are pruned, the more they will ſhoot; and, as I ſaid before, many ſorts of Pears produce their bloſſom-buds firſt at the extremity of the former year's ſhoots, ſo that when they are ſhortened, the fruit will be cut away, and this cannot be avoided, where the trees have not room allowed in their firſt planting.

This diſtance, I doubt not, will be objected to by many who have not fully attended to the growth of theſe trees, eſpecially as it hath been the general

[a] Hort. kew. [b] Idem. [b] Willdenow. [c] Woodville. [d] Pallas. [e] Hort. kew.

practice of moſt gardeners to plant theſe trees at leſs than half the diſtance which is here mentioned; but, whoever will be at the trouble to view any of theſe trees which have been ſome years ſtanding, they will always find, if by accident, one of theſe trees has been planted againſt a building, where the branches have had room to ſpread, that this tree has produced more fruit than twelve trees which have been crouded cloſe, and have not room for their branches to extend. There are ſome Pear-trees now growing, which ſpread more than fifty feet in length, and are upwards of twenty feet high, which produce a much greater quantity of fruit than if there had been three trees in the ſame room they would have done, as there are examples enough to prove, where trees are planted againſt houſes and the ends of buildings at about twelve feet, or much leſs diſtance, becauſe there is height of walling for them to grow, which is the reaſon commonly given by thoſe who plant theſe trees ſo cloſe together. But one tree will bear more fruit, when the branches are trained horizontally, than three or four trees, whoſe branches are led upright, and there never can be any danger of the upper part of the wall being left naked or unfurniſhed; for I have ſeen a Pear-tree which has ſpread more than fifty feet in width, and covered the wall upwards of thirty-ſix feet in height; this was a ſummer Boncrêtien Pear, and was extremely fruitful, which rarely happens to this ſort when they are not allowed a large ſhare of room. The fineſt tree of this ſort of Pear, which I have ever ſeen, was a large ſtandard-tree in my own poſſeſſion, whoſe ſtem was not more than ten feet high, where the branches came out regularly on every ſide, and extended near thirty feet from the trunk, many of which were by the weight of the fruit in ſummer brought down to the ground, ſo they were obliged to be ſupported with poles all around the tree towards the extremity of the branches, to prevent their lying upon the ground; and this tree had its branches ſo diſpoſed as to form a natural parabola of forty feet in height, bearing from the loweſt to the higheſt branches; ſo that in a kindly ſeaſon, when the bloſſoms eſcaped the froſt, it has produced upwards of two thouſand Pears, which were much better flavoured than any of the ſame ſort which I have yet taſted. This inſtance I mention, only to ſhew how much one of theſe trees will ſpread, if proper room be allowed it; and alſo to obſerve, that as the branches of this tree had never been ſhortened, they were fruitful to their extremities. This ſhews the abſurdity of the French gardeners, who do not allow more than ten or twelve feet diſtance to theſe trees; and ſome of their moſt improved writers on this ſubject have adviſed the planting an Apple-tree between the Pear-trees, where they are allowed twelve feet; and yet theſe authors afterwards ſay, that a good Pear-tree will ſhoot three feet each way in one year; therefore, according to their own obſervation, the trees ſo planted will have their branches meet together in two or three years at moſt, and what muſt be the caſe with ſuch trees in five or ſix years is not difficult to know. But this method of planting has not been peculiar to the French, for moſt of the gardens in England have been little better planted. Indeed, thoſe perſons who were intruſted with the making and planting moſt of the Engliſh gardens, had little ſkill of their own, ſo were obliged to follow the directions of the French gardeners; of whom they had ſo great an opinion, as to get their books tranſlated, and to theſe have added ſome trifling notes, which rather betray their weakneſs; for, where they have objected to the little room which their authors had allowed to theſe trees, they have, at the moſt, allowed them but three feet more; from which it is plain, they had not conſidered the natural growth of the trees, and whoever departs from nature, may be juſtly pronounced an unſkilful gardener.

As moſt of the Engliſh gardens have been made and planted by perſons of little judgment, it is very rare to find any of them which produce much fruit; for although many of theſe gardens have been totally altered and new planted, yet they have ſeldom been much altered for the better; and the poſſeſſors have been put to the expence of removing the old trees, alſo the earth of their borders, and to purchaſe new trees, which have been planted perhaps a foot or two farther aſunder, than the old trees which were removed; ſo that when the young trees have grown a few years, they were in the ſame condition as the old, and it will be the loſs of ſo many years to the owner: but this will conſtantly be the caſe, when it is the intereſt of the perſons employed, who can ſell ſo many young trees; and the planting of three times the number of trees in a garden, more than is proper, may in ſome meaſure be aſcribed to the ſame, though in many inſtances I ſhall be inclinable to think they have proceeded from ignorance, rather than deſign.

But where fruit-trees have been thus injudiciouſly planted, if the ſtocks are healthy and good, the beſt way to recover this loſs is to dig up two or three, and leave every third or fourth tree, according to the diſtance which they were planted, and ſpread down the branches of thoſe which are left horizontally; I mean, all ſuch as are capable of being ſo brought down: but thoſe which are too ſtubborn for this, ſhould be cut off near the ſtem, where there will be new ſhoots enough produced to furniſh the wall or eſpalier; and if the ſort of fruit is not the ſame as deſired, the young branches may be budded the ſame ſummer, or grafted the following ſpring with any other ſort of Pear, and hereby many years may be ſaved; for one of theſe old trees ſo budded or grafted, will ſpread to a much greater length, and produce more fruit, when thus managed, in three years, than a new tree will in ten or twelve, eſpecially if the ground is mended. This is a method which I have practiſed with great ſucceſs, where I have been employed to mend the blunders of theſe great gardeners, as they are ſtiled, and hereby the walls and eſpaliers have been well furniſhed in a few years.

But the next thing to be done, after being furniſhed with proper trees, is preparing the ground to receive them; in doing of which, there ſhould be great regard had to the nature of the ſoil, where the trees are to grow; for, if it is a ſtrong ſtiff land, and ſubject to wet in the winter, the borders ſhould be raiſed as much above the level of the ground as you conveniently can. And if under the good ſoil there is a ſufficient quantity of lime, rubbiſh, or ſtones laid to prevent the roots of the trees from running downward, it will be of great ſervice to the trees. The borders for theſe ſhould not be leſs than eight feet broad, but, if they are twelve, it will be ſtill better. And as theſe borders may be planted with ſuch ſorts of eſculent plants as do not grow large, or whoſe roots do not grow deep, or mat together on the ſurface, theſe will do no harm to the Pear-trees; for theſe are not ſo nice in their culture as Peach and Nectarine-trees, ſo the turning the ground, and mending it for theſe crops, will rather improve than injure the trees, provided the plants do not ſhade the trees, or are not ſuffered to ſtand too long upon the borders. But all the Cabbage kind, as alſo Beans, ſhould be excluded from theſe borders, becauſe they root deep in the ground, and draw much nouriſhment from the trees.

But if the ſoil is ſhallow, and the bottom is either gravel or chalk, there muſt be a ſufficient depth of good earth laid upon the borders, ſo as to make them two feet and a half deep; for if the ground is not of this depth, the trees will not thrive well. And, in doing of this, I muſt caution every perſon not to dig out the gravel or chalk in a trench, (as is by ſome practiſed) and fill this trench with good earth; for by ſo doing, when the roots of the trees are extended to the width of the trench, they will meet with the gravel which will ſtop them, ſo that they will be confined, as if they were in tubs of earth, whereby the trees will ſoon ſhew their diſtreſs; therefore, when the gravel or chalk is removed, it ſhould be entirely taken away over the whole border, otherwiſe it will be better to raiſe the whole border above it.

If the garden is to be new-made from a field, then all the good earth on the ſurface ſhould be carefully

preſerved;

preſerved; and, if the good ground is taken out where the walks are deſigned to be made, and laid upon the borders, or in the quarters, it will add to the depth of the ſoil, and ſave expence in bringing in new earth. If the ground can be prepared one year before it is planted, the trees will thrive the better; for by laying the ground in ridges, and turning it over two or three times, it will looſen the ſoil, and render it much better for planting; but in trenching or ploughing the ground, there ſhould be great care taken not to go deeper than the ground is good, otherwiſe all the good ſoil will be buried below the roots, and the bad ground will be turned on the top, which is what I have known done at a great expence by perſons, who have been at the top of their profeſſion, and have thereby entirely ruined the gardens.

Where there is a neceſſity of bringing any freſh earth for the borders, it will be proper to do it as ſoon as poſſible, and to mix this with the ſurface of the earth of the borders, that it may be turned over two or three times, that the parts may be well mixed and incorporated before the trees are planted; and, if ſome very rotten dung is added to this, it will greatly improve it. In chuſing the earth which is to be brought into the garden, there ſhould be this care, viz. That if the natural ſoil of the garden is light and dry, then the new earth ſhould be loamy and ſtiff; but where the natural ſoil is ſtrong or loamy, then the new earth ſhould be light and ſandy, which will looſen the parts of the natural ſoil, and greatly mend it.

There are ſome perſons who recommend laying the whole depth of the borders with what they call virgin earth, that is, ſuch as is taken from a paſture where the land has not been ploughed; but if this is not brought into the garden at leaſt one year before the trees are planted, that by turning it over often it may be ſweetened, it will not be ſo good as that which is taken from a kitchen-garden, where the land is good, and has been well wrought; for by often turning and breaking the ſoil, it will be better prepared to receive the trees.

Others recommend mixing a great quantity of rotten dung with the earth of the borders, but this is not ſo proper; for, by making the ground too rich, it will only encourage the luxuriant growth of the trees; therefore it is always better to mend the borders from time to time as they may require, and not to add ſo much dung in the firſt making them.

Another care is required in making the borders on wet ground, which is to contrive ſome covered drains to convey off the water in winter, otherwiſe, by this being detained about the roots of the trees, it will greatly prejudice them; and in building the walls round a kitchen-garden, where the ground is inclinable to be wet, there ſhould be ſome arches turned in the foundations of thoſe walls which are in the loweſt part of the garden, to let off the wet.

The manner of preparing theſe trees for planting is the ſame as has been directed for other fruit-trees, viz. to cut off all the ſmall fibres from the roots, and to ſhorten ſome of the longeſt roots, and cut off all the bruiſed ones, or ſuch as ſhoot downright; this being done, you ſhould plant them in the places intended at the before-mentioned diſtance. The beſt time to plant theſe trees (if upon a middling or dry ſoil) is in october or november, leaving their heads on till ſpring, which ſhould be faſtened either to the walls or ſtakes, to prevent the wind from diſturbing their roots; and in the beginning of march their heads ſhould be cut off in the manner already directed for Peaches and other fruit-trees, obſerving alſo to lay ſome mulch upon the ſurface of the ground about their roots when they are planted, as has been ſeveral times already directed for other trees; but in wet ground the trees may be planted in february, or the beginning of march, at any time before the buds are much ſwelled, but theſe may be cut down when they are planted.

The firſt ſummer after planting, the branches ſhould be trained to a wall or eſpalier (againſt which they are planted) in a horizontal poſition, as they are produced, without ſhortening them; and the michaelmas following, ſome of theſe ſhoots ſhould be ſhortened down to five or ſix eyes, in order to obtain a ſufficient quantity of branches, to furniſh the lower part of the wall or eſpalier; but the ſhoots ought not to be ſhortened, unleſs where there is a want of branches to fill a vacancy; therefore the leſs a knife is uſed to theſe trees, the better they will ſucceed; for, whenever the ſhoots are ſtopped, it occaſions the buds immediately below the cut to ſend forth two or more ſhoots, whereby there will be a confuſion of branches, and rarely any fruit is produced with this management.

The diſtance which the branches of Pears ſhould be trained, muſt be proportioned to the ſize of their fruit; therefore ſuch ſorts, whoſe fruit are ſmall, may be allowed five or ſix inches, but the larger ſorts muſt not be leſs than ſeven or eight inches aſunder. If this be duly obſerved, and the branches carefully trained horizontally as they are produced, there will be no occaſion for ſo much cutting as is commonly practiſed on theſe trees, which, inſtead of checking their growth, does, on the contrary, cauſe them to ſhoot the ſtronger.

It is very ſurpriſing to read the tedious methods, which moſt of the writers on fruit-trees have directed for pruning theſe trees; for, by their prolix and perplexed methods, one would imagine they had endeavoured to render themſelves as unintelligible as poſſible; and this, I am ſure, may be affirmed, That it is next to impoſſible for a learner ever to arrive at any tolerable ſkill in pruning by the tedious and perplexed directions which are publiſhed by Monſieur Quintiny, and thoſe who have copied from him; for, as theſe have all ſet out wrong in the beginning, by allowing their trees leſs than half the diſtance which they ſhould be planted, they have preſcribed rules to keep them within that compaſs, which are the moſt abſurd, and contrary to all reaſon, therefore ſhould not be practiſed by thoſe perſons who are deſirous of having plenty of fruit.

I ſhall therefore only lay down a few neceſſary directions for pruning and managing theſe trees, which ſhall be done in as few words as poſſible, that a learner may the more eaſily underſtand it, and which (together with proper obſervations) will be ſufficient to inſtruct any perſon in the right management of them.

Pear-trees generally produce their bloſſom-buds firſt at the extremity of the laſt year's ſhoots, ſo that if theſe are ſhortened, the bloſſoms are cut off; but this is not all the damage, for (as I before ſaid) this occaſions the buds immediately below the cut to put forth two or more ſhoots, whereby the number of branches will be increaſed, and the tree crowded too much with wood; beſides, thoſe buds, which by this management produce ſhoots, would have only produced curſons or ſpurs, upon which the bloſſom-buds are produced, if the leading branch had not been ſhortened; therefore theſe ſhould never be ſtopped, unleſs to furniſh wood to fill a vacancy.

It is not neceſſary to provide a new ſupply of wood in Pear-trees, as muſt be done for Peaches, Nectarines, &c. which only produce their fruit upon young wood; for Pears produce their fruit upon curſons or ſpurs, which are emitted from branches which are three or four years old; which curſons continue fruitful many years, ſo that, where theſe trees have been ſkilfully managed, I have ſeen branches which have been trained horizontally upwards of twenty feet from the trunk of the tree, and have been fruitful their whole length. And if we do but carefully obſerve the branches of a healthy ſtandard-tree, which has been permitted to grow without pruning, we ſhall find many that are ten or twelve years old, or more, which are very full of theſe curſons, upon which a good number of fruit is annually produced.

During the ſummer ſeaſon theſe trees ſhould be often looked over to train in the ſhoots, as they are produced, regularly to the wall or eſpalier, and to diſplace fore-right and luxuriant branches as they ſhoot out, whereby the fruit will be equally expoſed to the air and ſun, which will render them more beautiful and better taſted than when they are ſhaded by the

branches;

branches; and by thus managing the trees in ſummer, they will always appear beautiful, and in winter they will want but little pruning.

Where Pear-trees are thus regularly trained without ſtopping their ſhoots, and have full room for their branches to extend on each ſide, there will never be any occaſion for diſbarking the branches, or cutting off the roots (as hath been directed by ſeveral writers on gardening;) which methods, however they may anſwer the intention for the preſent, yet will certainly greatly injure the trees, as muſt all violent amputations, which ſhould ever be avoided as much as poſſible on fruit-trees; and this, I am ſure, can never be wanted, where trees have been rightly planted, and regularly trained, while young.

The ſeaſon for pruning theſe trees is any time after the fruits are gathered, until the beginning of march; but the ſooner it is done after the fruit is gathered, the better, for reaſons already given for pruning of Peach-trees; though indeed the deferring of theſe until ſpring, where there are large quantities of trees to prune, is not ſo injurious to them, as to ſome tender fruits; but if the branches are regularly trained in ſummer, and the luxuriant ſhoots rubbed off, there will be little left to do to them in winter.

All the ſorts of Summer Pears will ripen very well either on ſtandards, dwarfs, or eſpaliers, as will all Autumn Pears upon dwarfs or eſpaliers; but, where a perſon is very curious in his fruit, I would always adviſe the planting them againſt eſpaliers, in which method they take up but little room in a garden, and, if they are well managed, appear very beautiful; and the fruit is larger and better taſted than thoſe produced on dwarfs, as has been already obſerved; but ſome of the Winter Pears muſt be planted againſt eaſt, ſouth-eaſt, or ſouth-weſt walls, otherwiſe they will not ripen well in England in bad ſeaſons.

But although this may be the caſe with ſome of the late Winter Pears in very bad ſeaſons, yet, in general, moſt ſorts of them will ripen extremely well in all warm ſituations, when they are planted in eſpalier, and the fruit will be better flavoured than that which grows againſt walls, and will keep much longer good; for, as the heat againſt walls which are expoſed to the ſun will be very great at ſome times, and at others there will be little warmth, all fruit which grow near them, will be haſtened unequally, and therefore are never ſo well flavoured as the ſame ſorts are which ripen in the open air; and all the fruit, which is ripened thus unequally, will decay much ſooner than thoſe which ripen gradually in the open air; therefore thoſe Winter Pears which grow in eſpalier, may be kept ſix weeks longer than thoſe which grow againſt walls, which is a very deſirable thing; for to have plenty of theſe fruit at a ſeaſon when it is very rare to find any other fruit to ſupply the table but Apples, is what all lovers of fruit muſt be greatly pleaſed to enjoy; which is what may be effected by planting many of the late ſorts in eſpalier, where, although the fruit will not be ſo well coloured as thoſe from the walls, yet they will be found exceeding good. When the Beſi de Chaumontelle came firſt to England, the trees were planted in eſpalier, and ſome of them not on a very good ſoil, or in a warm ſituation, and yet from theſe trees I have eaten this Pear in great perfection in april, and ſometimes it has kept till may; whereas, all thoſe which have been ſince planted againſt walls ripen their fruit by the beginning of november, and are generally gone by the middle of december; nor are the latter ſo well taſted as thoſe off the eſpaliers.

The Virgoleuſe and St. Germain, as alſo the Colmar, are eſteemed the moſt difficult ſorts to ripen their fruit, yet theſe I have eaten in great perfection from eſpaliers, and often from ſtandard-trees, where they grew upon a warm ſoil; but the fruit was much ſmaller on the ſtandard-trees than thoſe of the ſame ſorts which grew againſt walls or eſpaliers, but they were full as well flavoured, and ſome of theſe ſorts I have eaten good in april, which is two months later than they uſually keep; but yet I would not adviſe the planting theſe late Pears in ſtandard-trees, be-

cauſe they ſhould hang very late on the trees in autumn, at which ſeaſon the winds are generally very high; and theſe ſtandard-trees being much expoſed the fruit is often blown off the trees before they are ripe; and thoſe of them, which may hang on the trees, are frequently bruiſed by being forced againſt the branches by the winds, ſo that they ſeldom keep well. What I mentioned this for, is to prove, that theſe Pears will ripen very well without the aſſiſtance of a wall; ſo that if they are planted in eſpaliers where the trees are kept low, the fruit will not be ſo much expoſed to the ſtrong winds in autumn as thoſe on the ſtandards, therefore can be in no danger of the fruit coming to perfection; and as the trees in eſpaliers will be conſtantly pruned, and managed in the ſame manner as thoſe againſt walls, the fruit will be as large on thoſe trees; therefore, where a perſon has a warm ſituation and a kindly ſoil, I would not adviſe the being at an expence to build walls on purpoſe for Pears, but to plant them againſt eſpaliers: and where there is any one who is very curious in having plenty of theſe fruit, and will be at the expence to procure them, I ſhould adviſe having a ſufficient quantity of Reed mats made to fix up againſt the back of the eſpalier in the ſpring, when the trees are in bloſſom, which will ſcreen them from cold winds, and preſerve the tender fruit until they are paſt danger, when the Reeds may be taken down, and put under a ſhed to preſerve them from the weather; and if the autumn ſhould prove bad, theſe Reeds may be fixed up again, which will forward the ripening of the fruit, and alſo prevent the winds from blowing down, and bruiſing it.

But after the fruit is ſet and growing, there will be farther care neceſſary in order to have the fruit good; for it is not enough to have preſerved a good crop of fruit on the trees, and then leave them entirely to nature during the ſeaſon of their growth, but there will require ſome ſkill and attendance on the trees to help nature, or ſupply the deficiency of ſeaſons; for beſide the pruning and training trees in the manner before directed, there will alſo be wanting ſome management of their roots, according to the nature of the ſoil, and the difference of ſeaſons. In all ſtrong land, where the ground is apt to bind very hard in dry weather, the ſurface of the borders ſhould be now and then forked over to looſen the earth, which will admit the ſhowers and dews to penetrate and moiſten the ground, and be of great ſervice to the trees and fruit, and alſo prevent the growth of weeds. And if the ſoil is light and dry, and the ſeaſon ſhould prove hot and dry, there ſhould be large hollows made round the ſtems of the trees to hold water; and into each of theſe there ſhould be poured eight or nine pots of water, which ſhould be repeated once in a week or ten days during the months of june and july, if the ſeaſon ſhould continue dry. There ſhould alſo be ſome mulch laid over the ſurface of theſe hollows, to prevent the ſun and air from drying the ground. Where this is practiſed, the fruit will be kept conſtantly growing, and prove large and plump; whereas, if this is omitted, the fruit will often be ſmall, grow crooked, crack, and fall off from the trees. For if the fruit is once ſtinted in their growth, and rain ſhould fall plentifully after, it will occaſion a great quantity of fruit to fall off the trees, and thoſe which remain to ripen will not keep ſo long as thoſe which never receive any check in their growth; and it is from this cauſe, that ſome years the fruit in general decays before the uſual time. For after it has been for ſome time ſtinted in its growth, and then the ſeaſon proves favourable, whereby it receives a ſudden growth, it becomes ſo replete with juice, as to diſtend the veſſels too ſuddenly, ſo that they will not be firm, which occaſions their decay; therefore it is always beſt to keep the fruit conſtantly in a growing ſtate, whereby it will acquire a proper ſize, and be rendered better flavoured.

There will alſo be required ſome dreſſing to the ground near the fruit-trees; but this ſhould be laid on in autumn, after the trees are pruned. This dreſſing ſhould be different, according to the nature of the

ſoil; if the land is warm and dry, then the dreſſing ſhould be of very rotten dung, mixed with loam; and if this is mixed ſix or eight months before it is laid upon the borders, and three or four times turned over, it will be the better; as will alſo the mixture, if it is made with neat's or hog's dung, both which are colder than horſe-dung, ſo more proper for hot land. But in cold ſtiff land, rotten horſe dung, mixed with light ſandy earth, or ſea-coal aſhes, will be the moſt proper, as this will looſen the ground and add a warmth to it.

Theſe dreſſings ſhould be repeated every other year, otherwiſe the trees will not thrive ſo well, nor will the fruit be ſo good. For, notwithſtanding what many perſons have advanced to the contrary, yet experience is againſt them; for the fineſt fruit in England, both as to ſize and flavour, is produced on land which is the moſt dunged and worked. Therefore I would adviſe trenching the ground about the fruit-trees very well every winter, for I am ſure they will find it anſwer their expectations who ſhall practiſe this method. And where the ground in the quarters is will dreſſed and trenched, the fruit-trees will partake of the benefit; for as the trees advance in their growth, their roots are extended to a great diſtance from their ſtems; and it is chiefly from the diſtant roots that the trees are ſupplied with their nouriſhment: therefore dreſſing the borders only, will not be ſufficient for fruit-trees which are old.

In gathering of Pears, great regard ſhould be had to the bud which is formed at the bottom of the foot-ſtalk, for the next year's bloſſoms; which, by forcing off the Pear before it be mature, is many times ſpoiled; for while the fruit is growing, there is always a bud formed by the ſide of the foot-ſtalk upon the ſame ſpur, for the next year's fruit; but when the Pears are ripe, if they are gently turned upward, the foot-ſtalk will readily part from the ſpur, without injuring the bud.

The ſeaſon for gathering all Summer Pears is juſt as they ripen, for none of theſe will remain good above a day or two after they are taken from the tree; nor will many of the Autumn Pears keep good above ten days or a fortnight after they are gathered. But the winter fruits ſhould hang as long upon the trees as the ſeaſon will permit; for they muſt not receive the froſt, which will cauſe them to rot, and render their juices flat and ill taſted; but if the weather continue mild until the end of October, it will then be a good ſeaſon for gathering them in, which muſt always be done in dry weather, and when the trees are perfectly dry.

In doing this you ought carefully to avoid bruiſing them, therefore you ſhould have a broad flat baſket to lay them in as they are gathered; and when they are carried into the ſtore-room, they ſhould be taken out ſingly, and each ſort laid up in a cloſe heap on a dry place, in order to ſweat, where they may remain for ten days or a fortnight; during which time the windows ſhould be open to admit the air, in order to carry off all the moiſture which is perſpired from the fruit: after this, the Pears ſhould be taken ſingly, and wiped dry with a woollen cloth, and then packed up in cloſe baſkets, obſerving to put ſome Wheat ſtraw in the bottoms, and round the ſides of the baſkets, to prevent their bruiſing againſt the baſkets. And if ſome thick ſoft paper is laid double or treble all round the baſket, between the ſtraw and the Pears, this will prevent the Pears from imbibing the muſty taſte which is communicated to them by the ſtraw, when they are contiguous; which taſte often penetrates through the ſkin ſo ſtrongly, that when the fruit is pared, the taſte will remain. You ſhould alſo obſerve to put but one ſort of fruit into a baſket, leſt by their different fermentations, they ſhould rot each other; but if you have enough of one ſort to fill a baſket which holds two or three buſhels, it will be ſtill better. After you have filled the baſkets, you muſt cover them over with Wheat ſtraw very cloſe, firſt laying a covering of paper two or three times double over the fruit, and faſten them down; then place theſe baſkets in a cloſe room, where they may be kept dry and from froſt; but the leſs air is let into the room, the better the fruit will keep. It will be very neceſſary to fix a label to each baſket, denoting the ſort of fruit therein contained, which will ſave the trouble of opening them, whenever you want to know the ſorts of fruit; beſides, they ought not to be opened before their ſeaſon to be eaten, for the oftener they are opened and expoſed to the air, the worſe they will keep. I do not doubt but this will be objected to by many, who imagine fruit cannot be laid too thin; for which reaſon, they make ſhelves to diſpoſe them ſingly upon, and are very fond of admitting freſh air, whenever the weather is mild, ſuppoſing it very neceſſary to preſerve the fruit; but the contrary of this is found true, by thoſe perſons who have large ſtocks of fruit laid up in their ſtore-houſes in London, which remain cloſely ſhut up for ſeveral months, in the manner before related; and when theſe are opened, the fruit is always found plumper and ſounder than any of thoſe fruits which were preſerved ſingly upon ſhelves, whoſe ſkins are always ſhrivelled and dry. For (as Mr. Boyle obſerves) the air is the cauſe of putrefaction; and, in order to prove this, that honourable perſon put fruits of ſeveral kinds into glaſſes where the air was exhauſted, in which places they remained ſound for ſeveral months, but, upon being expoſed to the air, rotted in a very ſhort time after; which plainly ſhews the abſurdity of the common method now uſed, to preſerve fruit.

All the ſorts of Apples are propagated by grafting or budding upon the ſtocks of the ſame kind, for they will not take upon any other ſort of fruit tree. In the nurſeries there are three ſorts of ſtocks generally uſed to graft Apples upon; the firſt are called free ſtocks; theſe are raiſed from the kernels of all ſorts of Apples indifferently, and ſometimes they are alſo termed Crab ſtocks; for all thoſe trees which are produced from the ſeeds before they are grafted, are termed Crabs without any diſtinction; but, I ſhould always prefer ſuch ſtocks as are raiſed from the kernels of Crabs, where they are preſſed for verjuice; and I find ſeveral of the old writers on this ſubject of the ſame mind. Mr. Auſten, who wrote above a hundred years ago, ſays, "The ſtock which he accounts "beſt for Apple grafts is the Crab, which is better "than ſweeter Apple-trees to graft on, becauſe they "are uſually free from canker, and will become very "large trees; and, I conceive, will laſt longer than "ſtocks of ſweeter Apples, and will make fruits "more ſtrong and hardy to endure froſt;" and it is very certain, that by frequently grafting ſome ſorts of Apples upon free ſtocks, the fruits have been rendered leſs firm and poignant, and of ſhorter duration.

The ſecond ſort of ſtock is the Dutch Paradiſe Apple or Creeper; theſe are deſigned to ſtint the growth of the trees, and keep them within compaſs for dwarfs or eſpaliers.

The third ſort is the Paradiſe Apple, which is a very low ſhrub, and only proper for trees which are kept in pots, by way of curioſity, for theſe do not continue long.

Some perſons have made uſe of Codlin ſtocks for grafting Apples, in order to ſtint their growth; but as theſe are commonly propagated by ſuckers, I would by no means adviſe the uſing them; nor would I chuſe to raiſe the Codlin-trees from ſuckers, but rather graft them upon Crab ſtocks, which will cauſe the fruit to be firmer, laſt longer, and have a ſharper flavour; and theſe trees will laſt much longer ſound, and never put out ſuckers, as the Codlins always do, which, if not conſtantly taken off, will weaken the trees, and cauſe them to canker: and it is not only from the roots, but from the knots of their ſtems, there are generally a great number of ſtrong ſhoots produced, which fill the trees with uſeleſs ſhoots, and render them unſightly, and the fruit ſmall and crumpled.

The method of raiſing ſtocks from the kernels of Crabs, or Apples, is, to procure them where they are preſſed for verjuice or cyder, and after they are cleared of the pulp, they may be ſown upon a bed of light earth, covering them over about half an inch

thick with the ſame light earth; theſe may be ſown in november or december, where the ground is dry, but in wet ground, it will be better to defer it till february; but then the ſeeds ſhould be preſerved in dry ſand, and kept out of the reach of vermin, for if mice or rats can get at them, they will devour the ſeeds; there ſhould alſo be care taken of the ſeeds, when they are ſown, to protect them from theſe vermin, by ſetting traps to take them, &c. In the ſpring, when the plants begin to appear, they muſt be carefully weeded, and if the ſeaſon ſhould prove dry, it will be of great ſervice to water them two or three times a week; and, during the ſummer, they muſt be kept clean from weeds, which, if ſuffered to grow, will ſoon over-top the plants, and ſpoil their growth; if theſe thrive well, they will be fit to tranſplant into the nurſery the october following, at which time the ground ſhould be carefully digged, and cleanſed from the roots of all bad weeds; then the ſtocks ſhould be planted in rows three feet aſunder, and the plants one foot diſtance in the rows, cloſing the earth pretty faſt to their roots; when the ſtocks are tranſplanted out of the ſeed-bed, the firſt autumn after ſowing, they need not be headed, but where they are inclined to ſhoot downward, the tap root muſt be ſhortened, in order to force out horizontal roots; if the ground is pretty good in which theſe ſtocks are planted, and the weeds conſtantly cleared away, the ſtocks will make great progreſs, ſo that thoſe which are intended for dwarfs, may be grafted the ſpring twelve months after they are planted out of the ſeed-bed; but thoſe which are deſigned for ſtandards will require two or three years more growth, before they will be fit to graft, by which time they will be upward of ſix feet high. The other neceſſary work to be obſerved in the culture of theſe trees, while they remain in the nurſery, being exhibited under the article of NURSERY, I ſhall not repeat in this place.

I ſhall next treat of the manner of planting ſuch of theſe trees as are deſigned for eſpaliers in the kitchen-garden, where, if there is an extent of ground, it will be proper to plant, not only ſuch ſorts as are for the uſe of the table, but alſo a quantity of trees to ſupply the kitchen; but where the kitchen-garden is ſmall, the latter muſt be ſupplied from ſtandard-trees, either from the orchard, or wherever they are planted; but as many of theſe kitchen Apples are large, and hang late in the autumn upon the trees, they will be much more expoſed to the ſtrong winds on ſtandard trees than in eſpaliers, whereby many of the fruit will be blown down before they are ripe, and others bruiſed, ſo as to prevent their keeping; therefore where it can be done, I ſhould always prefer the planting them in eſpaliers.

The diſtance which I ſhould chuſe to allow theſe trees, ſhould not be leſs than thirty feet, for ſuch ſorts as are of moderate growth (if upon Crab or free ſtocks:) but the larger growing ſorts ſhould not be allowed leſs room than thirty-five or forty feet, which will be found full near enough, if the ground is good, and the trees properly trained; for as the branches of theſe trees ſhould not be ſhortened, but trained at their full length, ſo in a few years they will be found to meet. Indeed, at the firſt planting, the diſtance will appear ſo great to thoſe perſons who have not obſerved the vigorous growth of theſe trees, that they will ſuppoſe they never can extend their branches ſo far, as to cover the eſpalier; but if theſe perſons will but obſerve the growth of ſtandard-trees of the ſame kinds, and ſee how wide their branches are extended on every ſide, they may be ſoon convinced, that as theſe eſpalier-trees are allowed to ſpread but on two ſides, they will of courſe make more progreſs, as the whole nouriſhment of the root will be employed in theſe ſide branches, than where there is a greater number of branches on every ſide of the tree, which are to be ſupplied with the ſame nouriſhment.

The next thing to be obſerved is the making choice of ſuch ſorts of fruits as grow nearly alike, to plant in the ſame eſpalier. This is of great conſequence, becauſe of the diſtance they are to be placed, otherwiſe thoſe ſorts which make the largeſt ſhoots, may be allowed leſs room to ſpread than thoſe of ſmaller growth; beſide, when all the trees in one eſpalier are nearly equal in growth, they will have a better appearance than when ſome are tall, and others ſhort; but for the better inſtruction of thoſe perſons who are not converſant in theſe things, I ſhall divide the ſorts of Apples into three claſſes according to their different growths.

Largeſt growing tree.

All the ſorts of Pearmains.
Kentiſh Pippin.
Holland Pippin.
Monſtrous Renette.
Royal Ruſſet.
Wheeler's Ruſſet.
Pile's Ruſſet.
Nonpareil.
Violet Apple.

Middle growing tree.

Margaret Apple.
Golden Renette.
Aromatic Pippin.
Embroidered Apple.
Renette Griſe.
White Renette.
Codlin.

Smalleſt growing tree.

Quince Apple.
Tranſparent Apple.
Golden Pippin.
Pomme d'Api.
Fenouillet, or Anis Apple.

N. B. Theſe are all ſuppoſed to be graſted on the ſame ſort of ſtocks.

If theſe Apples are grafted upon Crab ſtocks, I would willingly place them at the following diſtance from each other, eſpecially where the ſoil is good, viz. the largeſt growing trees at forty feet, the middle growing at thirty feet, and the ſmall growing at twenty-five feet, which, from conſtant experience, I find to be full near enough; for in many places, where I have planted theſe trees at twenty-four feet diſtance, they have ſhot ſo ſtrong, as that in ſeven years their branches have met; and in ſome places where every other tree has been taken up, the branches have almoſt joined in ſeven years after; therefore it will be much the better way to plant theſe trees at a proper diſtance at firſt, and between theſe to plant ſome Dwarf Cherries, Currants, or other ſorts of fruit, to bear for a few years, which may be cut away when the Apple-trees have extended their branches to them; for when the Apple-trees are planted nearer together, few perſons care to cut down the trees, when they are fruitful, ſo that they are obliged to uſe the knife, ſaw, and chiſel, more than is proper for the future good of the trees; and many times, where perſons are inclinable to take away part of their trees, the diſtances will be often ſo irregular (where there was not this conſideration in their firſt planting,) as to render the eſpalier unſightly.

When the trees are upon the Dutch Dwarf ſtock, the diſtance ſhould be for the larger growing trees thirty feet, for thoſe of middle growth twenty-five, and the ſmalleſt twenty feet, which will be found full near where the trees thrive well.

The next is the choice of the trees, which ſhould not be more than two years growth from the graft, but thoſe of one year ſhould be preferred; you ſhould alſo be careful, that their ſtocks are young, ſound, and ſmooth, free from canker, and which have not been cut down once or twice in the nurſery; when they are taken up, all the ſmall fibres ſhould be entirely cut off from their roots, which, if left on, will turn mouldy and decay, ſo will obſtruct the new fibres,

fibres, which will ſoon puſh out, in their growth; the extreme part of the roots muſt alſo be ſhortened, and all bruiſed roots cut off; and if there are any miſplaced roots which croſs each other, they ſhould alſo be cut away. As to the pruning of the head of theſe trees, there need be nothing more done than to cut off any branches which are ſo ſituated, as that they cannot be trained to the line of the eſpalier: in the planting, there muſt be care taken not to place their roots too deep in the ground, eſpecially if the ſoil is moiſt, but rather raiſe them on a little hill, which will be neceſſary to allow for the raiſing of the borders afterward. The beſt ſeaſon for planting theſe trees (in all ſoils which are not very moiſt) is, from october, to the middle or latter end of november, according as the ſeaſon continues mild; but ſo ſoon as the leaves fall, they may be removed with great ſafety. After the trees are planted, it will be proper to place down a ſtake to each tree, to which the branches ſhould be faſtened, to prevent the winds from ſhaking or looſening their roots, which will deſtroy the young fibres; for when theſe trees are planted pretty early in autumn, they will very ſoon puſh out a great number of new fibres, which, being very tender, are ſoon broken, by the wind ſhaking the trees, whereby they are greatly injured. If the winter ſhould prove ſevere, it will be proper to lay ſome rotten dung, tanners bark, or ſome other ſort of mulch about their roots, to prevent the froſt from penetrating the ground, which might damage theſe tender fibres; but I would not adviſe the laying this mulch before the froſt begins, for if it is laid over the ſurface of the ground about their roots, ſoon after the trees are planted (as is often practiſed,) it will prevent the moiſture entering the ground, and do much more harm than good to the trees.

The following ſpring, before the trees begin to puſh, there ſhould be two or three ſhort ſtakes put down on each ſide every tree, to which the branches ſhould be faſtened down as horizontally as poſſible, never cutting them down, as is by ſome practiſed, for there will be no danger of their putting out branches enough to furniſh the eſpalier, if the trees are once well eſtabliſhed in their new quarters.

In the pruning of theſe trees, the chief point is, never to ſhorten any of the branches, unleſs there is an abſolute want of ſhoots to fill the ſpaces of the eſpalier; for where the knife is much uſed, it only multiplies uſeleſs ſhoots, and prevents their fruiting; ſo that the beſt method to manage theſe trees is, to go over them three or four times in the growing ſeaſon, and rub off all ſuch ſhoots as are irregularly produced, and train the others down to the ſtakes in the poſition they are to remain: if this is carefully performed in ſummer, there will be little left to be done in the winter, and by bending their ſhoots from time to time, as they are produced, there will be no occaſion to uſe force to bring them down, nor any danger of breaking the branches. The diſtance which theſe branches ſhould be trained from each other, for the largeſt ſorts of fruits, ſhould be about ſeven or eight inches, and for the ſmaller four or five. If theſe plain inſtructions are followed, it will ſave much unneceſſary labour of pruning, and the trees will, at all times, make a handſome appearance; whereas when they are ſuffered to grow rude in ſummer, there will be much greater difficulty to bring down their ſhoots, eſpecially if they are grown ſtubborn, when it may become neceſſary to ſlit the branches to make them pliable. All the ſorts of Apples produce their fruit upon curſons, or ſpurs, ſo that theſe ſhould never be cut off, for they will continue fruitful a great number of years.

The method of making the eſpaliers having been already exhibited under that article, I need not repeat it here, but only obſerve, that it will be beſt to defer making the eſpalier till the trees have had three or four years growth; for before that time, the branches may be ſupported by a few upright ſtakes, ſo that there will be no neceſſity to make the eſpalier, until there are ſufficient branches to furniſh all the lower part.

I ſhall now treat of the method to plant orchards, ſo as to have them produce the greateſt profit. And firſt, in the choice of the ſoil and ſituation for an orchard: the beſt ſituation for an orchard is, on the aſcent of the gentle hills, facing the ſouth, or ſouth-eaſt; but this aſcent muſt not be too ſteep, leſt the earth ſhould be waſhed down by haſty rains. There are many perſons who prefer low ſituations at the foot of hills, but I am thoroughly convinced from experience, that all bottoms where there are hills on each ſide, are very improper for this purpoſe; for the air is drawn down into theſe vallies in ſtrong currents, which, being pent in renders theſe bottoms much colder than the open ſituations; and during the winter and ſpring, theſe bottoms are very damp and unhealthy to all vegetables; therefore the gentle riſe of a hill, fully expoſed to the ſun and air, is by much the beſt ſituation. As to the ſoil, a gentle hazel loam, which is eaſy to work, and that does not detain the wet, is the beſt; if this happens to be three feet deep, it will be better for the growth of the trees, for although theſe trees will grow upon very ſtrong land, yet they are ſeldom ſo thriving, nor are their fruit ſo well flavoured, as thoſe which grow on a gentle ſoil; and on the other hand, theſe trees will not do well upon a very dry gravel or ſand, therefore thoſe ſoils ſhould never be made choice of for orchards.

The ground intended to be planted ſhould be well prepared the year before, by ploughing it thoroughly, and if ſome dung is laid upon it the year before, it will be of great ſervice to the trees; if in the preceding ſpring a crop of Peas or Beans is planted on the ground (provided they are ſown or planted in rows, at a proper diſtance, ſo as that the ground between them is horſe-hoed,) it will deſtroy the weeds, and looſen the ground, ſo that it will be a good preparation for the trees, for the earth cannot be too much wrought, or pulverized for this purpoſe: theſe crops will be taken off the ground long before the ſeaſon for planting theſe trees, which ſhould be as ſoon as poſſible performed when the trees begin to ſhed their leaves.

In chuſing the trees, I would adviſe the taking ſuch as are but of two years growth from the graft, and never to plant old trees, or ſuch as are grafted upon old ſtocks, for it is loſing of time to plant theſe; young trees being always more certain to grow, and make a much greater progreſs than thoſe which are old. As to pruning the roots, it muſt be done in the ſame manner as has been already directed for the eſpalier-trees; and in pruning their heads, little more is neceſſary than to cut out ſuch branches as are ill placed, or that croſs each other; for I do not approve the heading of them down, as is by ſome often practiſed to the loſs of many of their trees.

The diſtance which theſe trees ſhould be planted, where the ſoil is good, muſt be fifty or ſixty feet; and where the ſoil is not ſo good, forty feet may be ſufficient; but nothing can be of worſe conſequence, than the crowding trees too cloſe together in orchards. And although there may be ſome who may imagine this diſtance too great, yet I am ſure, when they have thoroughly conſidered the advantages attending this practice, they will agree with me. Nor is it my own opinion in this affair, for in many of the old writers on this ſubject, there is often mention made of the neceſſity for allowing a proper diſtance to the fruit-trees in orchards, particularly Auſten, upon planting before quoted, who ſays, "He ſhould chuſe to pre-"ſcribe the planting theſe trees fourteen or ſixteen "yards aſunder; for both trees and fruits have many "great advantages, if planted a good diſtance one "from another." One advantage he mentions is, "The ſun refreſhes every tree, the roots, body, and "branches, with the bloſſoms and fruits; whereby "trees bring forth more fruit, and thoſe fairer and "better." Another advantage he mentions is, "That "when trees are planted at a large diſtance, much "profit may be made of the ground under and about "theſe trees, by cultivating garden-ſtuff, commo-"dious as well for ſale as houſekeeping; as alſo "Gooſeberries, Raſpberries, Currants, and Straw-"berries,

" berries, may be there planted." Again he ſays, " When trees have room to ſpread, they will grow " very large and great; and the conſequences of that " will be, not only multitudes of fruits, but alſo long " laſting, and theſe two are no ſmall advantages." For, ſays he, " Men are miſtaken, when they ſay, " the more trees in an orchard, the more fruits; for " one or two large trees which have room to ſpread, " will bear more fruits than ſix or ten (it may be) of " thoſe that grow near together, and crowd one an- " other." Again he ſays, " Let men but obſerve, " and take notice of ſome Apple-trees, that grow a " great diſtance from other trees, and have room " enough to ſpread both their roots and branches, " and they ſhall ſee, that one of thoſe trees (being " come to full growth) hath a larger head, and more " boughs and branches, than (it may be) four, or ſix, " or more, of thoſe which grow near together, al- " though of the ſame age."

And Mr. Lawſon, an ancient planter, adviſes to plant Apple-trees twenty yards aſunder. As the two authors above quoted have written the beſt upon this ſubject, and ſeem to have had more experience than any of the writers I have yet ſeen, I have made uſe of them as authorities to confirm what I have advanced; though the fact is ſo obvious to every perſon who will make the leaſt reflection, that there needs no proof.

When the trees are planted, they ſhould be ſtaked, to prevent their being ſhaken, or blown out of the ground by ſtrong winds; but in doing this, there ſhould be particular care taken, to put either ſtraw, haybands, or woollen cloth, between the trees and the ſtakes, to prevent the trees from being rubbed and bruiſed, by the ſhaking againſt the ſtakes, for if their bark ſhould be rubbed off, it will occaſion ſuch great wounds, as not to be healed over in ſeveral years, if they ever recover it.

If the winter ſhould prove very ſevere, it will be proper to cover the ſurface of the ground about their roots with ſome mulch, to prevent the froſt from penetrating the ground, which will deſtroy the young fibres; but this mulch ſhould not be laid on too ſoon, as has been before mentioned, leſt the moiſture ſhould be prevented from ſoaking down to the roots of the trees, nor ſhould it lie on too long in the ſpring for the ſame reaſon; but where perſons will be at the trouble to lay it on in froſty weather, and remove it again after the froſt is over, that the wet in february may have free acceſs to the roots of the trees it will do good; and if march ſhould prove dry, with ſharp north or eaſt winds, which often happens, it will be proper to cover the ground again with the mulch, to prevent the winds from penetrating and drying the ground, and will be of ſingular ſervice to the trees. But I am aware, that this will be objected to by many, on account of the trouble, which may appear to be great; but when it is conſidered, how much of this buſineſs may be done by a ſingle perſon in a ſhort time, it can have little force, and the benefit which the trees will receive by this management, will greatly recompenſe the trouble and expence.

As theſe trees muſt be conſtantly fenced from cattle, it will be the beſt way to keep the land in tillage for ſome years, that by conſtant ploughing or digging the ground, the roots of the trees will be more encouraged, and they will make the more progreſs in their growth: but where this is done, whatever crops are ſown or planted, ſhould not be too near the trees, leſt the nouriſhment ſhould be drawn away from the trees; and as in the ploughing of the ground where it is ſo tilled, there muſt be care taken not to go too near the ſtem of the trees, whereby their roots would be injured, or the bark of their ſtems rubbed off, ſo it will be of great ſervice to dig the ground about the trees where the plough does not come, every autumn, for five or ſix years after planting, by which time their roots will have extended themſelves to a greater diſtance.

It is a common practice in many parts of England, to lay the ground down for paſture, after the trees are grown pretty large in their orchards; but this is by no means adviſeable, for I have frequently ſeen trees of above twenty years growth, almoſt deſtroyed by horſes, in the compaſs of one week; and if ſheep are put into orchards, they will conſtantly rub their bodies againſt the ſtems of the trees, and their greaſe ſticking to the bark, will ſtint their growth, and in time will ſpoil them; therefore wherever orchards are planted, it will be much the better method to keep the ground ploughed or dug annually, and ſuch crops put on the ground as will not draw too much nouriſhment from the trees.

In pruning of orchard-trees, nothing more ſhould be done, but to cut out all thoſe branches which croſs each other, and, if leſt, would rub and tear off the bark, as alſo decayed branches, but never ſhorten any of their ſhoots. If ſuckers, or ſhoots from their ſtems, ſhould come out, they muſt be entirely taken off annually; and when any branches are broken by the wind, they ſhould be cut off, either down to the diviſion of the branch, or cloſe to the ſtem from whence it was produced; the beſt time for this work is in november, for it ſhould not be done in froſty weather, nor in the ſpring, when the ſap begins to be in motion.

The beſt method to keep Apples for winter uſe is, to let them hang upon the trees until there is danger of froſt, and to gather them in dry weather, laying them in large heaps to ſweat for three weeks or a month; afterwards look them over carefully, taking out all ſuch as have appearance of decay, wiping all the ſound fruit dry, and pack them up in large oil-jars, which have been thoroughly ſcalded and dry, ſtopping them down cloſe to exclude the external air: if this is duly obſerved, the fruit will keep ſound a long time, and their fleſh will be plump; for when they are expoſed to the air, their ſkins will ſhrink, and their pulp will be ſoft.

[It has been lately made evident, particularly by the experiments and curious remarks of T. A. Knight, Eſq; that thoſe varieties of the Apple, of which the original trees had periſhed from old age, could not be made to grow to any purpoſe. The grafts, he ſays, grow well for two or three years; but after that become cankered and moſſy. When he firſt obſerved the unhealthy ſtate of all the young trees of theſe kinds, he ſuſpected that it aroſe from the uſe of diſeaſed grafts taken from old trees; and that he ſhould be able to propagate all the valuable varieties by buds taken from young newly grafted trees: but to remove ſtill farther every probability of defect which might be communicated from the old trees, he inſerted the young ſhoots and buds, taken from newly grafted trees, on other young ſtocks, and repeated this proceſs ſix times in as many years, each year taking his grafts and buds from thoſe inſerted in the year preceding. Stocks of different kinds were alſo uſed; ſome were double grafted, others were obtained from trees which grew from cuttings, and others from the ſeeds of each kind afterwards inſerted in them, under the idea that there might be ſomething congenial to the fruits in theſe. The grafts grew tolerably, and equally in all; but there was a want of hardneſs and elaſticity in the wood, and at the end of three or four years all began to canker. This diſeaſe is always found in thoſe varieties which have been long in cultivation; and in theſe it annually becomes more deſtructive, and evidently ariſes from the age of the variety; but it often appears to be hereditary. A gravelly or wet ſoil, a cold preceding ſummer, or a high expoſed ſituation, add much to its virulence. It is moſt fatal to young free-growing trees of old varieties; and even the ſtrong ſhoots of theſe will be totally deſtroyed by it, when the old trees growing in the ſame orchard, and from which the grafts had been taken, were nearly free from the diſeaſe. The young ſtocks, by affording the grafts a preternatural abundance of nouriſhment, ſeem to bring on the diſeaſe; and tranſplanting, or a heavy crop of fruit, which check the growth of the tree, diminiſh its diſpoſition to canker. In middle-aged trees of very old varieties a ſucceſſion of young ſhoots is annually produced by the vigour of the ſtock, and deſtroyed again in the ſucceeding winter: the quantity of fruit theſe produce

is in conſequence very ſmall. In this diſeaſe ſomething more than a mere extinction of vegetable life appears to take place. The internal bark bears marks of ſomething ſimilar to eroſion; and this is probably the original ſeat of the diſeaſe, though the wood of the annual ſhoots is ſoon tinged to the centre. The canker does not appear to be ever a primary or merely local diſeaſe, but to ariſe from the morbid habit of the plant, and to be incurable by any topical application.

Being after much unſucceſsful experience ſatisfied, that thoſe varieties of the Apple, of which the original trees had long periſhed from old age, could not be made to grow; Mr. Knight ſuſpected, that grafts taken from very young ſeedling trees, not yet in a bearing ſtate, could not by any means be made to produce fruit. Having taken cuttings from ſome of theſe of two years old, he inſerted them in ſtocks of twenty, which had already produced fruit. He afterwards frequently tranſplanted, and took every means in his power to make them produce bloſſoms; but though they grew in rich ground, which probably tended to accelerate their maturity, he did not ſucceed till the ſeedling trees were twelve years old, the age at which they uſually produce fruit; and then other grafts of the ſame kind, which had been inſerted but three years before, readily bloſſomed. Other cuttings were inſerted in very old ſtocks, which were regrafted; theſe grew with exceſſive vigour, but did not produce bloſſoms ſo ſoon as the others.

From the reſult of theſe experiments, and from the general failure of every attempt to propagate every old variety of the Apple, Mr. Knight thinks himſelf juſtified in the concluſion, that all Apples, however propagated from the ſame ſtock, partake in ſome degree of the ſame life, and will attend it in the habits of their youth, their maturity and decay; though they will not be any way affected by any incidental injuries the parent tree may ſuſtain, after they are detached from it. The roots however, and the trunk adjoining them, appear to poſſeſs in all trees a greater degree of durability than the bearing branches, having a power of producing new ones, when the old have been deſtroyed by accident, or even by old age: and grafts taken from ſcions, which have ſprung out of the trunks of old ungrafted Apple and Pear trees, will grow with much greater luxuriance than thoſe taken at the ſame time from the extremities of the bearing branches. The former in their growth aſſume the appearance of young ſeedling ſtocks, and the ſhoots of the Pear are, like thoſe covered with thorns. Thoſe propagated from the bearing branches frequently produce fruit the ſecond year, but the others remain long unproductive. It appears therefore extremely probable, that ſuch trees as the Walnut and Mulberry, which do not produce fruit in leſs than twenty years, might be rendered fruitful in one third of that time, by being grafted with cuttings taken from the productive branches of an old tree.

Since then the valuable varieties of the Apple and Pear cannot be continued for ever, till new varieties can be raiſed equally valuable, let us ſee whether the duration of the old ones may not be conſiderably prolonged by art.

Now the life of every tree appears to be greatly prolonged, when its branches are frequently taken off; and there is not the leaſt doubt but that the life of an Apple or Pear might be prolonged to thrice its natural period, by robbing it of its branches as ſoon as the qualities of its fruit are known; and retaining it as a pollard, or rather as a ſtool in a coppice, which is felled at regular periods: for theſe are known to poſſeſs a much greater degree of durability, than the ſame kind of tree left in the natural ſtate; and to produce a vigorous ſucceſſion of branches during ſeveral centuries. It is however probable that after a certain period, each effort of nature will be inferior to the preceding: for timber trees which ſpring from old ſtools, are obſerved to attain only a ſmall ſtature, with an early maturity and decay. Should any valuable variety of the Apple be retained in the ſtate here deſcribed, its branches ſhould be taken off every third or fourth year, and uſed for grafts, and it ſhould never be ſuffered to produce fruit or bloſſoms. Under this mode of treatment, there is little doubt but that the ſame variety might be propagated through many centuries.

It appears alſo probable that the latter period of the exiſtence of the Apple-tree would be conſiderably prolonged in a ſouthern climate, for all the old varieties ſucceed beſt in warm ſituations, and the moſt diſeaſed flouriſh with the greateſt vigour when trained to a ſouth wall. This mode of culture might probably be adopted with much advantage, when new varieties are to be obtained from ſeed; and the production of theſe muſt be the firſt thing to engage the attention of the planter of the preſent day [f].

For this purpoſe, Mr. Marſhall recommends to elect among the varieties, individuals of the higheſt flavour: to ſow the ſeeds in a highly enriched ſeed-bed: to ſelect from among the ſeedlings the plants wherein the wood and leaves have the beſt appearance: to tranſplant theſe into a rich deep ſoil, in a good ſituation, at due diſtances: letting them remain in this nurſery, until they begin to bear.

With the ſeeds of the faireſt, richeſt and beſt-flavoured fruit, repeat this proceſs: and at the ſame time, or in due ſeaſon, engraft the wood which produced this fruit, on that of the richeſt, ſweeteſt, beſt-flavoured Apple: repeating this operation, and tranſferring the ſubject under improvement, from one tree and ſort to another, as richneſs, flavour or firmneſs may require. Continuing this double mode of improvement, until the deſired fruit be obtained [g].

Such trials are doubly worth making; but it would be difficult to ſay what might be the iſſue of them until they are actually made.

When Mr. Knight began to ſuſpect that his endeavours to propagate the old fruits would not be ſucceſsful, he ſelected ſeeds of ſome of the beſt kinds, with an intention to propagate new ones: but he ſoon found that many of the young plants, particularly thoſe from the Golden Pippin, were nearly as much diſeaſed as the trees which produced them. He ſeveral times raiſed three or four plants from ſeeds taken from one Apple, and when this had been produced by a diſeaſed tree, he had not only as many varieties as there were ſeeds, but ſome were much diſeaſed, and others apparently healthy; though the ſeeds were ſown in the ſame ſoil, and the plants afterwards grew within two feet of each other in the nurſery. Grafts having been inſerted from each, retained the habits of the tree from which they were taken. Few, however, if any, appeared to poſſeſs a ſufficient degree of vigour to promiſe much ſucceſs in their cultivation, except in very favourable ſituations, even ſhould their fruit be good.

Having before obſerved that all the old fruits were free from diſeaſe when trained to a ſouth wall, Mr. Knight thought it not improbable that ſeedling plants raiſed from them would be equally healthy; and that their bloſſoms being expanded before thoſe of the neighbouring orchards, they would not be impregnated by the farina of inferior kinds. With a view to try this, he prepared ſtocks of the beſt kind of Apple which could be propagated by cuttings, planted them againſt a ſouth wall, in extremely rich mould, and graſted them with the Stire, Golden Pippin, and a few other fruits, whoſe time of ripening ſuited the ſituation in which he wiſhed to plant. In the courſe of the enſuing winter the young trees were dug up, and their roots having been retrenched, were planted again in the ſame places. This mode of treatment had the deſired effect of making them produce bloſſoms at two years old. He ſuffered only one or two fruits to remain on each tree, which in conſequence attained nearly three times their common ſize, with a very high degree of maturity and perfection; and the appearance of the plants he raiſed from their ſeeds ſo much excelled any he had formerly obtained from the ſame fruits taken from the orchard, that he thinks he can confidently recommend the method he adopted.

[f] Treatiſe on the culture of the Apple and Pear, p. 10. to 23.
[g] Glouceſterſh. 4. 249.

He had choſen fruits poſſeſſing excellencies and defects of oppoſite kinds, with a wiſh to ſee, either through the induſtry of bees or his own, the effects of a proceſs ſimilar to what is called by breeders of animals, croſſing the breed.

A few days before the bloſſoms expanded, he opened the petals and deſtroyed the males in all the bloſſoms which he ſuffered to remain of one kind, taking great care to leave the females uninjured: and when theſe bloſſoms were fully expanded, he impregnated half of them with farina taken from another kind of fruit, leaving the other half to the care of the bees, which collected about them in great numbers. Every fruit which he impregnated grew rapidly, whilſt half of thoſe on the other tree, which remained in their natural ſtate failed, with every one of thoſe left to the care of the bees. Whence we may conclude that theſe inſects are not ſo good carriers of the farina of plants, as is generally ſuppoſed by naturaliſts. The plants he obtained from the fruits on which this experiment was made, were certainly the moſt promiſing of any, but whether they will remain free from hereditary diſeaſe and debility or not, remains to be proved. Every ſeed, though taken from the ſame Apple furniſhes a diſtinct variety; and ſome of theſe will grow with more luxuriance than others, and the fruits produced by the different plants will poſſeſs different degrees of merit; but an eſtimate may be made of their good and bad qualities at the concluſion of the firſt ſummer, by the reſemblance the leaves bear to the highly cultivated or wild kinds. The plants whoſe buds in the annual wood are full and prominent are uſually more productive than thoſe whoſe buds are ſmall and ſhrunk into the bark; but their future produce will depend much on the power the bloſſoms poſſeſs of bearing cold, and this power varies in the different varieties, and can only be known from experience. Thoſe which produce leaves and bloſſoms rather early in the ſpring are generally to be preferred, for though they are more expoſed to injury from froſt, they leſs frequently ſuffer from the attacks of inſects, the more common cauſe of failure.

The Apple being moſt eaſily propagated by grafting, the means of obtaining proper Stocks muſt be among the firſt things to occupy the attention of the planter. A preference has generally, and juſtly been given to thoſe raiſed from the ſeeds of the Crab, as being more hardy and durable than thoſe produced from the Apple. The tree from which the ſeeds are taken ſhould be large and of free growth; and rather in a growing ſtate than one of maturity or decay. Crab trees that ſtand in cultivated grounds generally grow more freely, and attain a larger ſtature than thoſe in woods, and therefore appear to claim a preference. The ſeeds ſhould be taken from the fruit before it is ground, and ſown in beds of rich mould an inch deep. From theſe the plants ſhould be removed in the following autumn to the nurſery, and planted in rows at three feet diſtance from each other, and eighteen inches between each plant. Being protected from cattle and hares, they may remain here till they become large enough to be planted out; but the ground muſt be regularly worked and kept free from weeds.

The Apple tree ſucceeds beſt in ſituations which are neither high nor remarkably low. In the former its bloſſoms are frequently injured by cold winds, and in the latter by ſpring-froſts, particularly when the trees are planted in the loweſt part of a confined valley. A ſouth or ſouth-eaſt aſpect is generally preferred, on account of the turbulence of the weſt wind, and the coldneſs of the north wind; but Orchards ſucceed well in all, and where the violence of the weſt-wind is broken by an intervening riſe of ground, a ſouth-weſt aſpect will be found equal to any. The trees attain their largeſt ſtature in a deep ſtrong loam, but will grow well in all rich ſoils, which are neither very ſandy nor wet. They are ſaid to do beſt where the ground is much trod and manured by cattle in winter. Places where old Apple trees have grown are eſteemed unfavourable to young ones; and where fruit trees are kept near a houſe for convenience; Pears and Apples or other different ſorts ſhould be made to ſucceed each other.

Blights are produced by a variety of cauſes; by inſects, by an exceſs of heat or cold, of drought or moiſture; for theſe neceſſarily derange if they do not deſtroy the delicate organization of the bloſſom: but the common opinion that they ariſe from ſome latent noxious quality in the air, or from lightning, ſeems to be totally unfounded. The term *Blight* is frequently uſed by the gardener and farmer, without any defined idea being annexed to it. If the leaves of their trees be eaten by the caterpillar, or contracted by the aphis or plant-louſe; if the bloſſoms fall from the ravages of inſects, or without any apparent cauſe, the trees are ſaid to be blighted: and if an eaſt wind happen to have blown, the inſects, or at leaſt their eggs, whatever be their ſize, are ſuppoſed to have been brought by it. This opinion has probably been taken up from the hazy appearance of the air, which uſually accompanies warm days and froſty nights with a north-eaſt wind in the ſpring. This weather is injurious to the bloſſom of every tree, and particularly ſo to that of the Apple; for the warmth of the day hatches the eggs of the inſect that breeds in it, whilſt the coldneſs of the night, by checking the progreſs of the ſap, retains the bloſſom in its half-expanded ſtate, to form a nidus for it. This inſect, which aſſumes the winged ſtate in july, is a ſmall brown beetle, and it then probably lays thoſe eggs on the trees, which, if the ſucceeding ſeaſon be unfavourable, prove deſtructive of the future crop of fruit. The leaves and bloſſoms are ſometimes deſtroyed by numerous hoſts of caterpillars, ſome kinds of which become flies in the ſummer and autumn, others in the ſucceeding ſpring. Several of the ſmall birds, which are accuſed of injuring the bloſſoms of fruit-trees, do not injure them intentionally, but only accidentally in hunting after the above-named noxious little animals.

Theſe however do not excluſively belong to the Apple tree; but there is an extremely minute inſect of the cochineal tribe, which has lately appeared on the Apple trees near London, and has done incredible damage to them. Small downy ſpots appear on the ſtems and branches of the trees, each of which covers a multitude of theſe inſects, which are attached to the bark by their ſuckers, and fed by its juices. The trees on which they abound appear like tender exotics, the points of whoſe branches have been killed by the preceding winter. The inſects were firſt obſerved about Kennington in the year 1788, and were ſaid to have been imported from France. They have ſince gradually extended themſelves, and no means of deſtroying them have been yet diſcovered. It is the opinion of the moſt experienced nurſerymen round London, that all the Apple trees in that neighbourhood will be deſtroyed in a few years, if the inſects increaſe as rapidly as they have lately done.

The bloſſoms of the Apple appear alſo to fail not unfrequently from the want of impregnation, when the weather is unuſually hot and dry, or when cold winds prevail; the farina withering and dying on the anthers in ſuch ſeaſons. In each of theſe caſes, thoſe trees are always moſt productive, which having had the good fortune to eſcape the defolating hand of the prunet, are moderately full of wood, and capable of affording their bloſſoms ſome protection from froſt and cold winds, or exceſſive heat. Not that judicious pruning is to be reprobated, on the contrary it ought very frequently to be done; but every Apple tree ought to retain much of the cloſe branchy growth which nature gives it. The pruning-knife may however be uſed with ſome degree of freedom on young trees, for the branches of theſe ſoon repair any breaches which may be made in them; but if an old tree, or one which has ceaſed to grow larger, be ſo thinned as to admit a free current of air through it, the tree is ruined for ever. It has been ſuppoſed that the fruit, which ſtands expoſed to the ſun and air on the outſides of the branches, is alone capable of making fine Cider, but experience by no means juſtifies this concluſion[a].

[a] Culture of the Apple and Pear, 36 to 92.

Mr Bucknall is nearly of the ſame opinion with Mr. Knight reſpecting *Blight*. He ſuppoſes, that whatever has a tendency to prevent the due impregnation of the bloſſoms, or injure the foliage of the tree, ill in a certain degree cauſe blight. Some imagine that inſects are brought over in thick hazy clouds but they do not come over with winds from the continent, but are bred at home from eggs depoſite about the tree in ſummer and autumn. And reſpecting cold, it is not ſo much that which does the miſchief, as an alternate ſucceſſion of cold and heat. Cold cider-water, or land ſprings ſtunt the tree, and cauſe blight. Long drought, with drying winds, injure the ſaps, ſo that it performs its office imperfectly. Other cauſes may predispoſe the tree to blight, as an overabundant crop the preceding year, a want of free circulation of air, &c. but inſects for the moſt part produce the miſchief.

Asa remedy to this diſeaſe, Mr. Bucknall principally recommends cleanlineſs. Should the trees be old, ays he, in a declining ſtate of health, or the branches covered with rotten bark, moſs, &c. under which inſects may depoſit their eggs, ſwarms of depredators will iſſue forth to deſtroy the weakly foliage and bloſſoms. On the contrary, where trees are clean and in health, inſects are not ſo numerous, neither are they capable of being ſo deſtructive: for ſhould they even devour part of the opening buds and leaves, a healthy tree will have ſufficient ſtrength to produce at leſt a ſlight crop of fruit. For cleanſing trees from inſects oil has a good effect, or oil mixed with a little ſulphur or tobacco duſt, or bitter aloes, to give he oil the conſiſtence of a thin paint; or waſhing them well with ſoap-ſuds will anſwer the purpoſe[1]. For further particulars on this ſubject, ſee the articles BLIGHT and ORCHARD.

6. The Chineſe Apple tree, though perfectly hardy, ſhould be planted in a ſheltered ſituation; it is uſually increaſed by grafting it on the Crab ſtock[2].

9. The Virginian Crab tree with ſweet flowers is alſo increaſed by grafting or budding on the common Crab; but it is ſomewhat tender whilſt young, and therefore ſhould be planted in a warm ſituation.

12. The Portugal Quince is the moſt valuable, the pulp of it turning to a fine purple when ſtewed or baked, and becoming much ſofter and leſs auſtere than the others, is much better for making marmalade.

They are all eaſily propagated either by layers, ſuckers, or cuttings, which muſt be planted in a moiſt ſoil. Thoſe raiſed from ſuckers are ſeldom ſo well rooted as thoſe which are obtained from cuttings or layers, and are ſubject to produce ſuckers again in greater plenty, which is not ſo proper for fruit-bearing trees. The cuttings ſhould be planted early in the autumn, and in very dry weather muſt be often watered to encourage their rooting. The ſecond year after they ſhould be removed into a nurſery at three feet diſtance row from row, and one foot aſunder in the rows, where they muſt be managed as was directed for Apples. In two or three years time theſe trees will be fit to tranſplant, where they are to remain, which ſhould be either by the ſide of a ditch, river, or in ſome other moiſt place, where they will produce a greater plenty, and much larger fruit than in a dry ſoil; though thoſe in a dry ſoil will be better taſted, and earlier ripe. Theſe trees require very little pruning; the chief thing to be obſerved is, to keep their ſtems clear from ſuckers, and to cut off ſuch branches as croſs each other; likewiſe all upright luxuriant ſhoots from the middle of the tree ſhould be taken entirely out, that the head may not be too much crowded with wood, which is of ill conſequence to all ſorts of fruit-trees. They may alſo be propagated by budding or grafting upon ſtocks raiſed by cuttings, ſo that the beſt ſorts may be cultivated in greater plenty this way, than by any other method: and theſe trees will bear fruit much ſooner, and be more fruitful than thoſe which come from ſuckers or layers.

Theſe are alſo in great eſteem for ſtocks to graft and bud Pears on, which for ſummer and autumn fruits are a great improvement to them, eſpecially thoſe deſigned for walls and eſpaliers; for the trees upon theſe ſtocks do not ſhoot ſo vigorouſly as thoſe upon free ſtocks, and therefore may be kept in leſs compaſs, and are ſooner diſpoſed to bear fruit: but hard winter fruits do not ſucceed ſo well upon theſe ſtocks, their fruit being very ſubject to crack, and are commonly ſtony, eſpecially all the breaking Pears; therefore theſe ſtocks are only proper for the melting Pears, and for a moiſt ſoil. The beſt ſtocks are thoſe which are raiſed from cuttings or layers.

As the Pear will take upon the Quince by grafting or budding, and ſo vice verſa, we may conclude there is a near alliance between them; but neither of theſe will take upon the Apple, nor that upon either of theſe.

PYRUS. See *Crataegus*, *Mespilus*.

PYXIDARIA. See *Lindernia*.

[1] Tranſact. See. Arts for 1799, p. 274. [2] Curtis.

END OF PART I. VOL. II.

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